MITIGATION SCHEDULE: 7.8

DECARBONISATION

Cory Decarbonisation Project

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Revision B

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009) - Regulation 5(2)(q)

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1. PURPOSE

1.1.1. The purpose of this document is to summarise the proposed mitigation, monitoring or other measures to prevent, offset and/or minimise the effects of the Proposed Scheme. The measures proposed have been drawn from the following documentation:

- The provisions of the **Draft DCO (Document Reference 3.1)**;
- **Outline Code of Construction Practice (Outline CoCP) (Document Reference 7.4)**; and
- **Environmental Statement (ES) (Volume 1) (Document Reference 6.1)**; and
- **Environmental Statement (ES) (Volume 3 (Document Reference 6.3)**.

2. STRUCTURE OF THIS MITIGATION SCHEDULE

2.1.1. The proposed mitigation, monitoring or other measures are summarised in **Table 1** through to **Table 20** for the construction and operation phases.

2.1.2. Tables are separated by specific environmental topics. Each topic refers to the relevant chapter of the **Environmental Statement (Volume 1** and **Volume 3) (Document Reference 6.1** and **6.3)** where detailed information is provided.

2.1.3. Each table consists of seven separate columns:

- Column 1 – Each environmental topic sensitive receptor has a unique ID for the Contractor(s) to easily identify across each environmental topic.
- Column 2 – The specific environmental topic sensitive receptors.
- Column 3 – The description of the impact.
- Column 4 – Outlines the specific embedded and additional mitigation measures in response to the identified effects on said receptor(s).
- Column 5 – The residual effects on said receptor(s), once mitigation has been implemented.
- Column 6 – Any proposed monitoring to take place in relation to said effects and receptor(s).
- Column 7 – Details on how the mitigation and/or monitoring measures will be secured.

3. PROPOSED MITIGATION, MONITORING OR OTHER MEASURES

Table 1: Air Quality - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
Construction Phase							
1.1	Nearby places of work	Dust, PM_{10} and $PM_{2.5}$	Dust soiling effects during works	*Embedded Mitigation and Additional Mitigation* The following mitigation measures would form the basis (i.e. they will be applied where relevant to the detailed construction methodology) of the full CoCP(s) by the Contractor(s) to reduce potential effects to sensitive receptors as listed in Section 5.5 of **Chapter 5: Air Quality (Volume 1)** of the **Environmental Statement (Document Reference 6.1)**, taken from IAQM Dust Guidance[1]. <u>Communications:</u> *Embedded Mitigation:* • display the name and contact details of person(s) accountable for air quality and dust issues on the Site. This may be the environment manager/engineer or the Site Manager; and • display the head or regional office contact information; and • develop and implement a Dust Management Plan (DMP) as an appendix to the full CoCP(s), which may include measures to control other emissions. *Additional Mitigation:* • develop and implement a Community Engagement Plan to be implemented before work commences onsite. <u>Site Management:</u> *Embedded Mitigation:* • record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken; • make the complaints log available to the local authority when asked; and • record any exceptional incidents that cause dust and/or air emissions, either on or offsite, and the action taken to resolve the situation in the logbook. *Additional Mitigation:* • hold regular liaison meetings with other high risk construction sites within 200m of the Site Boundary (if applicable), to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the	**Negligible (Not Significant)**	Dust monitoring should be undertaken during the construction phase of the Proposed Scheme. Continuous dust monitoring will be undertaken at locations along the Site due to the potential effects of dust during construction of the Proposed Scheme. Alarms will be set up to alert the LBB when concentrations of dust/PM_{10}/$PM_{2.5}$ reach a certain threshold. IAQM Guidance on Monitoring in the Vicinity of Demolition and	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The full CoCP(s) is secured through requirement a of the **Draft DCO (Document Reference 3.1)** which must be in substantial accordance with this outline and will include a
1.2	Nearby places of work		Potential effects on human health during works		**Negligible (Not Significant)**		
1.3	Crossness LNR		Ecological effects works		**Negligible (Not Significant)**		
1.4	Nearby places of work	Emissions of NO_2, PM_{10} and $PM_{2.5}$ from Operation NRMM exhaust emissions	Potential effects on human health		**Negligible (Not Significant)**		
1.5	Crossness LNR		Potential effects ecological receptors		**Negligible (Not Significant)**		
1.6	Roadside residential properties	Road traffic emissions of NO_2, PM_{10} and $PM_{2.5}$	Potential effects on human health		**Negligible (Not Significant)**		
1.7	Crossness LNR		Potential effects ecological receptors		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
1.8	Anywhere with exposure, but primarily England Coast Path (FP1/NCN1)	Marine vessel emissions of NO_2, SO_2, PM_{10} and $PM_{2.5}$	Potential effects on human health	interactions of the offsite transport/deliveries which might be using the same strategic road network routes; and • the developer and the appointed Contractor(s) are to actively monitor the Site to ensure the control of dust and emissions. Dry and windy conditions increase the likelihood of dust and emissions being produced and dispersed, so extra Site monitoring will take place during these times. <u>Monitoring:</u> *Embedded Mitigation:* • carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to London Borough of Bexley (LBB) when asked; and • increase the frequency of site inspections by the person accountable for air quality and dust issues onsite when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. *Additional Mitigation:* • undertake daily onsite and offsite inspection, where receptors within 100m of Site Boundary (including roads) are nearby, to monitor dust, record inspection results, and make the log available to LBB when asked; and • agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the LBB. Where possible commence baseline monitoring at least three months before work commences onsite. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction[1]. <u>Preparing and Maintaining the Site:</u> *Embedded Mitigation:* • plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible; • site hoarding erected to minimise intrusion (including dust) from construction activities on PRoW; • erect solid screens or barriers around dusty activities or the Site that are at least as high as any stockpiles onsite; and • the Site will be bunded to prevent run-off. *Additional Mitigation:* • fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period; • hoardings, keep site fencing, barriers and scaffolding clean using wet methods;	**Negligible (Not Significant)**	Construction Sites[1] will be used when designing the monitoring survey.	DMP as an appendix.
1.9	All ecological sites, primarily Crossness LNR and Inner Thames Marshes/Rainham Marshes		Potential effects on ecological sites		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
				• remove materials that have a potential to produce dust from site as soon as possible, unless being reused onsite. If they are being reused onsite cover as described below; • cover, seed or fence stockpiles to prevent wind whipping; and • a change of shoes and clothes by staff and visitors before going offsite is promoted. <u>Operating Vehicle/Machinery and Sustainable Travel:</u> *Embedded Mitigation:* • ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London Non Road Mobile Machinery (NRMM) standards, where applicable; • ensure all vehicles switch off engines when stationary – no idling vehicles; and • minimise the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. *Additional Mitigation:* • impose and signpost a maximum speed limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of LBB, where appropriate); and • plan construction site layout to locate NRMM as far from potential exposure of members of the public as practicable. <u>Operations:</u> *Embedded Mitigation:* • only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems; • ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate; • use enclosed chutes and conveyors and covered skips; and minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.			

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
				Additional Mitigation: • ensure equipment is readily available onsite to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods; and • inform the Environment Agency, London Fire and Emergency Planning Authority (LFEPA) or the UK Health Security Agency (UKHSA) if harmful substances are spilled. <u>Waste Management:</u> *Embedded Mitigation* • no bonfires and burning of waste materials onsite. *Additional Mitigation* • any excess material will be reused or recycled on or offsite in accordance with appropriate legislation; and • the appointed Contractor(s) will develop and implement a full SWMP(s) in substantial accordance with the **Outline SWMP (Document Reference 7.10)**. <u>Measures Specific to Demolition</u> *Additional Mitigation* • soft strip inside buildings before demolition (sheet piling walls and windows in the rest of the building where possible to provide a screen against dust); • ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground; • avoid explosive blasting, using appropriate manual or mechanical alternatives; and • bag and remove any biological debris or damp down such material before demolition. <u>Measures Specific to Earthworks</u> *Additional Mitigation* • re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;			

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
				• use hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable. Only remove the cover in small areas during work and not all at once; and • during dry or windy weather, material stockpiles and exposed surfaces will be dampened down using a water spray to minimise the potential for wind pick-up. <u>Measures Specific to Construction Activities</u> *Additional Mitigation* • avoid scabbling (roughening of concrete surfaces) if possible; • ensure aggregates are stored in bunded areas and, where practicable, are not allowed to dry out; • ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems; and • for smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust. <u>Measures Specific to Trackout</u> *Additional Mitigation* • ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport by reusing existing access points where possible/practicable; • use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the Site; • install hard surfaces haul routes which are regularly damped down and cleaned; • inspect onsite haul routes for integrity and instigate necessary repairs as soon as practicable. Record all haul route inspections and subsequent actions in a logbook; • implement a wheel-washing system with rumble grids to dislodge accumulated dust and mud prior to leaving the Site. Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit; • access gates to be located at least 10m from sensitive receptors where practicable; • avoid dry sweeping of large areas; and • ensure vehicles covering dusty materials are covered before leaving the Site.			
1.10	Anywhere with exposure	Full Proposed Scheme AQ	Potential effects on	*Embedded Mitigation*	**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
		Impact (Road + Marine, including Exhaust Stacks for Riverside 1 and Riverside 1)	human health	See ID 1.1 – 1.9. *Additional Mitigation* None required.			
1.11	All ecological sites, primarily Crossness LNR and Inner Thames Marshes/Rainham Marshes		Potential effects on ecological sites		**Negligible (Not Significant)**		
Operation Phase							
1.12	Any location of relevant exposure	Changes To Emissions of Pollutants at Riverside Campus as a result of the Carbon Capture Facility	Potential effects on human health (including within local authorities and air quality focus areas)	*Embedded Mitigation* For the Carbon Capture Facility measures include, these will be subject to detailed air quality dispersion modelling for the Environmental Permit once the technology provider has been selected: a) minimum offset distance between the Absorber Column(s) and Stack(s) and Riverside 1 and Riverside 2 housing units of 100m; b) flue gas from the two new Absorber Column(s) and Stack(s) to be continuously monitored via a Continuous Emissions Monitoring System (CEMS) pursuant to the Environmental Permit; c) exhaust gases post carbon capture are a minimum of 80 degrees Celsius; and d) the LCO_2 transport vessels will meet IMO Tier III[2] requirements for NOx emissions. e) the Emission Limit Value for ammonia in flue gases from the Carbon Capture Facility will be 10mg/Nm^3 (at 11% O_2, dry). Pollutant concentration limits for pollutants introduced by the carbon capture process will be set in the Environmental Permit for the Carbon Capture Facility. *Additional Mitigation* Based on the results of the statistical analysis for impacts associated with the new backup power generator it is recommended that the generator is positioned as far away from sensitive receptors as is practicable. In practice this means locating the generator away from the Site Boundary and/or onsite public right of ways as is practicable. Although there are no modelled impacts on human health, this will limit any impacts to the general population as best as possible. However, some of the Crossness LNR will be impacted and it is, therefore, recommended that the generator is situated as far as possible from sensitive habitats to further reduce the risk of impacts.	**Slight Adverse (Not Significant)**	The Proposed Scheme is subject to continuous stack emissions monitoring as a requirement of the Environmental Permit.	Embedded mitigation is secured through Requirements of the **Draft DCO (Document Reference 3.1)**. Additional mitigation is secured via the **Design Principles and Design Code (Document Reference 5.7)** which is secured through the DCO. The Applicant to apply for an Environment Permit from the Environment Agency to secure the other measures.

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
				The technology used in the Carbon Capture Facility will be designed to minimise, as far as is reasonably practicable, the loss of amines into the plume emitted by the Carbon Capture Facility. An Environmental Permit is required for the operation of the Proposed Scheme and will consider detailed operation processes.			
1.13	Inner Thames Marshes SSSI, Rainham Marshes LNR, Lesnes Abbey Woods LNR and Crossness LNR		Potential effects on ecological receptors	See **Table 3: Terrestrial Biodiversity – Summary of Mitigation, Monitoring or Other Measures** for measures related to ecological receptors.			
1.14	All designated sites except those above		Potential effects on ecological receptors	*Embedded Mitigation* See ID 1.12. *Additional Mitigation* See ID 1.12.	**Negligible (Not Significant)**	The Proposed Scheme is subject to continuous Stack(s) emissions monitoring as a requirement of the Environmental Permit.	Embedded mitigation secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The Applicant to apply for an Environment Permit from the Environment Agency.
1.15	Any location of relevant human exposure	Emissions of NO_2, PM_{10} and $PM_{2.5}$ From New Backup power Generators (Ancillary Infrastructure)	Potential effects on human receptors		**Negligible (Not Significant)**		
1.16	Crossness LNR		Potential effects on ecological sites		**Negligible (Not Significant)**		
1.17	Anyway, with exposure, but primarily England Coast Path (FP3/NCN1)	Marine vessel emissions of NO_2, SO_2, PM_{10} and $PM_{2.5}$	Potential effects on human receptors		**Negligible (Not Significant)**		
1.18	All ecological sites, primarily Crossness LNR and Inner Thames Marshes/Rainham Marshes		Potential effects on ecological sites		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact		Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation/ Monitoring is Secured
1.19	Anywhere with long term exposure	Human Health Risk Assessment	Potential effects on human health		**Negligible (Not Significant)**		
1.20	Any location of relevant exposure	Full Proposed Scheme AQ Impact	Potential effects on human health (including within local authorities and air quality focus areas)		**Slight Adverse (Not Significant)**		
1.21	Inner Thames Marshes SSSI, Rainham Marshes LNR, Lesnes Abbey Woods LNR and Crossness LNR		Potential effects on ecological sites	See **Table 3: Terrestrial Biodiversity – Summary of Mitigation, Monitoring or Other Measures** for measures related to ecological receptors.			
1.22	All designated sites except those above		Potential effects on ecological sites	None required.	**Negligible (Not Significant)**	None required	See ID 1.14 – 1.20
1.23	The Proposed Scheme complies with the philosophy of Air Quality Neutral, since there is no material change in emissions of nitrogen dioxide and particulate matter during its operation. The Proposed Scheme has been designed to minimise emissions to air and to minimise exposure to emissions and An Air Quality Positive Statement has been prepared to illustrate these impacts. Further detail is provided within **Appendix 5-4: Air Quality Positive Statement (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**.			None required.	**Not applicable**		Not required.

Table 2: Noise and Vibration - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
2.1	C1 - Clydesdale Way	Construction Noise (landside receptors)	*Embedded Mitigation* • the manifestation of BPM will be a series of noise and vibration control measures, examples of which are included below. The detail of the BPM measures applied would be set out in the full CoCP(s), to reduce potential effects to sensitive receptors. during construction, it is expected that standard working hours for the landside activities are Monday to Friday 07:00 to 19:00. On Saturdays, standard working hours will be 07:00 to 13:00. It is not expected that construction work will be undertaken on Sundays or Bank Holidays. The working hours do not apply to construction works where these are (a) are carried out within existing buildings or buildings constructed as part of the Proposed Scheme; (b) are carried out with the prior approval of the relevant planning authority; or (c) are associated with an emergency; • display the name and contact details for a nominated site contact for the public on the Site to deal with complaints and engaging with local residents; • selection of quiet and low noise/vibration equipment and methodologies, where practicable; • optimal location of acoustic screening to minimise adverse noise effects; • optimal location of equipment onsite to minimise noise/vibration disturbance; and • the provision of acoustic enclosures around static plant, where necessary. *Additional Mitigation*	**Moderate (Not Significant)** The impact of construction noise is moderate given the predicted noise levels at the receptor; however, given the duration will be limited the effect is not significant in line with the criteria set out in **Chapter 6: Noise and Vibration (Volume 1)** of the **Environmental Statement (Document Reference 6.1)**.	No monitoring of noise and vibration effects is considered to be proportionate or to be required.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the need for BPM measures to be followed. The full CoCP(s) is secured through a requirement of the **Draft DCO (Document Reference 3.1)**, which must be in substantial accordance with this outline.
2.2	C2 – North Road			**Minor (Not Significant)**		
2.3	C3 – Little Brights Road			**Minor (Not Significant)**		
2.4	C4 – Travellers' site located off Jenningtree Way			**Minor (Not Significant)**		
2.5	C5 – Travelodge London Belvedere hotel			**Moderate (Not Significant)** The impact of construction noise is moderate given the predicted noise levels at the receptor; however, given the duration will be limited the effect is not significant in line with the criteria set out in **Chapter 6: Noise and Vibration (Volume 1)** of the **Environmental Statement (Document Reference 6.1)**.		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			The duration of any construction works within 180m of the receptors are limited to no more than 10 days or nights in any 15 consecutive day or night period and no more than a total of 40 days in any six consecutive months.			
2.6	N/A	Construction Road Traffic Noise	*Embedded Mitigation* See ID 2.1. *Additional Mitigation* Not applicable.	**Negligible (Not Significant)**		
Operation Phase						
2.7	C1 - Clydesdale Way	Operational Noise (landside receptors)	*Embedded Mitigation* No embedded design, mitigation or enhancement measures are proposed for noise and vibration at this stage. *Additional Mitigation* The following mitigation measures have been reviewed, and each would provide the attenuation required to result in a reduction in noise levels: • locating the ASHP fans further away and behind the water heating facility, such that the building acts as a barrier to the noise from the fans; or • selecting quieter ASHP fans to achieve a cumulative rating level of not more than 5 dB above the background sound level at 1m from any nearby sensitive receptor; or • erecting an acoustic barrier around the ASHP fans to achieve a cumulative rating level of not more than 5 dB above the background sound level at 1m from any nearby sensitive receptor.	**Minor Adverse (Not Significant)**	No monitoring of noise and vibration effects is considered to be proportionate or to be required.	A Noise Mitigation Plan will be prepared and submitted prior to the operation of the Proposed Scheme to detail the final mitigation measures. This is secured through a Requirement of the **Draft DCO (Document Reference 3.1)**.
2.8	C5- Travelodge London Belvedere hotel			**Minor Adverse (Not Significant)**		

Table 3: Terrestrial Biodiversity - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
3.1	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, Coastal and floodplain grazing marsh HPI, Intertidal mudflats HPI, open mosaic habitat HPI, reedbed HPI, breeding birds, wintering birds.	Habitat loss and fragmentation	*Embedded Mitigation* Relevant design, mitigation and enhancement measures include: • adherence to relevant Environmental Permits, Best Practice Guidance and Regulations, British Standards, and monitoring for the protection of ecological features; • implementation of pollution prevention and control measures in accordance with principles set out in the construction phase elements of the **Outline CoCP (Document Reference 7.4)**; and • lighting levels would be kept to a minimum necessary for security and safety and designed (where practicable) to avoid light spillage beyond the Site. This will include maintenance of dark corridors around designated sites and key habitats. Lighting will be directed onto works areas with hoods used to prevent light spill. This would be in accordance with principles set out in the **Outline CoCP (Document Reference 7.4)**. Where impacts on habitats and species cannot be avoided or mitigated through adherence to standard best practice measures, and this would otherwise result in a potential significant adverse effect, compensation measures will be implemented. This follows the Mitigation Hierarchy approach. These are described in **Section 7.9**, with details of habitat creation and enhancement in **Outline LaBARDS (Document Reference 7.9)**. A full LaBARDS will be developed in substantial accordance with the outline strategy. *Additional Mitigation* The following measures are set out in the **Outline CoCP (Document Reference 7.4)** and **Outline LaBARDS (Document Reference 7.9)** (where relevant): • enhancement of floodplain grazing marsh, other neutral grassland and woodland within the Mitigation and	**Negligible (Not Significant)**	An Ecological Clerks of Works monitoring and other measures such as including monitoring light spill onto adjacent habitats, quality of surface water run-off and effectiveness of implementation of dust suppression measure are described in the **Outline CoCP (Document Reference 7.4).** The inspection of habitat creation works to ensure groundwork and plant growth are on path to generate the expected vegetation community and contribute biodiversity value as intended. The inspection of open water habitat creation to ensure features created hold water and suitable as replacement habitat and to support protected species (e.g., water voles). The survey of habitats subject to enhancement	The **Outline CoCP (Document Reference 7.4)** sets out the measures in respect of pollution prevention, lighting, timing and reptiles, and pre-construction and during construction monitoring requirements. The full CoCP(s) is to be developed to be in substantial accordance with this outline, as secured through a requirement of the **Draft DCO (Document Reference 3.1)**. Works in relation to water voles would be carried out under a protected species mitigation licence for water vole obtained from Natural England, comprising specific mitigation and monitoring measures for this species, laid out in a method statement. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and outlines the habitat creation and ongoing monitoring and management proposals. The development of a full LaBARDS(s), to be in substantial accordance with that outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Enhancement Area to replace important habitats of Crossness LNR/Erith Marshes MSINC and support an overall net gain for biodiversity. • enhancement of mudflat habitat within the River Thames to replace losses due to installation of new pilings associated with the Proposed Jetty[a]; • creation of new habitats within the Mitigation and Enhancement Area and Carbon Capture Facility comprising floodplain grazing marsh, other neutral grassland, reedbed, woodland and ditches to replace important habitats of Crossness LNR, Erith Marshes MSINC and Belvedere Dykes SINC and support an overall net gain for biodiversity. This would include buffer planting to provide physical and visual screening between the Carbon Capture Facility and Mitigation and Enhancement Area/Crossness LNR; • enhancement of other neutral grassland at the BNG Opportunity Area to support a net gain for biodiversity; • creation of new open mosaic habitat and reedbed habitat at the BNG Opportunity Area to support a net gain for biodiversity; • habitat creation would replace lost supporting habitat for other protected and notable species, foraging and commuting habitat for bats, nesting habitat for breeding birds, foraging habitat for wintering birds, habitat for reptiles and invertebrates. Open water and reedbed creation will be a key feature to provide replacement habitat for water voles due to loss of such habitats within the Site; • Creation of features to offer replacement breeding, sheltering and hibernating opportunities for animal species within the Mitigation and Enhancement Area, for example, reptile hibernacula, bat and bird boxes; • Construction of the Proposed Jetty presents an enhancement opportunity for birds using the River Thames, as it would provide a new feature for resting and roosting. This would support existing resting and		(deciduous woodland, floodplain grazing marsh) to demonstrate increase in biodiversity value and allow interventions as necessary. Monitoring of water vole population to determine the success of habitat creation and translocation for this species pursuant to a licence. This will include survey for American mink. Monitoring of aquatic invertebrate species within waterbodies and watercourses to determine value of newly created ponds. Monitoring of fish species within watercourses to determine the success of habitat improvements. Monitoring of water quality parameters within the network of watercourses within the Crossness LNR.	Proposals for the Jetty will be presented pursuant to separate DCO requirement.

[a] this assumes retention of the Belvedere Power Station jetty (disused) (with modifications), the scenario chosen as the precautionary approach with regards BNG. However, removal of the Belvedere Power Station jetty would yield mudflat habitat creation where its piling and supports were removed.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			roosting space on the existing Belvedere Power Station Jetty (disused) (with modifications), if retained; • Improvement works to ditches, such as silt removal, litter picking and management to improve the habitat quality; and • Measures to reduce emissions from idling vehicles (as outlined in **Chapter 5: Air Quality (Volume 1)** of the **Environmental Statement (Document Reference 6.1)**), such as switching engines off when stationary to reduce air-borne pollutants, as provided for in the **Outline CoCP (Document Reference 7.4)**. Species specific interventions will also be used to mitigate effects of the Proposed Scheme, and will follow the approaches below may be grouped into the following general approaches, as part of the full CoCP(s): • timing of works to avoid sensitive periods for particular species, such as avoidance of the bird nesting season for habitat clearance, and the migration periods for sensitive freshwater fish species; • water voles are present within the Site and will be subject to a programme of translocation to move animals present within works areas to newly created compensatory habitat within the Mitigation and Enhancement Area (shown on **Figure 1-1: Site Boundary Plan (Volume 2)** of the **Environmental Statement (Document Reference 6.2)**). This work would be carried out under a protected species mitigation licence for water vole obtained from Natural England, comprising specific mitigation and monitoring measures for this species, laid out in a method statement. The Applicant is currently seeking to obtain a Letter of No Impediment in respect of this; and • reptiles would be moved from works area through hand searching in combination with vegetation clearance. Captured reptiles would be released into a safe area within Crossness LNR away from active works. As a potential enhancement, if the Belvedere Power Station Jetty is retained then improvements could be made to improve its use as an ornithological feature.		Monitoring requirements are summarised in the **Outline LaBARDS (Document Reference 7.9)**.	

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
3.2	Modified grassland, other neutral grassland, mixed scrub, ditches/standing water, notable plants and invasive species, terrestrial invertebrates		*Embedded Mitigation* See ID 3.1. *Additional Mitigation* See ID 3.1.	**Negligible (Not Significant)**		
3.3	Water vole			**Negligible (Not Significant)**		
3.4	Bats, reptiles			**Negligible (Not Significant)**		
3.5	Aquatic macroinvertebrates, freshwater fish and macrophytes.			**Negligible (Not Significant)**		
3.6	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, breeding birds, wintering birds.	Noise and vibration		**Minor Adverse (Not Significant)**		
3.7	Terrestrial invertebrates, water vole			**Negligible (Not Significant)**		
3.8	Bats, reptiles			**Negligible (Not Significant)**		
3.9	Freshwater fish (including European eel).			**Negligible (Not Significant)**		
3.10	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, deciduous woodland HPI, coastal and floodplain grazing marsh HPI, intertidal mudflats HPI, coastal saltmarsh HPI, open mosaic habitat HPI, reedbed HPI, river habitat (River Thames), modified grassland, other neutral	Dust		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	grassland, mixed scrub, ditches/standing water, bats, breeding birds, notable plants and invasive species, reptiles, terrestrial invertebrates, water vole, wintering birds, freshwater fish (including European eel), aquatic macroinvertebrates, macrophytes.					
3.11	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, coastal and floodplain grazing marsh HPI, intertidal mudflats HPI, reedbed HPI, coastal saltmarsh HPI, river habitat (River Thames), ditches/standing water, bats, breeding birds, reptiles, terrestrial invertebrates, water vole, wintering birds, aquatic macroinvertebrates, freshwater fish (including European eel), macrophytes.	Surface water run-off		**Negligible (Not Significant)**		
3.12	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, bats, breeding birds, reptiles, terrestrial invertebrates, water vole, wintering birds, aquatic macroinvertebrates, macrophytes and freshwater fish.	Lighting		**Negligible (Not Significant)**		
3.13	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, deciduous	Changes in air quality		**Minor Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	woodland HPI, coastal and floodplain grazing marsh HPI, intertidal mudflats HPI, open mosaic habitat HPI, reedbed HPI, coastal saltmarsh HPI, river habitat (River Thames), notable plants and invasive species, freshwater fish (including European eel).					
3.14	Modified grassland, other neutral grassland, mixed scrub, ditches/standing water, aquatic macroinvertebrates.			**Negligible (Not Significant)**		
3.15	Macrophytes			**Negligible (Not Significant)**		
3.16	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, coastal and floodplain grazing marsh HPI, open mosaic habitat HPI, reedbed HPI, modified grassland, other neutral grassland, mixed scrub, ditches/standing water, bats, breeding birds, notable plants and invasive species, reptiles, terrestrial invertebrates, water vole, wintering birds, aquatic macroinvertebrates, freshwater fish (including European eel), macrophytes.	Shading		**Negligible (Not Significant)**		
Operation Phase						
3.17	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, Bats, breeding birds, reptiles,	Noise and vibration	*Embedded Mitigation* Measures (following the Mitigation Hierarchy) include the following:	**Negligible (Not Significant)**	See ID 3.1.	An **Outline Drainage Strategy (Document Reference 7.2)**; accompanies this DCO application and outlines the proposed drainage strategy. The

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	terrestrial invertebrates, water vole, wintering birds, freshwater fish (including European eel).		a) adherence to relevant Environmental Permits, Best Practice Guidance and Regulations, British Standards, and monitoring for the protection of ecological features; b) managing operation, including maintenance activities, in order to avoid or minimise indirect effects including noise and vibration, pursuant to an Operational Environmental Management Plan (EMP) (which will be prepared prior to the Proposed Scheme commencing operation). Measures would include timing of actions including maintenance activities to avoid sensitive periods for certain species, such as dusk/dawn for when bats are sensitive, or key breeding periods such as May/June for birds and water voles; c) implementation of the operational phase elements of the principles of the **Outline Drainage Strategy (Document Reference 7.2)**, to avoid and control pollution events; d) lighting levels would be kept to a minimum necessary for security and safety and designed (where practicable) to avoid light spillage beyond the Site. This would be set out in the **Outline Lighting Strategy (Document Reference 7.3)**. This would include control of operation phase lighting to focus it on the Carbon Capture Facility, the Proposed Jetty and Ancillary Infrastructure and to maintain dark corridors around designated sites and key habitats; and e) implementation of standards for Site cleanliness and controls to avoid build-up of waste (including food waste, unused materials, packaging etc) and degradation of habitats retained/created within the Proposed Scheme. To include a focus on waste attractive to rats (which can displace water voles). *Additional Mitigation* Additional mitigation measures to include: • management of habitats – continuing and maintaining biodiversity gains for habitats within the within the Mitigation and Enhancement Area and operational Carbon Capture Facility through a programme of woodland management, and increasing the value of floodplain grazing marsh/other neutral grassland			development of a full Drainage Strategy, in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline Lighting Strategy (Document Reference 7.3)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt. The development of the full Lighting Strategy, in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and outlines the ongoing management and monitoring of the performance of the Proposed Scheme's ecological works. The development of the full LaBARDS(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The Operational EMP will be developed, pursuant to DCO requirement.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			habitats by a mixture of changes in their management over time and seeding/planting; • management of habitat enhancements within the BNG Opportunity Area, these measures are set out in the **Outline LaBARDS (Document Reference 7.9)**; • measures set out within **Table 1** to manage air quality effects; • management of ditches and watercourses to improve macrophyte species diversity, with consequent improvement in diversity of macroinvertebrates and fish species, and availability of food plants for water voles. This would buffer potential vegetation changes resulting from air quality changes, pursuant to the **Outline LaBARDS (Document reference 7.9)**; • improvement of water flow through ditches, by controlling surface water discharge; and • control of American mink (an invasive species and significant predator of water vole) through survey and trapping to ensure water vole populations are not predated by this species.			
3.18	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, bats, breeding birds, water vole, wintering birds.	Maintenance activities	*Embedded Mitigation* See ID 3.17. *Additional Mitigation* See ID 3.17.	**Negligible (Not Significant)**		
3.19	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, coastal and floodplain grazing marsh HPI, intertidal mudflats HPI, reedbed HPI, coastal saltmarsh HPI, river habitat (River Thames), ditches/standing water, bats, breeding birds, reptiles, terrestrial invertebrates, water vole, wintering birds, aquatic	Surface water run-off		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	macroinvertebrates, freshwater fish (including European eel).					
3.20	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, bats, breeding birds, reptiles, terrestrial invertebrates, water vole, wintering birds, aquatic macroinvertebrates, freshwater fish (including European eel), macrophytes.	Lighting		**Negligible (Not Significant)**		
3.21	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, River Thames and Tidal Tributaries MSINC, 18 further SINCs outside of the Site, deciduous woodland HPI, coastal and floodplain grazing marsh HPI, intertidal mudflats HPI, reedbed HPI, coastal saltmarsh HPI, river habitat (River Thames), notable plants and invasive species.	Changes in air quality		**Potentially up to Moderate Adverse (Significant)**		
3.22	Inner Thames Marshes SSSI, Ingrebourne Marshes SSSI, Rainham Marshes LNR, modified grassland, other neutral grassland, mixed scrub, ditches/standing water, macrophytes.			**Negligible (Not Significant)**		
3.23	Freshwater fish (including European eel)			**Negligible (Not Significant)**		
3.24	Aquatic macroinvertebrates.			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
3.25	Reedbed HPI, water voles	Shading		**Negligible (Not Significant)**		
3.26	Aquatic macroinvertebrates			**Negligible (Not Significant)**		
3.27	Crossness LNR, Erith Marshes MSINC, Belvedere Dykes SINC, Coastal and floodplain grazing marsh HPI, modified grassland, other neutral grassland, mixed scrub, ditches/standing water, bats, breeding birds, notable plants and invasive species, reptiles, terrestrial invertebrates, water vole, wintering birds, freshwater fish and macrophytes.			**Negligible (Not Significant)**		

Table 4: Marine Biodiversity - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
4.1	Medway Estuary MCZ	Loss or disturbance of habitats[b]	Mitigation measures to include: *Embedded Mitigation* • a minimised construction footprint has been identified to reduce/avoid potential habitat loss wherever practicable. This includes the Proposed Jetty and capital dredge footprint; • the Proposed Scheme will adhere to relevant Environmental Permits, best practice guidance and regulations, British Standards, and monitoring for the protection of marine biodiversity features and to ensure water quality impacts are minimised; • works below the mean high-water springs (MHWS), such as construction of the Proposed Jetty and dredging activities, will be subject to a DML; • robust measures and equipment for dealing with any unexpected pollution events are outlined within the **Outline CoCP (Document Reference 7.4)**; • all construction materials used will be safe for use in the marine environment. • the **Outline CoCP (Document Reference 7.4)** states that where practicable, lighting should be positioned carefully, and measures implemented to minimise light spillage into the marine environment. This includes using lights with high directionality and employing controls to reduce light levels when not required (unless for safety and navigation) and determining suitable light intensity (minimum requirements for a given task and selection of those with low intensity) and tailorable spectrum. Screening may also be required in the intertidal areas; • the full CoCP(s) will provide that any construction piling that may cause direct disturbance to the marine environment should not commence unless an Ecological Clerk of Works (ECoW) is present. This is to ensure sensitive species, notably marine mammals, are absent from the area. The ECoW will follow measures developed by JNCC and set out in the 'Statutory nature conservation agency protocol for minimising the risk of	**Negligible (Not Significant)**	Monitoring to determine the potential presence of INNS during construction would aid the implementation of the Biosecurity Management Plan secured as part of the Operational EMP – see below. As the Study Area is a highly depositional area, there is potential for contaminated sediments to be subsequently deposited in dredged berths. This may determine the and appropriate disposal route. Regular sediment contaminant surveys may be required in support of ongoing maintenance dredging operations. Water quality monitoring may also be required during dredging operations to ensure no exceedance of maximum allowable limits as defined by the Environment Agency. This is likely to be decided following completion of contaminant analysis of the sediment within the	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of a full CoCP(s), to be in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)** and will include a Biosecurity Management Plan as an appendix. The Applicant is to apply for relevant construction phase Environment Permits from the Environment Agency. Dredging and Piling effects on sediment and water quality will be managed through approvals given under the Deemed Marine Licence contained within the **Draft DCO (Document Reference 3.1)**.

[b] This includes the potential removal or retention of the Belvedere Power Station Jetty (disused).

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			injury to marine mammals from piling noise'[3]. The main measures are; – marine mammal observations will be carried out during piling works by an ECoW will be required to carry out marine mammal observations 30 minutes prior to any piling being undertaken to ensure that there are no marine mammals within 500m (the mitigation zone) of the proposed works; – a soft start to piling operations will be used to ensure an incremental increase in pile power over a period of no less than 20 minutes, until a full operational piling period is achieved. Should piling cease for a period longer than 10 minutes, the soft-start procedure may need to be repeated in line with the marine mammal observations; – if marine mammals are detected within the mitigation zone during the search, the soft start must be delayed until they have left the mitigation zone. There must be a minimum of a 20 minute delay from the time of the last detection within the mitigation zone and the commencement of the soft-start to allow for animals unavailable for detection (i.e. not re-surfacing in that time) to have moved outside of the mitigation zone). A full soft start may be undertaken after any delay due to the presence of marine mammals within the mitigation zone; – in situations where seals are congregating around a fixed platform within a survey area, it is best practice for the soft start to commence at a location at least 500m from the platform, where possible; and – if breaks of longer than 10 minutes are required, a full pre-search and soft start should be carried out before the construction works re-commence. • construction activities such as piling, and capital dredging should occur outside of migratory periods for sensitive fish species (April to September); • capital dredging will be undertaken using backhoe dredging as this will reduce the amount of sediment lost and resuspended during dredging activities; • sediment within the dredged areas (including to dredge depth of approximately 10.5m below chart datum) should be collected and analysed for sediment bound contaminants to determine the most appropriate method of disposal of dredged material in discussion with the MMO and Centre for Environment Fisheries		dredge pocket, down to total dredge depth.	

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			and Aquaculture Sciences (CEFAS), pursuant to the DML. Furthermore, it will inform subsequent additional mitigation if sediments are shown to be elevated in contaminant concentrations; • water quality monitoring will be required during dredging and acceptable levels of suspended sediment and contaminants pursuant to the DML; • to reduce the requirement for dredging within the intertidal zone, the full CoCP(s) will confirm that a sheet piled wall will be installed at bed level to prevent potential erosion of intertidal sediment and reduce the size of the dredge pocket required; • where practicable, low noise piling techniques (for example pile press in technology) or vibro-piling will be used to minimise the impact on fish and marine mammals; • construction vessel speeds will be moderated by following standard operating procedures. Where practicable, there will be an implementation of reduced vessel speeds (3kts) in proximity of piers to reduce the potential for vessel strike with marine mammals and fish and to reduce the risk of any potential damage to intertidal habitats from wave wash; • the Thames is subject to the control and management of ballast water as stipulated by the MMO, therefore release from ballast water is not a vector for the spread of INNS[4]. As part of the full CoCP(s) a Biosecurity Management Plan will be developed and implemented with standard biosecurity measures, in line with UK best practice guidance. This will include the effective cleaning of all marine equipment and infrastructure (if utilised in other Water Bodies), along with preventing the release of any subsequent waste arisings back into the marine environment. Relevant guidance such as the Check, Clean, Dry campaign led by the GB Non-native Species Secretariat will also be followed. Provision of local materials will be used where practicable, and materials should be appropriately treated to minimise the potential spread of INNS; • accidental fuel leaks from construction vessels will be managed; • all construction vessels will act in accordance with their own management/accident plans, as well as those of the Port of London Authority/Maritime Coastal Agency, thus limiting the potential for accidental fuel leaks; and • demolition of the existing Belvedere Power Station Jetty (disused) (if required) and excavation activities in the intertidal			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			zone should, where practicable, occur during low tide to minimise the dispersion of suspended sediment (where practicable). *Additional Mitigation* • sediment sampling at depth will be undertaken to inform detailed design. Information gathered through this sampling will inform subsequent additional mitigation if sediments are shown to be elevated in contaminant concentrations. Should contamination be identified which is considered to pose a risk to sensitive receptors then appropriate measures will be undertaken. Potential measures could include dredging for a reduced time period each day; use of a closed grab for dredging; dredging on a certain phase of the tide; and avoidance of very elevated levels at depth. A silt curtain will also be considered; however, it may be impractical in this location due to tidal flows); • potential measures to reduce impacts from contaminated sediment could include: – dredging for a reduced time period each day; – use of a closed grab for dredging; – dredging on a certain phase of the tide; and avoidance of very elevated levels at depth; and – a silt curtain will also be considered; however, it may be impractical in this location due to tidal flows.			
4.2	River Thames and Tidal Tributaries SINC		*Embedded Mitigation* See ID 4.1. *Additional Mitigation* Not applicable.	**Negligible (Not Significant)**		
4.3	Marine habitats and associated intertidal and subtidal communities			**Negligible (Not Significant)**		
4.4	Marine plants and Macroalgae			**Negligible (Not Significant)**		
4.5	Fish			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
4.6	Marine mammals			**Negligible (Not Significant)**		
4.7	Medway Estuary MCZ, River Thames and Tidal tributaries SINC, marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae, plankton, fish and marine mammals	Change in suspended sediment levels and subsequent sediment deposition		**Negligible (Not Significant)**		
4.8	Medway Estuary MCZ, River Thames and Tidal tributaries SINC,	Changes in water quality and release of contaminants		**Minor Adverse (Not Significant)**		
4.9	Marine habitats and associated intertidal and subtidal communities			**Minor Adverse (Not Significant)**		
4.10	Marine plants and macroalgae, plankton and plankton			**Negligible (Not Significant)**		
4.11	Fish			**Minor Adverse (Not Significant)**		
4.12	Marine mammals			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
4.13	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, fish, marine mammals	Noise and Vibration[b]		**Negligible (Not Significant)**		
4.14	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae, plankton, fish and marine mammals	Lighting[b]		**Negligible (Not Significant)**		
4.15	Marine Mammals	Vessel Strike[b]		**Negligible (Not Significant)**		
4.16	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae, fish and marine mammals	Increased wave wash		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
4.14	Medway Estuary MCZ	Spread of INNS[b]		**Negligible (Not Significant)**		
4.15	River Thames and Tidal Tributaries SINC			**Negligible (Not Significant)**		
4.16	Marine habitats and associated intertidal and subtidal communities			**Negligible (Not Significant)**		
4.17	Marine plants and macroalgae			**Negligible (Not Significant)**		
4.18	Fish			**Negligible (Not Significant)**		
Operation Phase						
4.19	Medway Estuary MCZ	Loss or disturbance of habitat	*Embedded Mitigation* a) the Proposed Scheme requires the operation of a wastewater treatment plant for water generated during operation. All wastewater will be treated appropriately before being discharged into the local foul sewer pursuant to trade effluent consent; b) as described in the **Outline Drainage Strategy (Document Reference 7.2)**, a new drainage system will be required which will drainage system will use the existing ditches within the Site as a point of connection, with attenuation tanks, filter drains and ponds utilised to control the discharge quality and rate to the ditches. This drainage strategy will remove the impact pathway from surface water drainage to marine biodiversity receptors; c) an **Outline Lighting Strategy (Document Reference 7.3)** has been developed which describes measures to reduce impacts upon the marine environment **Outline Lighting Strategy (Document Reference 7.3);**	**Negligible (Not Significant)**	See ID 4.1.	An **Outline Drainage Strategy (Document Reference 7.2)** accompanies this DCO application and outlines the proposed drainage strategy. The development of the full Drainage Strategy, to be in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline Lighting Strategy (Document Reference 7.3)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt. The development of the full Lighting Strategy, to be in substantial accordance with the outline, is secured
4.20	River Thames and Tidal Tributaries SINC			**Negligible (Not Significant)**		
4.21	Marine habitats and associated intertidal and subtidal communities			**Negligible (Not Significant)**		
4.22	Marine plants and macroalgae			**Negligible (Not Significant)**		
4.23	Fish			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
4.24	Marine mammals		d) operational vessel speeds will be moderated by following standard operating procedures. Where practicable, there should be reduced vessel speeds in proximity of piers to reduce the potential for vessel strike with marine mammals and fish and to reduce the risk of any potential damage to intertidal habitats from wave wash; e) all operational vessels will act in accordance with their own management/accident plans, as well as those of the Port of London Authority/Maritime Coastal Agency, thus limiting the potential for accidental fuel leaks; f) it is expected that vessels will follow standard procedures for managing INNS in their ballast water. A Biosecurity Management Plan will be developed as part of the Operational EMP prior to the Proposed Scheme becoming operational and implemented with standard biosecurity measures, in line with UK best practice guidance, as previously described; g) as a precautionary measure, maintenance dredging should avoid the main migratory periods for sensitive fish species (April to September); h) water quality monitoring will be required during dredging and acceptable levels of suspended sediment and contaminants; i) prior to maintenance dredging, the dredge pockets will be analysed for sediment-bound contaminants to determine the most appropriate dredge and disposal methods; j) the risk of effects arising from accidental fuel leaks from vessels during the operation phase will be managed through the **Outline EPRP (Document Reference 7.11)**, thus limiting the potential for accidental fuel leaks to as low as reasonably practicable (ALARP); and k) Fish refuge enhancements such as the inclusion of ropes on the piles of the Proposed Jetty will be included to increase habitat complexity and mimic natural conditions. *Additional Mitigation* None required.	**Negligible (Not Significant)**		through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline EPRP (Document Reference 7.11)** outlines the operational phase emergency preparedness and response planning that would be required to be adopted during the operation phase of the Proposed Scheme. The development of the full EPRP, to be in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The impacts of maintenance dredging will be controlled by the provisions of the Deemed Marine Licence contained within the **Draft DCO (Document Reference 3.1)**. A Biosecurity Management Plan will be developed as part of the Operational EMP, secured through a Requirement of the **Draft DCO (Document Reference 3.1)**.
4.27	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, marine	Changes in suspended sediment concentrations and	*Embedded Mitigation* See ID 4.19. *Additional Mitigation*	**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	habitats and associated intertidal and subtidal communities, marine plants and macroalgae, fish and marine mammals	subsequent sediment deposition	Not applicable.			
4.28	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC	Water quality and release of contaminants		**Negligible (Not Significant)**		
4.29	Marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae and plankton			**Negligible (Not Significant)**		
4.30	Fish			**Negligible (Not Significant)**		
4.31	Marine mammals			**Negligible (Not Significant)**		
4.32	Medway Estuary MCZ, River Thames and Tidal tributaries SINC, Fish, marine mammals	Noise and vibration		**Negligible (Not Significant)**		
4.33	Medway Estuary MCZ, River Thames and its	Lighting		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	Tidal Tributaries SINC, marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae, plankton, fish and marine mammals					
4.34	Marine mammals	Vessel strikes		**Negligible (Not Significant)**		
4.35	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, marine habitats and associated intertidal and subtidal communities, marine plants and macroalgae, fish and marine mammals	Increased wave wash		**Negligible (Not Significant)**		
4.36	Medway Estuary MCZ, River Thames and its Tidal Tributaries SINC, marine habitats and associated intertidal and subtidal communities,	Spread of INNS		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	marine plants and macroalgae and fish					

Table 5: Historic Environment – Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
5.1	Belvedere Power Station Jetty (disused) (A1g), if demolished as part of the Proposed Scheme	Demolition of non-designated above ground heritage assets within the Site during the construction phase.	*Embedded Mitigation* None required. *Additional Mitigation* Should the Belvedere Power Station Jetty (disused) be demolished, a Historic England Level 2 Historic Building Recording will be, undertaken prior to demolition. Level 2 recording comprises a descriptive record where the structure will be seen, described, and photographed. It will include a drawn record, photography and a written record. This will ensure that an accurate record of the Belvedere Power Station Jetty (disused) is archived with the Greater London Historic Environment Record and Archaeology Data Service for future research and understanding of heritage significance (value). The work will be carried out in accordance with Historic England's 2016 Guidance note 'Understanding Historic Buildings: a guide to good recording practice'[5].	**Minor Adverse (Not Significant)**	No monitoring of Historic Environment EIA effects is considered to be proportionate or to be required. Note: this refers to monitoring of EIA effects and is separate from any archaeological mitigation (i.e. archaeological monitoring/watching brief) which may be required.	All archaeological requirements in the form of additional surveys, where required, and final mitigation will be secured via a requirement in the **Draft DCO (Document Reference 3.1)**.
5.2	Palaeoenvironmental Remains	Potential physical effects on unknown buried heritage assets within the Site (archaeological remains), including potential submerged remains within the Thames foreshore (marine).	*Embedded Mitigation* See ID 5.1. *Additional Mitigation* Within the terrestrial part of the Site, adverse effects will be removed or offset through a programme of archaeological mitigation (to be outlined in an Archaeological Mitigation Strategy) post-DCO determination, to be approved by LBB in consultation with GLAAS. The scope and methodology for each phase of fieldwork presented below will be presented in a specific Written Scheme of Investigation (WSI). Each WSI would need to be prepared and approved by LBB in consultation with GLAAS prior to construction commencing. The first stage would be an updated Geoarchaeological Deposit Model (from Riverside 2) that would be extended from an existing model for the northern part of the Site across the remainder of the Site (including the marine and intertidal areas within the Site). This would build on the existing information on buried sediments to map the subsurface topography in those parts of the Site not currently	**Minor Adverse (Not Significant)**		All archaeological requirements in the form of additional surveys, where required, and final mitigation will be secured via a requirement in the **Draft DCO (Document Reference 3.1)**.
5.3	Potential Prehistoric Remains			**Minor Adverse (Not Significant)**		
5.4	Potential Roman Remains			**Minor Adverse (Not Significant)**		
5.5	Potential Medieval Remains			**Minor Adverse (Not Significant)**		
5.6	Unrecorded Post-medieval and Modern Remains			**Minor Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			covered, providing an insight into the prehistoric terrain beneath any superficial deposits of made ground and alluvium along with information on hydrology, vegetation and past landscape. The model would be used to inform further evaluation, should this be required, along with any additional mitigation measures. This could comprise avoidance in the unlikely event that nationally significant remains are identified, where this is warranted and feasible (considering consent will have been granted). It could also include targeted archaeological excavation and recording in advance of construction, where significant remains are present, and/or an archaeological watching brief during preliminary groundworks, to form preservation by record. The scope and methodology for any evaluation and subsequent mitigation would need to be outlined in specific archaeological WSI, in agreement with the relevant stakeholders. The presence, nature, date, extent and heritage significance (value) of any archaeological wrecks or other submerged features within the River Thames foreshore/channel will be clarified by further survey. The survey method agreed with LBB, in consultation with GLAAS will take the form of aerial foreshore survey and/or high-resolution geophysical data for archaeological analysis, comprising: • foreshore walkover at very low tide to identify archaeological features and/or an Unmanned Aerial Vehicle (UAV) survey of the foreshore; • magnetometry data; • multi beam echo sounder (MBES); and • side scan sonar (SSS). The results of the survey analysis will enable an appropriate mitigation strategy to be prepared for any significant archaeological remains that could be affected. Although rare, in the unlikely event that archaeological remains of very high (National) heritage significance (value) are identified, there may be a requirement, where practicable in the consented design, for their preservation in-situ. The scope and methodology for any evaluation and subsequent mitigation would need to be outlined in specific archaeological WSI,			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			in agreement with the relevant stakeholders. This work and any additional mitigation measures may need to be completed prior to construction commencement. Any additional mitigation during the construction phase itself, rather than pre-construction, would be included in the full CoCP(s). Mitigation could take the form of targeted excavation (preservation by record) and for remains of known low heritage significance (value), an archaeological watching brief may be required (for instance during the capital dredge). This would ensure that archaeological remains were not removed without record. As part of the Archaeological Mitigation Strategy, a programme of community engagement may also be required in order to disseminate the results of the investigations. This would depend on the results of the initial surveys and ongoing consultation with GLAAS.			
Operation Phase						
5.7	Belvedere Power Station Jetty (disused) (A1g), if retained as part of the Proposed Scheme	Potential permanent effects on non-designated above ground heritage assets located within the Site through changes to setting.	*Embedded Mitigation* None required. *Additional Mitigation* None required.	**Minor Adverse (Not Significant)**	See ID 5.1.	Not applicable.
5.8	Crossness Pumping Station (A2-A4 and A6)	Potential permanent effects on designated above ground heritage assets located beyond the Site Boundary and within the Study Area through		**Minor Adverse (Not Significant)**		
5.9	No. 4 Jetty and Approach (A5)			**Minor Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		changes to setting.				
5.10	Paleoenvironmental Remains	Potential indirect effects on unknown buried heritage assets within the Site (archaeological remains), including potential submerged remains within the Thames foreshore (marine).	*Embedded Mitigation* None required. *Additional Mitigation* Production and publication of an updated Geoarchaeological Deposit Model, ideally following Site-wide geotechnical investigations. Further survey of the capital dredge area, followed by mitigation if required.	**Minor Adverse (Not Significant)**		Any need for further investigation will be secured via a requirement in the **Draft DCO (Document Reference 3.1)**.
5.11	Potential Submerged Remains		*Embedded Mitigation* None required. *Additional Mitigation* Further survey of the capital dredged channel, followed by archaeological mitigation if required, i.e. targeted excavation/recording, watching brief or preservation in-situ.	**Uncertain**		

Table 6: Townscape and Visual - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Potential Effects on Townscape Character						
Construction Effects						
6.1	Site Character	Change of character and vegetation cover within the Site Boundary	*Embedded Mitigation* The following mitigation and standard construction and operational management practices would be applied during the construction period, via the **Outline CoCP: (Document Reference 7.4)**: • Areas would be cleared for construction as close as practicable to works commencing and top soiling, reseeding and planting would be undertaken as soon as practicable after sections of work are complete. • Land/vegetation clearance and occupation would be limited to the minimum area necessary for the works. The applicant will ensure that when we are undertaking an oversailing of land with trees, the land will be protected, and trees will not be removed under any circumstances. • Temporary protection of vegetation, and other vulnerable features to be retained, would be undertaken in accordance with prevailing best practice. • Temporary storage of soils and other material considered of value for retention would be undertaken in accordance with prevailing best practice. Where practical, stockpiles would be sited to screen the construction works from sensitive receptors such as people using the PRoW network. • The following measures are to be implemented ahead of construction to mitigate any adverse impacts on walkers and cyclists as a result of the permanent diversion (FP2): – The provision of appropriate and quality diversions which are established prior to construction and clear directions/signage for any alternative routes and appropriate alternative diversions would be clearly publicised by the Contractor(s) to maintain public access. – Public notices would be issued in advance so to inform local residents and businesses of dates and durations of road and rights of way closures.	**Moderate-Large Adverse (Significant)**	The performance of embedded landscape mitigation measures and enhancement (particularly biodiversity net gain/habitat creation) is required to be monitored pursuant to the **Outline LaBARDS (Document Reference 7.9)** as part of the detailed design of the Proposed Scheme.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), to be in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
6.2	Townscape Character	Change in local townscape character (within 2km of the Site Boundary)		**Slight-Moderate adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			The Contractor(s) would ensure provision and maintenance of suitable and sufficient signs and barriers indicating temporary and permanent closures to public accesses and rights of way. • Wherever practicable the England Coast Path (FP3/NCN1) and FP4 will remain open. During specific construction activities for the Proposed Jetty limited closures of the England Coast Path (FP3/NCN1) and FP4 may be required, the Contractor(s) will manage closures in the following priority order: – using a banksman to provide safe escorted access across the construction area, keeping waiting times to less than: 10 minutes during peak times; and 30 minutes during off-peak times; – night-time closures, between 23:00 and 05:00 (non-peak times: 23:00 - 05:00 and peak times 07:00 - 19:00) when the England Coast Path (FP3/NCN1) is infrequently used; and – in occasional situations, where the above options are not practicable, a signed diversion route will be provided. The diversion route will be of a hard surface and will be suitable for all users. • Footpath 1 (FP1) and Footpath 242 (FP242) will remain open throughout the construction phase. • Construction area(s) would be kept tidy (e.g. free of litter and debris). • The roads providing access to the construction site will be kept free of excessive dust and mud as far as is reasonably practicable. • Lighting levels would be kept to a minimum necessary for security and safety. Directional luminaries used to limit unwanted light spill. • Construction areas will be laid out to minimise adverse impacts arising from temporary structures, construction activities and lighting. • Hoardings of appropriate appearance erected around the area of construction works to create a visual barrier to construction activities. *Additional Mitigation* Not applicable.			
Potential Effects on Visual Amenity (including locally designated views)						

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
6.3	Accessible Open Spaces	Change in character and visual amenity from Accessible Open Land"	*Embedded Mitigation* See ID 6.1. *Additional Mitigation* None required.	**Moderate Adverse (Significant)**	See ID 6.1.	See ID 6.1.
6.4	Study Area open spaces	Change in character and visual amenity from Study Area open spaces		**Slight Adverse (Not Significant)**		
6.5	PRoW	Change in visual amenity for users of PRoW within and in the vicinity of the Site Boundary (FP1/FP2/FP4)		**Moderate Adverse (Significant)**		
6.6		Change in visual amenity for users of the London Loop Section 24		**Slight Adverse (Not Significant)**		
6.7		Change in visual amenity from the local PRoW network		**Slight-Moderate Adverse (Not Significant)**		
6.8	Road Network	Change in visual amenity for users of Norman Road		**Slight-Moderate Adverse (Not Significant)**		
6.9		Change in visual amenity for users of Eastern Way		**Slight Adverse (Not Significant)**		
6.10		Change in visual amenity for users of Junction between Eastern		**Slight Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		Way/A2016/Yarnton Way				
6.11	Residential	Change in visual amenity from Belvedere residential area		**Slight-Moderate Adverse (Not Significant)**		
6.12		Change in visual amenity from Thamesmead residential area		**Slight Adverse (Not Significant)**		
Operation Phase						
Potential Effects on Townscape Character						
6.13	Site Character	Change in Site character and vegetation cover	*Embedded Mitigation* An **Outline LaBARDS (Document Reference 7.9)** and a **Design Principles and Design Code (Document Reference 5.7)** have been submitted with the application which includes the following measures that are relevant to Townscape and Visual: <u>Design Principles and Design Code</u> • improve the local public footpath connections to deliver a recreation route linking Thamesmead to the Crossness LNR including local enhancements for wayfinding and information; • provide a visually attractive environment that secures a sense of belonging and personal security that is of consistent quality in terms of open space, natural habitat access, landscape design and architectural quality; • provide planted boundaries appropriate to local character around the operation site to support the natural character of the Crossness LNR and an organised interface with Norman Road; • control the visual appearance of the operational area in views from adjoining areas to deliver a coherent appearance; • organise built form and material selection to deliver a visually coherent design and to reduce impact.	**Moderate-large Adverse (significant) (Year 1)** **Moderate Adverse (significant) (Year 15)**	See ID 6.1.	An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and sets out the habitat creation measures. The development of the full LaBARDS(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline Lighting Strategy (Document Reference 7.3)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt. The development of the full Lighting Strategy, to be in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
6.14	Townscape Character	Change in local townscape character (within 2km of the Site Boundary)		**Slight-Moderate Adverse (not significant) (Year 1)** **Slight-Moderate Adverse (not significant) (Year 15)**		
6.15	Night-time Townscape Character	Change in night-time townscape character (within 2km of the Site Boundary)		**Slight-Moderate Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• building massing and structure height should step down from high in the north to low in the south, reflecting the transition from the industrial river corridor to local community; and • lower-level development to the south should be more fractured allowing some intervisibility between buildings responding to the interface with the community. <u>Outline LaBARDS</u> • creation of landscape buffer along the boundaries of the Site to minimise the effects on visual amenity. In particular a substantial landscape buffer along the western Site Boundary is proposed to minimise the effects on visual amenity of users of Crossness LNR and local PRoW, and to respond positively to local policy; and • locating the permanent diversion of FP2 into the landscape buffer along the western Site Boundary to minimise the impact on visual amenity of users of this PRoW. <u>Outline Lighting Strategy</u> • consideration of the lighting design to avoid excessive lighting levels and to reduce adverse effects on the surrounding environment. The **Outline Lighting Strategy (Document Reference 7.3)** outlines design commitments for lighting, compliance with which is secured through a requirement within the **Draft DCO (Document Reference 3.1)**. *Additional Mitigation* The Applicant is also considering offsite improvements in the local area, including including the Biodiversity Net Gain (BNG) Opportunity Area (shown in **Figure 7-7: Proposed Habitat Creation and Enhancements** of the **Environmental Statement (Document Reference 6.2)**), which if brought forward would aim to achieve enhanced access and townscape outcomes in the area, in addition to ecological benefits. These will involve conversion of the disused gravel car park and 0.660ha of poor condition grassland to a combination of open mosaic and reedbed. The offsite access improvements referenced in the **Outline LaBARDS (Document Reference 7.9)** would include provision of improved access, interpretation, and activation on PRoW within accessible open spaces for all seasons, encouraging active and healthy lifestyles, points of engagement and benefit local people, and improved use and amenity value. As discussed in the assessment above, immediate views would be			The **Design Principles and Design Code (Document Reference 5.7)** are commitments to govern the of the Proposed Scheme during the detailed design stage and secured by DCO requirement.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			affected by the Proposed Scheme, however, a new route proposed would allow users to experience more of the surrounding environment where they have not been able to before. PRoW and access improvements are relevant to the townscape as they benefit human interaction, the way people interact with the environment and contribute to the townscape character. Whilst the offsite improvements would benefit the local townscape, they are considered to be of a scale that would not materially alter the assessment of effect the Proposed Scheme would have on the overall townscape.			
Potential Effects on Visual Amenity (including locally designated views)						
6.16	Accessible Open Land	Change in character and visual amenity from accessible open land	*Embedded Mitigation* See ID 6.13. *Additional Mitigation* See ID 6.13.	**Large Adverse (significant) (Year 1)** **Moderate-large Adverse (significant) (Year 15)**	See ID 6.7.	See ID 6.7.
6.17	Study Area open spaces	Change in character and visual amenity from Study Area open spaces		**Slight-Moderate Adverse (Not significant) (Year 1)** **Slight-Moderate Adverse (Not significant) (Year 15)**		
6.18	PRoW	Change in visual amenity for users of the England Coast Path (FP3/NCN1)		**Slight-Moderate Adverse (not significant) (Year 1)** **Slight-Moderate Adverse (not significant) (Year 15)**		
6.19		Change in visual amenity for users of PRoW within and in		**Moderate Adverse**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		the vicinity of the Site Boundary (FP1/FP2/FP4)		**(significant) (Year 1)** **Moderate Adverse (significant) (Year 15)**		
6.20		Change in visual amenity for users of the London Loop Section 24		**Slight Adverse (not significant) (Year 1)** **Slight Adverse (not significant) (Year 15)**		
6.21	Road Network	Change in visual amenity for users of Norman Road		**Slight-moderate Adverse (not significant) (Year 1)** **Slight-moderate Adverse (not significant) (Year 15)**		
6.22		Change in visual amenity for users of Eastern Way		**Slight Adverse (not significant) (Year 1)** **Slight Adverse (not significant) (Year 15)**		
6.23		Change in visual amenity for users of Junction between Eastern Way/A2016/Yarnton Way		**Slight Adverse (not significant) (Year 1)** **Slight Adverse (not significant) (Year 15)**		
6.24	Change in visual amenity from residential areas	Residential		**Slight-moderate Adverse (not**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	with views towards the Proposed Scheme and within the 2km Study Area			**significant) (Year 1)** **Slight-moderate Adverse (not significant) (Year 15)**		
6.25	Change in visual amenity from Thamesmead residential area			**Slight Adverse (not significant) (Year 1)** **Slight Adverse (not significant) (Year 15)**		
Arboriculture Impact Assessment						
6.26	Arboriculture features	All trees which may be affected by the Proposed Scheme.	*General Mitigation* The full CoCP(s) will provide that all tree works must comply with British Standard 3998:2010 Tree Work – Recommendations[6] and should therefore be carried out by skilled tree surgery contractors. A full Arboricultural Method Statement (AMS) will be prepared as an appendix to the full CoCP(s) and should cover the duration of construction activities with appropriate levels of arboricultural supervision where work is near trees. The AMS would incorporate the following mitigation measures: • the appointment of an Arboricultural Clerk of Works (or the Ecological Clerk of Works taking on this role as relevant) • to prevent above and below ground damage to arboricultural features Construction Exclusion Zones would be established within the AMS for the duration of demolition and construction which is demarcated by a tree protection fence. Where access only is required then temporary ground protection measures could be installed to prevent soil compaction and root damage; • it is noted that in establishing Construction Exclusion Zones, for groups of trees the Root Protection Area (RPA) is based on a distance from the plotted group extent which represents tree stem locations. The indicative RPAs used for design are based on a symmetrical circle and are shown in the **Figure 10-1: Tree Constraints Removals and Protection Plan (Volume 2)** of the **Environmental Statement**	Not applicable.	Proposed monitoring including; • once protection measures have been installed, and prior to the commencement of the development, a site inspection would be undertaken by the Arboricultural Clerk of Works to confirm that all protection measures have been installed in accordance with the AMS (as updated); • if any arboricultural issues arise during the construction of the Proposed Scheme, then the Arboricultural Clerk	An Outline AMS can be found within **Appendix 10-3: Arboricultural Impact Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.2)**. A full AMS (being a development of the outline) will be prepared as an Appendix to the full CoCP(s). The development of the full CoCP(s) is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and outlines tree management measures. The development of the full LaBARDS(s) is secured through a requirement of the

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			(Document Reference 6.2), These RPAs are indicative, and the shape can be adjusted by an arboriculturist to ensure that sufficient area, and therefore soil volume, is protected. As such these would be updated and confirmed within the AMS; and • tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing taken from BS 5837:2012[7] which may be required is included in **Figure 1 of Appendix 10-3: Arboricultural Impact Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. In all instances the following shall be adhered to: – tree protection fencing shall be erected prior to any works onsite including site clearance, groundwork or the importation of plant and materials; – tree protection fencing shall be erected in accordance with the layout shown on the **Figure 10-1: Tree Removals and Protection Plan (Volume 2)** of the **Environmental Statement (Document Reference 6.2)**; – all weather notices will be attached (at eye level) to the tree protection fencing at suitable intervals and shall include suitably sized informative text stating “Tree Protection Fencing, Construction Exclusion Zone – No Access”; – once erected, tree protection fencing shall remain in situ until construction activities are complete; – no construction activities, storage of materials or pedestrian or vehicular access shall take place within the Construction Exclusion Zones; and – regular daily checks will be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage will be rectified without delay.		of Works would be contacted for advice on how to proceed; and • on completion of the Proposed Scheme a general survey of the trees would be undertaken to identify any remedial action necessary as a result of the works.	**Draft DCO (Document Reference 3.1)**.

Table 7: Water Environment and Flood Risk - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
7.1	• River Thames • Marsh Dykes (main rivers) • Ponds • Marsh Dykes (ordinary watercourses)	Change in quality of surface water features.	*Embedded Mitigation* The full CoCP(s) will provide that construction activities will be undertaken in accordance with appropriate good practice guidance, such as the Construction Industry Research and Information Association's (CIRIA) control of water pollution from construction sites[8] (C532) and the Environment Agency's Pollution Prevention for Businesses[9]. Also, Guidance for Pollution Prevention (GPP)[10] which provide good practice guidance, particularly PPG1 - General guide to the prevention of water pollution; GPP 2 - Above ground oil storage tanks; GPP 5 - Works and maintenance in or near water; and GPP 6 - Working at construction and demolition sites. The full CoCP(s) will contain construction method statements and work instructions for onsite staff that will inform them of the legal obligation to protect the water environment from contamination and the way that they should work onsite to reduce the risk of polluting the surrounding environment. It will include instructions on dealing with certain situations such as general good site practice, adverse weather conditions, environmental incidents, and complaints. It will provide that construction staff will be equipped with the necessary equipment, Personal Protective Equipment (PPE) and substances to implement biosecurity control measures, including effective hygiene and sanitation practices. The full CoCP(s) will contain work instructions for onsite staff that will inform them of the legal obligation to protect the water environment from contamination and the way that they should work onsite to reduce the risk of polluting the surrounding environment. It will include instructions on dealing with certain situations such as general good site practice, adverse weather conditions, environmental incidents, and complaints. Prior to any works being undertaken near a watercourse, a pollution prevention plan will be prepared and agreed with the Environment Agency to accompany the full CoCP(s). This will include a description of the procedures that will be followed in the event of an environmental emergency such as a fuel or chemical spillage onsite. This will enable the Contractor(s) and other bodies (e.g. the Environment Agency) to rapidly manage and mitigate a pollution event should one occur during construction or operation of the Proposed Scheme. This will detail:	**Slight Adverse (Not Significant)**	The full CoCP(s) will provide details on a network of observation boreholes, for the purpose of groundwater level monitoring, to be installed pre and post-construction to assess groundwater level response and inform any mitigation measures required.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. Compliance with **Appendix 11-2: Flood Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)** is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The development of a full EPRP(s) is also secured by DCO requirement.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• the locations, names and references of the watercourses shown within the **Outline CoCP (Document Reference 7.4)** area in **Figure 11-2: Surface Water Features (Volume 2)** of the **Environmental Statement (Document Reference 6.2)**; • normal flow directions; • key culverts/barriers to flow; • inspection locations; • access points; • locations of pollution prevention measures (e.g. spill kits, silt curtains, silt traps, booms and stop boards) both embedded and reactive; • outfalls/connections to other watercourses (including the River Thames); • a contingency plan in case of an accident/pollution incident; • a definition of a major pollution incident; • methodology, to be agreed with the LLFA/Environment Agency, to shut down the Great Breach and/or Green Level Pumping Stations; and • that the Pollution Prevention Plan will be reviewed and revised as necessary during construction if environmental conditions change (for example excessive wet weather). **Figure 17-3: Connections between Ground Conditions Mitigations Tasks and Design** in **Chapter 17: Ground Conditions and Soils (Volume 1)** of the **Environmental Statement (Document Reference 6.1)** diagrammatically shows the measures undertaken throughout the ground conditions and soils assessment in the context of the design of the Proposed Scheme. This is also applicable to the water environment where ground condition information will be obtained from the ground investigation that will be undertaken prior to construction as secured by DCO requirement within the **Draft DCO (Document Reference 3.1)**. **Surface Water Features** **Increased Sediment Load** The full CoCP(s) will provide for: • soil and stockpiles will not be located within 10m of surface waterbodies or drainage lines without appropriate cut-off features or flow barriers; • stockpile management measures e.g. by using jute matting to mitigate release of sediment load; • topsoil will not be stored in the parts of the Temporary Construction Compounds (as shown on the **Works Plans (Document Reference 2.3)**)			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			which are shown to be at risk of flooding from the Marsh Dykes (shown in **Figure 11-4: Marsh Dykes Breach Model Results** of the **Environmental Statement (Document Reference 6.2)**); • no activities will take place in the Marsh Dykes (ordinary watercourses) with the exception of infilling activities and construction of drainage outfalls, as discussed below. • no activities will take place in the River Thames or within 16m of the toe of the flood defences without prior consent from the Environment Agency. It is proposed that consent for these activities will be sought through the DCO (via the Environment Agency's Protective Provisions), and as such that no separate Flood Risk Activity Permit will be required. • a construction phase surface water management plan will be prepared as part of the full CoCP(s) to ensure that the run-off (in terms of both quality and quantity) is appropriately managed, so it does not increase risk of pollution to the environment. • all loose materials will be covered. • construction activities including vegetation clearance, earth moving, storage of materials and equipment and plant movement in the vicinity of any surface water feature or drainage lines will be minimised. • land clearance in the vicinity of surface water features will be minimised. When land clearance in the vicinity of surface water features is unavoidable, the features would be protected with, but not limited to, silt traps, silt fences and filter bunds. • temporary cut-off drains will be used around the perimeter of the working areas to prevent clean run-off entering and dirty water leaving the working area without appropriate treatment. • vegetation will only be removed when necessary and gradients kept as shallow as possible to prevent large amounts of earth being washed away during periods of heavy rainfall. • areas of ground that have been exposed will be reseeded or surfaced as soon as reasonably practicable. • facilities will be provided for wheel washing to prevent "track out" from vehicles. Wheel wash facilities will be appropriately contained to ensure that silt laden water would not reach surface water features. • surface water run-off and excavation dewatering will be captured and settled out prior to water being discharged to the Marsh Dykes or Norman Road Stream. Run-off from potentially highly contaminated areas will be treated appropriately prior to discharge. The Contractor(s) will apply for construction discharge permits if required, and the process for this is detailed in the **Outline CoCP (Document Reference 7.4)**.			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• cut-off ditches, silt fencing or similar measures, will be provided along the perimeter of the Site to capture any run-off from the Site. • measures to protect drains and surface water features from increased sediment load will be implemented, for example, by labelling/marking drains or using silt traps. • all the existing drains and sewers within the Site will be identified and labelled and measures implemented to prevent polluting substances from entering them. **Release of Hydrocarbons and Oils and Use of Hazardous Materials** The full CoCP(s) will provide for: • a construction phase surface water management plan would be prepared as part of the full CoCP(s) to ensure that the run-off is appropriately managed, so it does not increase risk of pollution to the environment; • appropriate interceptors to be incorporated in the onsite drainage systems; • spill containment equipment to be stored on the Site; • hazardous substances, oil and fuel to not be located within 10m of water bodies or drainage lines and would be stored in bunded areas holding at least 110% of the container or one quarter of the combined capacity of all containers where there are more than one. Storage and bunded areas to be constructed with impervious floors; • refuelling of machinery to be undertaken in bunded areas, which would not be located within 10m of water bodies or drainage lines; • all refuelling to be supervised and carried out in a designated area with appropriate cut-off drainage and located away from watercourses and drainage lines; • drip trays to be used for diesel pumps and standing plant would be regularly maintained to prevent leaks; • construction materials, such as cement, to be mixed in designated areas located away from water bodies and drainage lines; and • concrete wash out to only take place at designated concrete washout areas. **Infilling of Water Features** The full CoCP(s) will provide that the infilling of water features that is required during the construction phase will be undertaken in such a manner to prevent an increase in silt / sediment loads in the receiving watercourses / Marsh Dykes and with appropriate mitigation in place to prevent the creation of			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			contaminant pathways to the receiving groundwater body and / or increase in groundwater flood risk to the new infrastructure. The loss of water features will be offset by the enhancement/creation of new water features through the measures set out in the **Outline LaBARDS (Document Reference 7.9)**. **Moving of Water Features** Sections of OW4 and the northern section of OW3 will be moved in order to accommodate the Flue Gas Supply Ductwork. Details regarding the moving of water features is in the **Outline Drainage Strategy (Document Reference 7.2)**. The construction of the new watercourse will be undertaken in the dry and measures to deal with the first flush through the new watercourses, as set out in the **Outline CoCP (Document Reference 7.4)**. The new watercourses provide the opportunity for a betterment in comparison to the existing watercourses as they were observed to be vegetated during the general site walkover. The new watercourses would be designed to replicate the size of the existing watercourses. The design of the new watercourses would be undertaken during detailed design and in consultation with the LLFA. Norman Road Stream may require diversion or protective measures due to the location of the platform. This will be developed during detailed design and in consultation with the Environment Agency. **Dust and Debris** Dust management procedures would be applied as detailed in **Table 1** above. **Groundwater Features** The full CoCP will provide that measures in relation to groundwater will be implemented in alignment with the Environment Agency's Approach to Groundwater Protection Guidance[11]. Specifically, Section C Infrastructure, Section D Pollutant Storage and Transmission, Section G Discharge of liquid effluents in to the ground, Section J Land Contamination, Section N Groundwater resources and Section S Flooding from Groundwater, details the measures associated with construction activities. Ground investigation would be undertaken prior to the construction phase as secured by DCO requirement within the **Draft DCO (Document Reference 3.1)** and set out in the **Outline CoCP (Document Reference 7.4).** As shown in **Figure 17-3: Connections between the Ground Conditions and Soils Mitigation Tasks and design** of **Chapter 17: Ground Conditions and Soils**			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			(Volume 1) in the **Environmental Statement (Document Reference 6.1)**, this is likely to be led by geotechnical requirements but would include geo-environmental sampling of terrestrial soils, marine sediments, groundwater and surface water. The scope of the geo-environmental investigation would be underpinned by the CSM presented in **Appendix 17-1: Preliminary Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. Depending on the information gathered through this ground investigation, monitoring of groundwater and surface water may be recommended before construction commences, during construction works and post-construction. The full CoCP(s) will provide a Piling Risk Assessment would be produced to outline measures to protect the underlying aquifers during construction phase activities (i.e. drilling, piling, excavation and dredging), and to mitigate the risk of creating preferential pathways for potential contamination to the aquifers (Section 17.8 of **Chapter 17: Ground Conditions and Soils (Volume 1)**). Additionally, risk assessments will be undertaken for any construction proposals entailing significant groundworks (especially those which are proposed to include excavations and below ground structures likely to penetrate below the groundwater table) including a Generic Quantitative Risk Assessment (GQRA) to allow assessment of identified plausible contaminant linkages and remedial measures as required (**Appendix 17-1: Preliminary Risk Assessment** of the **Environmental Statement (Document Reference 6.3)**). **WFD Designated Water Bodies** The WFD related mitigation measures embedded in the Proposed Scheme are those referred to in other sections of the **Outline CoCP (Document Reference 7.4)** including: • The capital/construction phase dredging works will be undertaken by a backhoe dredger. Backhoe dredging utilises an excavator mounted on the edge of a pontoon or barge, which reaches into the water and scoops bed material out. A separate vessel or barge will be moored alongside, which the dredged material is deposited directly into. • A retaining wall will be installed (capped at bed level) within the river channel to prevent potential erosion of intertidal sediment and reduce the size of the dredge pocket required. • The dredged arisings will be managed in accordance with relevant legislation and will be disposed of offsite (via vessel) as it is unlikely that the dredged arising will be suitable for reuse on the Proposed Scheme.			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			The removal of the dredged arisings will be undertaken by an appropriately licenced waste carrier. • Construction activities involving working on tidal/intertidal zones, such as sheet pile installation construction, should, where possible, occur during low tide conditions to ensure that structures are constructed within a dry working environment. • Noise and vibration must be controlled and kept to the minimum necessary. • Lighting used for construction must be switched-off when not in use and, where possible, positioned so as not to spill on to watercourses. • Dredged material should not be disposed of offsite without proper treatment, as it provides a pathway for spreading marine INNS to other areas. • It is expected that construction vessels will follow standard procedures for managing INNS in their ballast water. The **Outline CoCP (Document Reference 7.4)** includes a commitment that the full CoCP(s) will include a Biosecurity Management Plan. • To mitigate preferential pathways to controlled waters (including WFD groundwater water bodies) that result from construction phase activities, a Piling Risk Assessment, Materials Management Plan, Earthworks Specification and/or Remediation Strategy (as appropriate) would be produced (further information is included in **Section 17.8** of **Chapter 17: Ground Conditions and Soils** of the **Environmental Statement (Document Reference 6.1)**). **Coastal Processes** The detailed design of the retaining wall to the rear of the dredge pocket proposed to help maintain the integrity of the adjacent side slopes (dredged or intertidal) will be approved pursuant to the Deemed Marine Licence, so will not be incorporated in the full CoCP(s). The sheet pile wall will be designed to reduce disruption to the intertidal area. **Flood Risk** The full CoCP(s) will provide that no works would be carried out within the Site Boundary when there is a risk of breach of the River Thames flood defences. Furthermore, should an event larger than the standard of protection event (1 in 1000 years) be forecast then no works would be carried out within the Site Boundary.			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			The full CoCP(s) will provide that a Method Statement would be developed by the Contractor(s) detailing the procedures for securing the Site and plant equipment for a flood event (breach or overtopping of the River Thames Defences), in particular with reference to safe working practises, harmful substances and fuels. The full CoCP(s) will provide that the Contractor(s) would sign up to the Environment Agency flood warning service to receive up to date flood information and warnings. The surface water management plan for the construction phase referred to above will provide details on the potential increase in flood risk associated within a loss of water features that currently provide stormwater storage. This loss will be offset through providing storage to be included within the surface water management plan. *Additional Mitigation* **Appendix 11-2: Flood Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)** sets out the measures to be undertaken to mitigate the worst case breach flood event. As described in **Appendix 11-1: Water Framework Directive Assessment** of the **Environmental Statement (Document Reference 6.3)** sediment sampling at depth will be undertaken to inform detailed design. Information gathered through this sampling will inform subsequent additional mitigation if sediments are shown to be elevated in contaminant concentrations. Sediment sampling will follow standard MMO guidelines[12]and will be undertaken pursuant to the terms of the Deemed Marine Licence contained in the **Draft DCO (Document Reference 3.1)**.			
7.2	• Superficial deposit aquifers designated Secondary Undifferentiated aquifers (Alluvium and Head Deposits) and Secondary A aquifer (Taplow Gravel Member)	Chemical and physical alteration of the Superficial Deposit Aquifers (including groundwater flow barriers)	*Embedded Mitigation and Additional Mitigation* See ID 7.1.	**Neutral (Not Significant)**	See ID 7.1.	See ID 7.1.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
7.3	Bedrock aquifer designated a Principal aquifer (Chalk Group) Thanet Sand and Lambeth Group (bedrock) Secondary A aquifer	Chemical and physical alteration of the Principal Aquifer		**Slight Adverse (Not Significant)**		
7.4	Groundwater Abstractions for non-potable use	Pollution of the groundwater abstractions for non-potable use.		**Slight Adverse (Not Significant)**		
7.5	River Thames (including Thames Middle Transitional WFD Water Body) Greenwich Tertiaries and Chalk WFD Groundwater Body	Change in the biological, physico-chemical and hydromorphological quality elements of the WFD designated water bodies.		**Slight Adverse (Not Significant)**		
7.6	River Thames	Changes to sediment processes and habitats.		**Slight Adverse (Not Significant)**		
7.7	NPPF more vulnerable land NPPF essential infrastructure NPPF water compatible land Secondary A aquifer (Taplow Gravel Member)	Change in local flood risks (from all sources of flooding).		**Slight Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
7.8	Potable Water / London Water Resource Zone	Increase in demand for potable water.		**Slight Adverse (Not Significant)**		
Operation Phase						
7.9	River Thames Marsh Dykes (main rivers) Marsh Dykes (ordinary watercourses) Ponds	Change in the quality of surface water features	*Embedded Mitigation* In addition to the Operational EMP, the current environmental management system for Riverside 1 and 2, which is certified to ISO1400 (internationally recognized standard for environmental management systems), would be updated to incorporate any new procedures and update current procedures to control environmental impacts as a result of the operation of the Proposed Scheme. **Chapter 2: Project Scheme and Site Description** of the **Environmental Statement (Document Reference 6.3)** provides a description of the water usage requirements for the Proposed Scheme and **Chapter 3: Consideration of Alternatives** of the **Environmental Statement (Document Reference 6.3)** explains the justification for progressing with the selected options for water usage. This sets out the measures embedded into the design of the Proposed Scheme to minimise potable water use through the use of appropriate technologies and an innovative approach. Detailed design will manage potable water demand through implementation of all or some of the following measures: • using dry cooling for CO2 Processing; • pre-cooling the incoming flue gas (for re-heating outlet flue gas and/or us in the Heat Recovery and Heat Transfer System; • rainwater harvesting; and/or • onsite storage. **Surface Water Features** General The Proposed Scheme will include a system of mitigating the risk of potential pollution contamination to the Site and adjacent areas, including the Crossness LNR in its detailed drainage strategy. This includes the water quality measures embedded in the **Outline Drainage Strategy (Document Reference 7.2)** (i.e. filter drains, ponds and oil separators/downstream defenders). The **Outline Drainage Strategy (Document Reference 7.2)**	**Slight Adverse** **(Not Significant)**	See ID 7.1.	The Operational EMP (prepared prior to the Proposed Scheme becoming operational) will be developed. This is secured by a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline EPRP (Document Reference 7.11)** outlines the operational phase emergency preparedness and response planning that would be required to be adopted during the operation phase of the Proposed Scheme. The development of the full EPRP, in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline Drainage Strategy (Document Reference 7.2)**; accompanies this DCO application and outlines the proposed drainage strategy. The development of the full Drainage Strategy, in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
7.10	Thanet Sand and Lambeth Group (bedrock) Secondary A aquifer. Superficial deposit aquifers designated Secondary Undifferentiated aquifers (Alluvium and Head Deposits) and Secondary A aquifer (Taplow Gravel Member)	Pollution Impacts to groundwater quality as a result of the proposed Outline Drainage Strategy		**Neutral** **(Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			discharges into the Marsh Dykes ditch network before being pumped into the River Thames. Any discharges from potentially high risk internal areas (e.g. those contained and bunded within the buildings) will be contained and tested prior to release to either the surface water network or, if polluted, discharged into the foul network. These areas are not considered as part of the proposed surface water pollution prevention measures, since are unlikely to contribute to the surface water drainage pollution sources. The following external areas within the Site have been identified and are included within the **Outline Drainage Strategy (Document Reference 7.2)** requiring pollution prevention measures to collect and control potentially contaminated surface water run-off: • Chemical Storage and Distribution Handling Facilities; • Solvent Storage; • Back Pressure Turbine and Generator; • Liquefaction within the CO_2 Processing Plant(s); • LCO_2 Buffer Storage Area; and • Wastewater Treatment Plant. The Outline Drainage Strategy also provides for the following: The Proposed Scheme is to be designed in accordance with Dangerous Substances and Explosive Atmospheres (DSEA) Regulations, HSG140 Safe use and handling of flammable liquids guidance, L5 Control of substances hazardous to health ACOP and guidance and CIRIA's Design of containment systems for the prevention of water pollution from industrial incidents . Appropriate design features will be incorporated within the Proposed Scheme at the detailed design stage, such as containment measures and barriers to prevent damage to pipelines, pressure monitoring and pressure relief systems to prevent over pressurisation situations and leak detection systems, features to minimise, isolate or shut down systems in the event of an abnormal plant performance; isolation valves contained in the surface water drains and attenuation system, to be closed in the event of accidental spillage into the uncontaminated surface water drainage system and the inclusion of pollution prevention / control measures, such as the use of bunding. Operational activities/management regimes to be controlled through the following:			Compliance with the **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)** is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and sets out the habitat creation measures. The development of the full LaBARDS(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• preparation of operational emergency plans covering chemical leaks (the operational plan will be based on the procedures set out in the **Outline EPRP (Document Reference 7.11)**; • transportation of hazardous/dangerous loads in appropriate vehicles in accordance with relevant legislation and guidance, including The Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations[13] and International Carriage of Dangerous Goods by Road (ADR)[14]; • adherence to all relevant approved codes of practice (ACOP) and guidance including, but not limited to, the following: HSG140 Safe use and handling of flammable liquids guidance[15], L5 Control of substances hazardous to health ACOP and guidance[16] and L138 Dangerous substances and explosive atmospheres ACOP and guidance[17]; and • when the surface water run-off is collected and enters the onsite drainage system, discharge valves at the outfall points will be kept closed initially as the run-off is tested for contamination. As detailed in **Chapter 2: Site and Proposed Scheme Description (Volume 1)** if the run-off meets the water discharge quality standards, it will be discharged to the proposed surface water drainage network. If it fails to meet the standards and unacceptable levels of contamination are detected, the run-off would either be transferred to the Wastewater Treatment Plant for treatment or, if contaminant levels are such that they cannot be treated onsite, to an Above Ground Storage Tank prior to removal and treatment offsite under a waste transfer licence to a suitable licensed wastewater treatment facility. The controls to manage the potential for surface water pollution are included in the **Outline EPRP (Document Reference 7.11)**. In addition to the measures above: • oil storage would be designed in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001; and • the Rich Solvent/Lean Solvent Heat Exchanger would be individually bunded. The bunds will be designed in accordance with the COSHH/COMAH/HSE guidance/GPPs requirements during detailed design. As part of the detailed design, an assessment of the risk for all the tanker/chemical unloading bays will be undertaken. This will determine whether they are designed as fully bunded areas or require suitable protection measures to prevent the entry of any spillages to the onsite surface water drainage systems. The bunds, if required, will be designed in			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			accordance with the COSHH/COMAH/HSE guidance/GPPs requirements at the detailed design stage. There would be additional control measures in accordance with the ISO 14001 certification within the **Outline EPRP (Document Reference 7.11)** for the Proposed Scheme in order to control surface water run-off that could become contaminated by chemicals and oil. These would include, but not be limited to, the following: • a minimum of twice daily checks undertaken to inspect for chemical and oil leakage. Furthermore, there is a constant presence of key operative staff at the Carbon Capture Facility with responsibility to undertake informal checks as part of their other duties and could undertake immediate rectification/pollution prevention measures as required; • drip trays, or similar, would be installed under pumps to capture any potential leaks; and • leakage detection systems will be considered for high-risk areas during detailed design. <u>Fire Water</u> Fire water pollution prevention measures are incorporated within the **Outline Drainage Strategy (Document Reference 7.2)** including profiling roads towards attenuation features that will offer containment. This will enable flows from the outfalls to be isolated (e.g. via a penstock or similar), with fire waters retained within the Site. These would consequently be treated onsite or transported offsite for treatment/disposal as appropriate. <u>Process and Foul Water Disposal</u> Wastewater will be generated by the Water Treatment Plant itself. This will include backwash water from the ultrafiltration membrane process, concentrate from the nanofiltration membrane process and membrane cleaning solutions. Backwash water will be treated and recycled back into the cooling water supply (should hybrid cooling be selected at the detailed design stage). Membrane cleaning solutions will be neutralised. Treated wastewater will be discharged to the new connection into the Thames Water foul sewer (with or without treatment, depending on trade effluent consents). The level of treatment will be defined at the next stage of design and subject to trade effluent consent. Should this option not be feasible following further discussion with Thames Water, a Zero Liquid Discharge solution will be investigated at the detailed design phase. This option consists of concentrating contaminants to a solid waste, whilst allowing for the release			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			of a source of water supply for the Carbon Capture Facility (and thereby reducing the need for makeup water). It is not proposed to recycle wastewater that has been in contact with any amine compounds and therefore this water will not be discharged to the Water Treatment Plant. The volume of amine wastewater effluent is expected to be comparatively small; therefore, the waste will be disposed of by specialised appointed Contractor(s), taking the waste offsite for disposal via road tanker. Wastewater from welfare facilities will be routed to the Thames Water foul sewer for treatment at a suitable wastewater treatment works; it is not proposed to treat these flows onsite. Thames Water have been consulted to ensure that there can be sufficient capacity for appropriate treatment of the effluent from the Proposed Scheme within the Crossness WWTW to result in no adverse changes to the final effluent discharged into the River Thames. The **Outline Drainage Strategy (Document Reference 7.2**) details the treatment and disposal of foul water from welfare facilities. **Groundwater Features** As det our above, a Ground Investigation will be undertaken prior to the construction phase set out in the **Outline CoCP (Document Reference 7.4)** and Section 17.7 of **Chapter 17: Ground Conditions and Soils (Volume 1)** in the **Environmental Statement (Document Reference 6.3)**. Future Ground Investigation will determine mitigation requirements at detailed design including considerations of changes in groundwater abstractions adjacent to the Site. If shallow groundwater levels are identified or expected within the superficial deposits mitigation to prevent groundwater flooding may include measures for additional groundwater drainage and/or formation of granular pathways to introduced flow barriers (i.e., perimeter sheet pile wall). This will ensure groundwater flow conditions are only altered locally (**Appendix 11-3: Groundwater Impact Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**). **WFD Designated Water Bodies and Coastal Processes** The sheet pile retaining wall installed within the River Thames river channel will prevent potential erosion of intertidal sediment and limit the area that will be subject to ongoing maintenance dredging.			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Maintenance dredging will be undertaken by backhoe dredging that will result in relatively minimal losses of sediment compared to other methods of dredging. Measures for managing water quality will be developed pursuant to the Deemed Marine License included as part of the **Draft DCO (Document Reference 3.1)**, including water quality monitoring and relevant seasonal and/or tidal restrictions. Measures are described in **Appendix 11-1: Water Framework Directive Assessment (Volume 3)**. The measures listed above for preventing impact to surface water and groundwater features will also be applicable to managing risk to WFD waterbodies during operation. **Flood Risk** To mitigate the potential impact on the risk of flooding from the Marsh Dykes resulting from the Proposed Scheme, floodplain storage compensation will be provided in some of the buffer strips (i.e. the strip of land between the Carbon Capture Facility and the watercourses) to create additional floodplain. This will manage the risk of increased flooding from the Marsh Dykes. Further details are provided in **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)** which will be secured as part of the DCO. To mitigate the potential flood risk to the Proposed Scheme from a breach in the Thames Flood Defences: • the construction of the development platform will be at a minimum elevation of 2.8m AOD for the Proposed Scheme, which includes 0.3m of freeboard above the Environment Agency's modelled breach water level (1 in 200 year plus climate change), and • flood sensitive equipment is to be set a minimum of 0.3m above the platform level (i.e. a minimum of 3.1m AOD). This will ensure that the Proposed Scheme (equipment, plant and operatives) is safe from flooding associated with the breach of the River Thames Flood Defences as modelled by the Environment Agency. Construction of the platform for the Proposed Scheme in the defended River Thames floodplain will result in a marginal increase in residual flood risk across the flood cell should a breach occur in the flood defences. As this increase is considered to be marginal and will result largely in a negligible increase in risk, no mitigation is proposed. Further details are provided in			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Appendix 11-2: Flood Risk Assessment (Volume 3) in the **Environmental Statement (Document Reference 6.3)**. **Potable Water Supply** **Chapter 2: Site and Proposed Scheme Description (Volume 1)** in the **Environmental Statement (Document Reference 6.1)** describes the approach to water supply, including how the potable water demand has been minimised. Further information on the feed water supply and justification of the progression of the use of potable water is provided in **Section 3.6** of **Chapter 3: Consideration of Alternatives (Volume 1)** in the **Environmental Statement (Document Reference 6.1)**. **Opportunities for Environmental Enhancement** In order to achieve 10% net gain for biodiversity, there would be enhancements to the ditches and watercourses in the Mitigation and Enhancement Area. More information can be found in the **Outline LaBARDS (Document Reference 7.11)** and **Appendix 7-1: Biodiversity Net Gain Report (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**. Subject to detailed design, these habitat improvements would require additional flows within the channels across the Mitigation and Enhancement Area to enhance and maintain the wet grassland and aquatic habitats with the creation of scrapes and grips (to assist in keeping soils moist within the wetland and to produce some variability in water level and moisture conditions). The improvements are likely to include: • additional lengths of channel within the ditch network; and • a new north-south connection beneath the Thames Water Access Road so that the surface water discharged from the northern of the Carbon Capture Facility (see the **Outline Drainage Strategy (Document Reference 7.2)**) can flow into the Mitigation and Enhancement Area. This will result in a reduction in the attenuation provided within the built development areas within the Site, thus enabling higher discharge rates into the new network of ditches within the Mitigation and Enhancement Area. Consequently, following rainfall events the peak water level will be higher facilitating the number of areas inundated and leading to habitat enhancement. This approach would likely need to be supplemented by adding to / enhancing the flow controls (weirs, penstocks, sluices, or other similar mechanisms) which exist on the current outfalls (noting the location of the current outfalls may need alteration) of the ditch network into the Great			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Breach Dyke, to ensure there is no increase in flow discharge from the Site Boundary (i.e. both the Carbon Capture Facility and Mitigation and Enhancement Area). *Additional Mitigation* See ID 7.1.			
7.11	Thanet Sand and Lambeth Group (bedrock) Secondary A aquifer. Superficial deposit aquifers designated Secondary Undifferentiated aquifers (Alluvium and Head Deposits) and Secondary A aquifer (Taplow Gravel Member)	Changes to groundwater flow paths and introducing groundwater flow barriers	*Embedded Mitigation and Additional Mitigation* See ID 7.9.	**Slight Adverse** **(Not Significant)**		
7.12	River Thames (including Thames Middle Transitional WFD Water Body) Greenwich Tertiaries and Chalk WFD Groundwater Body	Change in the biological, physico-chemical and hydromorphological quality elements of the WFD designated water bodies.		**Slight Adverse** **(Not Significant)**		
7.13	River Thames	Changes to the sediment processes and habitats.		**Slight Adverse** **(Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
7.14	NPPF less vulnerable land NPPF more vulnerable land NPPF essential infrastructure NPPF water compatible land Secondary A aquifer (Taplow Gravel Member)	Change in local flood risk (from all sources of flooding)		**Slight Adverse (Not Significant)**		
7.15	Potable Water / London Water Resource Zone	Increase in demand for potable water.		**Slight Adverse** **(Not Significant)**		

Table 8: Climate Resilience - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
8.1	• Construction site (including Temporary Construction Compounds); • Staff; • Materials; and • Plant and equipment.	Climate Variable: • Sea level rise. • Storm surge. • Storm tide. Potential Impacts: • Flooding of excavations. • Reducing earthwork stability and hastening the deterioration of materials. • Damage to construction equipment and materials through flooding / overtopping of defences. • Existing drainage infrastructure overwhelmed. • Mobilisation of pollutants, affecting building materials. • Access routes may be impeded by flooding. • Construction programme delays. • Injuries to workforce and H&S risks.	*Embedded Mitigation* • raising sensitive equipment above the design flood level plus freeboard. • Site clearance, levelling and ground preparation works for the Temporary Construction Compounds may be completed to provide a suitable working compound. The full CoCP(s) will provide that the surface material of construction compounds will be permeable so as to allow rainwater to percolate to ground, with suitably bunded locations identified as storage areas for any hazardous, polluting materials or chemicals to prevent the risk of pollution. • the full CoCP(s) will set out how construction activities will be undertaken in accordance with appropriate good practice guidance such as the Guidance for Pollution Prevention (GPP). Further embedded design, mitigation and enhancement measures relevant to water environment and flood risk are provided in **Table 7**. • Periodic maintenance dredging will be undertaken to ensure the Proposed Jetty remains operational at all states of tide. *Additional Mitigation* Not applicable.	**Negligible** to **Minor (Not Significant)**	The full CoCP(s) will provide that the Contractor(s) will need to monitor the effects of extreme weather-related incidents (for example, road surface deformations, flooding, storm damage and debris, snow and ice etc.) and identify any maintenance measures required. Inspections by an appropriately qualified professional will be carried out following an intense rainfall event, heatwave, high wind or storm event to monitor any damage and implement appropriate mitigation as necessary. Given the uncertainties inherent in climate science and projections, the full CoCP(s) will provide that the impacts and effects considered in the ES will be monitored throughout the construction. This would include monitoring of local extreme weather events via the Met Office,	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The measures set out in the **Outline SWMP (Document Reference 7.10)**, ensure that wastes will be responsibly managed in full adherence to local and national policy and legislation. This will be taken forward to a full SWMP as set out in the **Outline CoCP (Document Reference 7.4)**. Compliance with the **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**, which is secured by a DCO requirement. Dredging will be carried out in pursuant to the provisions of the Deemed Marine Licence,

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
					regular (potentially annual) reviews of the State of the UK Climate Report (Met Office) to review and understand any changes in climate trends.	contained within the **Draft DCO (Document Reference 3.1)**.
Operation Phase						
8.2	Carbon Capture Facility	Climate Variable: • Extreme precipitation events (flooding); Potential Impacts: • Flooding of assets resulting in loss or disruption of function and associated risks. • Deterioration of material structure and fabric. • Drainage infrastructure overwhelmed leading to surface water flooding. • Mobilisation of pollutants, affecting building materials. Climate Variable: • Extreme temperature events. Potential Impacts: • Changes in water temperature and availability of water for cooling may affect operation. • Greater demand for cooling. • Risk of fire and associated safety risks. • Faster rate of deterioration of materials from increase in UV	*Embedded Mitigation* Carbon Capture Facility • The Proposed Scheme incudes design and installation of a new drainage system within the Site. • The drainage design will be designed such that the rate of surface water run-off leaving the Site and entering the adjacent watercourse network is limited to the 1 in 100 year greenfield rate of 35.3 l/s. • Surface water storage will be provided by a below ground tanked system with capacity to cater for a 1 in 100 year plus climate change (+40% increase in rainfall intensity) event. • The flood level data includes allowances for climate change, in accordance with Environment Agency requirements, and this data these have been taken forward for the purposes of defining design levels for the Proposed Scheme. In respect of allowances for peak rainfall intensity (used to inform surface water drainage) the Proposed Scheme design these have been based upon a 40% uplift in rainfall intensity, as required by LBB. • All operational area will be covered with hardstanding to prevent any mobilisation of pollutants. • Maintenance of the Proposed Scheme will be the responsibility of the Applicant, and will involve routine, planned maintenance and system checks, as well as reactive maintenance and repairs.	**Negligible** to **Minor (Not Significant)**	See ID 8.1.	An **Outline Drainage Strategy (Document Reference 7.2)** has been submitted which includes these measures. The development of a full Drainage Strategy, in substantial accodance with this outline, is secured by a DCO requirement. The operational procedures, including maintenance, will be set out in an Operational EMP, which will be prepared prior to the Proposed Scheme commencing operation, which is secured by a DCO requirement. An **Outline EPRP (Document Reference 7.11)**, has been submitted which includes these measures. The development of a full EPRP(s), in substantial accordance with this outline, is secured by a DCO requirement. Detailed design stage will include wind modelling, which will be applied to the design specification.

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		radiation e.g., fading and brittleness. • Expansion of building joints compromising structural integrity leading to increase maintenance. <u>Climate Variable:</u> • Gales and high winds. • Storms. <u>Potential Impacts:</u> • Increase in wind loading on the stacks. • Damage from high winds and rain infiltration into surfaces and materials. • Increased maintenance requirements. • Potential for safety risks should structure become weakened. • Lightning strikes leading to power outages onsite and causing fires. <u>Climate Variable:</u> • Sea level rise. • Storm surge. • Storm tide. <u>Potential Impacts:</u> • Damage to infrastructure. • Reducing earthwork stability and hastening the deterioration of materials. • Power outages and threats to business continuity.	• The maintenance procedures will be set out in an Operational EMP, which will be prepared prior to the Proposed Scheme commencing operation. • The **Outline EPRP (Document Reference 7.11)** includes measures to manage extreme weather events and consequences such as risk of fire from overheating and flooding. • The design will be in accordance with the UK Building Regulations and BE EN codes. Where no BS EN code exists the Eurocodes and ISO standards will be adopted. The Site already carries out regular civil asset condition surveys via external consultants on framework agreement. The agreed survey frequency for the assets will be in line with the condition and deterioration rates observed onsite. • Design specifications to allow for climate change impact on ambient temperature. • The cooling study that has been undertaken to develop the cooling system design took into account climate change with the ambient temperature used within the model. Ambient temperatures to be also written into equipment specification for vendors. • No wind modelling has been undertaken at this stage and will be completed at detailed design stage. Structures will be adequately designed to allow for future worst case wind conditions. • Finished development platform and floor levels, as informed by **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**, would, where practicable. • Use of Sustainable Drainage System (SuDS). These are constructed / maintained in line with CIRIA SuDS Manual C753[18]. Any new drainage collection and distribution systems will be designed in accordance with UK Building Regulations and codes of Practice current at the time of design. These already include allowances for increased inflow due to climate change.			**Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**, compliance with which is secured by a DCO requirement. **The Design Principles and Design Codes (Document Reference 5.7)**, compliance with which is secured by a DCO requirement. Detailed design stage will include wind modelling, which will be applied to the design specification. A comprehensive earthing, bonding and lightning protection system shall be developed as part of the detailed design. Dredging will be carried out in pursuant to the provisions of the Deemed Marine Licence, contained within the **Draft DCO (Document Reference 3.1)**. A preliminary navigational risk assessment (**Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**), has been produced. This will be developed into a full NRA, compliance with which is secured by a DCO requirement. An **Outline Lighting Strategy (Document Reference 7.3)**, has been submitted which

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
8.3	Proposed Jetty	Climate Variable: • Extreme precipitation events (flooding). Potential Impacts: • Flooding resulting in loss or disruption of function and associated risks. • Deterioration of material structure and fabric. • Destabilisation or impact on the structure of Proposed Jetty. Climate Variable: • Extreme temperature events. Potential Impacts: • Faster rate of deterioration of materials from increase in UV radiation e.g., fading and brittleness. • Increase in thermal expansion of structure joints compromising structural integrity leading to increased maintenance. Climate Variable: • Gales and high winds. • Storms. Potential Impacts: • Increased maintenance requirements. • Destabilisation of structure due to lightning strike. • High winds may damage the Proposed Jetty.	The Proposed Jetty • The flood level data includes allowances for climate change, in accordance with Environment Agency requirements, and this data these have been taken forward for the purposes of defining design levels for the Proposed Jetty. • In respect of allowances for peak rainfall intensity (used to inform surface water drainage) the Proposed Scheme design these have been based upon a 40% uplift in rainfall intensity, as required by LBB. • The design will be in accordance with the UK Building Regulations and BE EN codes. Where no BS EN code exists the Eurocodes and ISO standards will be adopted. Regular civil asset condition surveys will be carried out in line with the condition and deterioration rates observed on Middleton Jetty. Proactive maintenance (outlined in the Operational EMP) to address any defects is planned. • Proposed Jetty is designed using conventional materials (concreate, steel) which are resilient to high temperatures. • An initial consideration of future potential increases in wind loading these have been taken into account within the design. However, wind loading on the Jetty elements including Catwalks and Access Trestle should and will be considered further at detailed design stage. • A comprehensive earthing, bonding and lightning protection system shall be developed as part of the detailed design. All parts of the earthing and lightning protection system shall be designed to withstand the prospective earth fault currents and transient voltages to which they will be exposed. • Periodic maintenance dredging will be undertaken to ensure the Proposed Jetty remains operational at all states of tide. Dredging will be managed pursuant to the provisions of the Deemed Marine Licence. • The Proposed Jetty's operational procedures will consider limits of uncontrollable factors to ensure safe and efficient travel, berthing, and loading operations. Where these thresholds are exceeded, operation will	**Negligible to Minor (Not Significant)**		includes these measures. The development of a full Lighting Strategy, in substantial accodance with this outline, is secured by a DCO requirement.

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		Climate Variable: • Sea level rise; • Storm surge; and • Storm tide. Potential Impacts: • Reducing earthwork stability and hastening the deterioration of materials.	cease until levels are back within acceptable tolerances will be determined. Such limits will include wind speed and direction, height of tide, tidal stream, and visibility. • Sea level rise that can affect the Proposed Jetty these have been assessed using UK Climate Projections database from the Met Office, using the 70th and 95th percentile data for RCP 8.5. Extreme water levels have been based on the TE2100 Plan[19]. • Deck elevations have been set such that the bottom of the platform will not be exposed to wave loads. With the top of deck elevation of the platform and all dolphins set at +10.90mCD. Calculated using the TE2100 2075 Water Level (mCD), the air gap required (m) and assumed typical structure depth. The water level is the most conservative estimate of the water level at the end of the design life of the structure, with a 1 in 100 year extreme event allowance. • Appropriate clearance is provided to enable the flood defences to be raised in line with the TE2100 plan requirements during the operational lifetime of the Proposed Scheme. • Proposed monitoring is detailed in **Chapter 19: Marine Navigation (Volume 1)** and in **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.1** and **6.3)**. Ancillary Infrastructure • Floodplain compensation and finished floor levels and equipment levels will be provided, as set out in **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**. • The surface water drainage design ensures that the rate of surface water run-off leaving the Site and entering the adjacent watercourse network is limited to the 1 in 100 year greenfield rate. • The flood level data includes allowances for climate change, in accordance with Environment Agency			
8.4	Ancillary Infrastructure	Climate Variable: • Change in annual average precipitation. • Extreme precipitation events. • Drought. Potential Impacts: • Increased surface run-off leading to surface water flooding and siltation. • Drainage infrastructure overwhelmed leading to surface water flooding. • Mobilisation of pollutants, affecting Ancillary Infrastructure. • Flooding of assets resulting in loss or disruption of function and associated risks. • Deterioration of material structure and fabric. • Windborne dust and debris clogging drainage channels and requiring clearing. • Flooding of the road. • Water ingress may damage electrical equipment leading to power loss.		**Negligible to Moderate (Not Significant)**		

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		• Damage of machinery. Climate Variable: • Change in annual average temperature. • Extreme temperature events; <u>Potential Impacts:</u> • Melting or deterioration of road surfaces. • Failure of security infrastructure and lighting due to overheating. • Reduction in the ability of the ground to conduct heat away from underground cables during high temperatures. • Faster rate of deterioration of materials from increase in UV radiation, e.g., fading and brittleness. • Overheating of electrical equipment increasing the risk of fire. • Expansion of materials resulting in damage or increased fatigue, structural integrity loss and increased maintenance. <u>Climate Variable:</u> • Gales and high winds. • Storms. <u>Potential Impacts:</u> • Increased maintenance requirements. • Destabilisation of structures due to lighting strike.	requirements, and this data these have been taken forward for the purposes of defining design levels. • In respect of allowances for peak rainfall intensity (used to inform design of surface water management infrastructure), the Proposed Scheme design these have been based upon a 40% uplift in rainfall intensity, as required by LBB. • Implementation of SuDS, i.e., interceptors and silt traps which will be emptied regularly to ensure flows of water, to avoid flooding. • All operational areas and access road will be covered with hardstanding to prevent any mobilisation of pollutants. • Further information is available in the **Outline Drainage Strategy (Document Reference 7.2)** in respect of pollution prevention matters. • The design, installation, commissioning, operation and maintenance of plant, drainage systems, equipment and machinery, including associated systems, will take into account Good Engineering Practice. • The current design of steel elements is based on sacrificial steel thickness to achieve the required design life; however, protective coating and Cathodic Protection will be considered as part of the detailed design. • Any new lighting for the Proposed Scheme will comply with the relevant design standards and therefore suitable to withstand temperature changes sufficient for their operational life span. • An **Outline Lighting Strategy (Document Reference 7.3)** has been prepared for the Proposed Scheme in accordance with relevant legislation and guidance in order to minimise effects from light intrusion, sky glow or glare. • A comprehensive earthing, bonding and lightning protection system shall be developed as part of the detailed design. All parts of the earthing and lightning protection system shall be designed to withstand the prospective earth fault currents and transient voltages to which they will be exposed.			

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		• Power loss. • Windborne dust and debris clogging drainage channels and requiring clearing. • Damage from high winds and rain infiltration into surfaces and materials. Damage to signage. <u>Climate Variable:</u> • Sea level rise. • Storm surge. • Storm tide. <u>Potential Impacts:</u> • Damage to infrastructure. • Reducing earthwork stability and hastening the deterioration of materials. • Power outages and threats to business continuity.	<u>The Mitigation and Enhancement Area</u> • Procedures for the maintenance of the Mitigation and Enhancement Area are set out in the **Outline LaBARDS (Document Reference 7.9)**. • The design provides innate climate resilience through: • vegetating exposed soils and controlling degradation through reduced grazing pressures. • re-wetting of grazing marsh soils by lifting water table locally. • attenuation for operation area and roof run-off, plus treatment before a controlled release into the grazing marsh ditch network. • additional volume for storage within the grazing marsh. • Suitable native planting with high diversity capable of adapting to levels of change. • Capturing rainwater from operational area and diverting into grazing marsh areas. • Improved access and management will reduce likelihood of fire and enable quicker response / safe escape. • Additional ditches proposed across the grazing marsh could potentially help to control / serve as fire breaks. <u>End users (operational staff)</u> • Should the area in the vicinity of the Site be inundated following a breach of the tidal flood defences, such that safe exit is not possible, safe refuge will be provided for operational staff/visitors within the administration block and other areas of the building which will be located above the 0.5% (1 in 200 year) AEP breach flood level. • The Proposed Scheme will provide suitable welfare facilities which meet good practice guidelines. *Additional Mitigation* Additional mitigation measures required for the Proposed Scheme include: • The Applicant will develop and implement a maintenance programme which includes inspection and			
8.5	**The Mitigation and Enhancement Area**	<u>Climate Variable:</u> • Changes in annual average precipitation. • Extreme Precipitation events (flooding). <u>Potential Impacts:</u> • Longer growing season, more vigorous vegetation growth within the Mitigation and Enhancement Area in spring and autumn without a vegetation management plan. • Flooding of the Mitigation and Enhancement Area. <u>Climate Variable:</u>		**Negligible to Minor (Not Significant)**		

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		• Extreme temperature events. <u>Potential Impacts:</u> • Shrinking and cracking of soils. • Increased dieback of vegetation/planting within the Mitigation and Enhancement Area. <u>Climate Variable:</u> • Sea Level Rise. • Storm surge. • Storm tide. <u>Potential Impacts:</u> • Flooding of the Mitigation and Enhancement Area.	clearance access routes particularly after storm or heavy rainfall events. • The detailed design for access roads will consider the potential for extreme temperature events and heatwaves and ensure that the design specification is sufficient for such temperatures. An inspection and planned maintenance regime will be implemented to ensure access roads are periodically inspected, especially after any extreme temperature events, to monitor and repair any damage; • The detailed design will specify coatings/cladding to minimise corrosion/ deterioration on plant and buildings in case of wind and storm events. The detailed design for buildings will ensure there is adequate ventilation and heating to prevent mould growth. • Existing power generation units and new electrical equipment will be monitored to ensure overheating risk and potential fire risk are managed. Installation of new electrical equipment will take into account the location and place the equipment in areas protected from direct sunlight. If appropriate, mechanical cooling measures will be implemented.			
8.6	**End users (operational staff)**	<u>Climate Variable:</u> • Extreme Precipitation events (flooding). <u>Potential Impacts:</u> • Access routes may be impeded by flooding. • Damp buildings can lead to mould growth resulting in health issues. • Injuries to workforce. <u>Climate Variable:</u> • Extreme temperature events. <u>Potential Impacts:</u> • High temperatures can cause discomfort, alongside impacting concentration and productivity of staff. • Injuries to workforce.		**Minor to Moderate (Not Significant)**		

ID	Sensitive Receptor	Climate Variable / Potential Impacts	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
		Climate Variable: • Gales and high winds. • Storms. Potential Impacts: • Access routes for end users may be impeded by storm debris. Climate Variable: • Sea Level Rise. • Storm surge. • Storm tide. Potential Impacts: • H&S risks due to disruption of services.				

Table 9: Greenhouse Gases - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
9.1	Global Atmosphere	GHG Emissions	*Embedded Mitigation* • Environmental mitigation required during construction will be recorded in the **Outline CoCP (Document Reference 7.4)**. The **Outline CoCP (Document Reference 7.4)** provides a tool to ensure the successful management of the likely environmental effects as a result of construction activities. **A Framework CTMP (Document Reference 7.7)** has also been prepared**.** These plans include for the following principles: • Construction Contractor(s) will be expected to ensure optimal performance of plant and equipment through correct and efficient operation, maintenance, and servicing of vehicle fleet to minimise emissions. Options will be considered for using efficient low emission plant, equipment and vehicles where possible (i.e. those using electricity or lower carbon fuels). • The Proposed Scheme will be designed to minimise material consumption and waste generation, as far as reasonably practicable. • Depending on design specification requirements the Proposed Scheme will consider options to specify construction materials with lower embodied carbon (e.g. using steel with a higher than average recycled content or considering material alternatives). • Transportation of materials will be optimised to minimise GHG emissions, including sourcing construction materials from local suppliers, making use of local waste management facilities where practicable and ensuring the construction programme considers requirements for onsite storage of materials and waste. • The Proposed Scheme will take into account the potential carbon emissions and removals within the design of the onsite Mitigation and	**Minor Adverse (Not Significant)**	Process emissions arising from operation of the Proposed Scheme will be managed and regulated under an Environmental Permit to be applied for from the Environment Agency, which may identify a requirement to monitor and report on GHG emissions. Beyond the measures to be included in the **Outline CoCP (Document Reference 7.4)**, no monitoring of GHG effects is expected to be required.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline SWMP (Document Reference 7.10)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt. The development of the full SWMP(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Enhancement Area and offsite BNG Opportunity Area, including opportunities to maintain natural habitats where possible and minimise impacts during construction. • Construction waste will be recycled or reused where practicable to avoid disposal to landfill, including the reuse of excavated arisings on the Proposed Scheme, where suitable. Further embedded measures on material reuse and recycling are outlined in **Chapter 16: Materials and Waste (Volume 1)** in the **Environmental Statement (Document Reference 6.1)**, which will result in reductions in construction waste emissions and also embodied GHG emissions from materials where reuse of the material can be favoured onsite. *Design Evolution:* • Potential measures to further reduce GHG emissions through the ongoing design of the Proposed Scheme and to be secured through requirement of any DCO granted could include: • detailed design optimisation to reflect the PAS 2080:2023[20] carbon reduction hierarchy; • reducing the requirement for construction materials (designing out material redundancy) where practicable; • substituting construction elements for lower carbon alternatives where practicable; • considering the specification of materials and products with reduced embodied GHG emissions including through material substitution, recycled or secondary content and from renewable sources; • considering the sustainability credentials of material suppliers and construction Contractor(s) and, where practicable, taking into account their policies and commitments to reduction of GHG emissions, including embodied emission in materials; • designing, specifying and constructing the Proposed Scheme with a view to maximising the operational lifespan and minimising the need for			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			maintenance and refurbishment (and all associated emissions); • designing, specifying and constructing the Proposed Scheme with a view to maximising the potential for reuse and recycling of materials/elements at the end-of-life stage; and • considering opportunities to minimise operational energy use, including the specification of efficient plant and ancillary infrastructure. *Additional Mitigation:* Measures to reduce GHG emissions during the construction of the Proposed Scheme are set out in an **Outline CoCP (Document Reference 7.4)** and will be set out in the full CoCP(s). The **Outline CoCP (Document Reference 7.4)** will provide a review, monitoring and audit mechanism to determine the effectiveness of, and compliance with, environmental control measures, which include the consideration of manufacture, transport and supply of materials. Measures incorporated into the **Outline CoCP (Document Reference 7.4)** will include; • use of efficient construction processes, such as design for manufacture and assembly; • development and implementation of a full SWMP(s) to be in substantial accordance with the **Outline SWMP (Document Reference 7.10)**. This is secured by a requirement in the **Draft DCO (Document Reference 3.1)**; • development and implementation of a Materials Management Plan (MMP) in accordance with the **Outline CoCP (Document Reference 7.4)**; • specification of materials and products with reduced embodied GHG emissions including through material substitution, recycled or secondary content and from renewable sources; • recovery and reuse/recycling of site arisings (ideally, onsite); and			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• selection and engagement of materials suppliers and construction Contractor(s) taking into account their proximity to the Proposed Scheme, as well as policies and commitments to reduction of GHG emissions, including embodied emission in materials.			
Operation Phase						
9.2	Global Atmosphere	GHG Emissions	*Embedded Mitigation* • The inherent purpose of the Proposed Scheme is to capture CO_2 generated by Riverside 1 and Riverside 2 for permanent storage, avoiding those GHG emissions being released to the atmosphere and aiding decarbonisation of waste management services and electricity generation. • To minimise energy consumption, the design of the Proposed Scheme will include selection of high energy efficiency capture technology, high efficiency electric motors and the use of variable frequency drives for pumps. • To maximise operational efficiency, the Proposed Scheme will incorporate a Back Pressure Turbine and Generator to maximise the extraction of energy within the steam and make it suitable for use in the Solvent Regeneration System. • Onsite regeneration of solvent will maximise reuse of this material and reduce embodied emissions associated with procuring fresh solvents for use in the process. • The carbon capture process produces heat, which is typically wasted. The Proposed Scheme will incorporate a Heat Recovery and Heat Transfer System so that this energy can be redirected into a district heating network, such as the Riverside Heat Network (currently under development). • A Heat Transfer Station will be installed as the interface between the Proposed Scheme and the Riverside Heat Network, which will reduce dependence on alternative fossil fuel sources for	**Beneficial (Significant)**	Monitoring of GHG emissions will form part of the Environmental Permit.	Environmental Permit

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			generating heat and consequently the associated GHG emissions. • The design of the Proposed Scheme will be undertaken with a view to maximising the lifespan of operational components, minimising the need for maintenance and refurbishment (thus reducing the frequency of release of associated GHG emissions). • Process emissions arising from operation of the Proposed Scheme will be managed and regulated under an Environmental Permit which will be applied for from the Environment Agency. • The Proposed Scheme will be providing habitat mitigation, compensation and enhancement within the Mitigation and Enhancement Area and the BNG Opportunity Area. • Embedded mitigation measures for operation include maximising efficiencies in the use of materials for the Proposed Scheme. • Reference is also made to the **Planning Statement (Document Reference 5.2)**, which provides information on how carbon emissions have been accounted for in the development of the Proposed Scheme to date. *Additional Mitigation* Relevant design, mitigation, enhancement measures and improvements are described within the **Design Approach Document (Document Reference 5.6)**. The **Design Principles and Design Code (Document Reference 5.7)** are commitments which will govern the of the Proposed Scheme during the detailed design stage. The **Outline LaBARDS (Document Reference 7.9)** details the soft landscaping strategy including new and enhanced planting, secured through a requirement in the **Draft DCO (Document Reference 3.1)**. The **Design Principles and Design Code (Document Reference 5.7)** and the soft landscaping strategy outlined within the **Outline LaBARDS**			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			(Document Reference 7.9) and the **Outline Lighting Strategy (Document Reference 7.3)** are considered to be embedded mitigation for the purposes of this TVIA and include: **<u>Design Principles and Design Code</u>** • Improve the local public footpath connections to deliver a recreation route linking Thamesmead to the Crossness LNR including local enhancements for wayfinding and information. • Provide a visually attractive environment that secures a sense of belonging and personal security that is of consistent quality in terms of open space, natural habitat access, landscape design and architectural quality. • Provide planted boundaries appropriate to local character around the operation site to support the natural character of the Crossness LNR and an organised interface with Norman Road. • Control the visual appearance of the operational area in views from adjoining areas to deliver a coherent appearance. • Organise built form and material selection to deliver a visually coherent design and to reduce the impacts of the Proposed Scheme. • Building massing and structure height should step down from high in the north to low in the south, reflecting the transition from the industrial river corridor to local community. • Lower-level development to the south should be more fractured allowing some intervisibility between buildings responding to the interface with the community. **<u>Outline LaBARDS (Document Reference 7.9)</u>** • Creation of landscape buffer along the boundaries of the Site to minimise the effects on visual amenity. In particular a substantial landscape buffer along the western Site Boundary is proposed to minimise the effects on visual amenity			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			of users of Crossness LNR and local PRoW, and to respond positively to local policy. • Locating the permanent diversion of FP2 into the landscape buffer along the western Site Boundary to minimise the impact on visual amenity of users of this PRoW. **<u>Outline Lighting Strategy (Document Reference 7.3)</u>** • Consideration of the lighting design to avoid excessive lighting levels and to reduce adverse effects on the surrounding environment. The **Outline Lighting Strategy (Document Reference 7.3)** outlines design commitments for lighting, compliance with which is secured through the development of a full lighting strategy in substantial accordance with that outline, pursuant to a requirement within the **Draft DCO (Document Reference 3.1)**.			

Table 10: Population, Human Health and Land Use - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
10.1	Munster Joinery UK Limited	Effects on Terrestrial Businesses	*Embedded Mitigation* The full CoCP will provide that, with the exception of Munster Joinery, access to adjacent terrestrial businesses will be maintained throughout the construction phase, this includes the access to Asda Belvedere Distribution Centre, Lidl Regional Distribution Centre and Iron Mountain Record Storage Facility. Signage to advertisee that businesses are open and operating as normal to be provided. Access to the River Thames for recreational users will be maintained throughout the construction phase, in accordance with the measures set out in the **Outline CoCP (Document Reference 7.4)**. The full CoCP(s) will provide (or report on the same if this has already happened at the time that the full CoCP(s) is sought to be approved) that engagement must take place with the graziers who currently graze horses within the Site Boundary to seek to agree an approach to any temporary or permanent relocations required, and to the management of the return to site of horses once construction of the Proposed Scheme is complete. The full CoCP(s) will provide that works will be screened to minimise adverse effects on the amenity value and enjoyment of the Accessible Open Land. The design will ensure that routes used by walkers and cyclists (including PRoW, long distance walking routes and NCN routes) will, where practicable, remain open and accessible to users during construction. Where this is not practicable (such as FP2), suitable temporary diversions will be identified. Wherever practicable the England Coast Path (FP3/NCN1) will remain open. During specific construction activities for the Proposed Jetty limited closures of the England Coast Path (FP3/NCN1/FP4) may be required, the Contractor(s) will manage closures in the following priority order: • using a banksman to provide safe escorted access across the construction area, keeping waiting times to less than: 10 minutes during peak times; and 30 minutes during off-peak times;	**Major Adverse (Significant)**	The performance of PRoW improvements and the Mitigation and Enhancement Area will be monitored pursuant to the **LaBARDS (Document Reference 7.9)**.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. Development of the full CoCP(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The embedded mitigation with be secured through design features of the Proposed Scheme included in the Application. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO application and outlines the proposals for the Mitigation and Enhancement Area of the Proposed Scheme. Development of the full LaBARDS, in substantial accordance with the outline, is secured through a requirement
10.2	Iron Mountain Records Storage Facility			**Minor Adverse (Not Significant)**		
10.3	Asda Belvedere Distribution Centre			**Minor Adverse (Not Significant)**		
10.4	Travelodge London Belvedere			**Negligible (Not Significant)**		
10.5	Snap Fitness			**Negligible (Not Significant)**		
10.6	The Morgan			**Negligible (Not Significant)**		
10.7	Starbucks Coffee Drive Thru			**Negligible (Not Significant)**		
10.8	Lidl Belvedere Regional Distribution Centre			**Minor adverse (Not Significant)**		
10.9	Tap'in 3PL Ltd			**Negligible (Not Significant)**		
10.10	HS Carlsteel Engineering Ltd			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
10.11	Freshasia Foods Ltd.		• nighttime closures, between 23:00 and 05:00 (non-peak times: 23:00 - 05:00 and peak times 07:00 - 19:00) when the England Coast Path (FP3/NCN1/ FP4) is infrequently used; and • in occasional situations, where the above options are not practicable, a signed diversion route will be provided. The diversion route will be of a hard surface and will be suitable for all users. Proposed temporary diversion routes will be set out in the full CoCP(s). The full CoCP(s) will also provide that clear signage and directions for any alternative routes and appropriate alternative diversions would be provided and diversions clearly publicised to maintain access. The full CoCP(s) will provide that some areas of the Accessible Open Land may need to be closed to the public in phases during the construction phase, but that these closures would seek to be minimised both in terms of the amount of space closed off and how long in time it is closed off. The full CoCP(s) would set out proposals for how such closures will be notified to the public and the Friends of Crossness LNR. The full CoCP(s) will also provide details of any measures that will be undertaken to ensure that impacts to pedestrians and cyclists are minimised (and that they are kept safe) during the creation of any accesses from Norman Road to the Carbon Capture Facility and during any oversailing of the highway during construction. The Applicant will reach an agreement with the grazier on an appropriate temporary location arrangement for the horses during the construction phase, as required. Further environmental mitigation measures required during construction that are relevant to Population, Human Health and Land Use are recorded in **Table 1, Table 2**, **Table 6, Table 7, Table 11, Table 14, Table 15** and **Table 16** of this document. *Additional Mitigation* • The public will be informed of the nature, timing and duration of particular construction activities and the duration of the construction works by newsletters/other publications or advertisements. • The appointed Contractor(s) will prepare a Community Engagement Plan (to be secured as part of the **Outline CoCP (Document Reference 7.4)**) for the construction phase of the Proposed Scheme. The Plan will provide the overall approach to community engagement and a detailed guide to the enquiries and complaints procedure. • Ongoing engagement with the local community and businesses (including Munster Joinery UK Limited, Friends of Crossness Nature Reserve, Sustrans, local walking	**Negligible (Not Significant)**		of the **Draft DCO (Document Reference 3.1)**.
10.12	Intersped Logistics (UK) Limited			**Negligible (Not Significant)**		
10.13	Howdens Joinery			**Negligible (Not Significant)**		
10.14	Ctr Group			**Negligible (Not Significant)**		
10.15	Ford Dagenham	Effects on Businesses that rely upon access to the River Thames		**Negligible (Not Significant)**		
10.16	Thames Water – Crossness Water Treatment Works			**Negligible (Not Significant)**		
10.17	England Coast Path	Effects on Walkers and Cyclists		**Moderate Adverse (Significant)**		
10.18	NCN1			**Moderate Adverse (Significant)**		
10.19	FP1			**Minor Adverse (Not Significant)**		
10.20	FP2			**Moderate Adverse (Significant)**		
10.21	FP3			**Moderate Adverse (Significant)**		
10.22	FP4			**Moderate Adverse (Significant)**		
10.23	FP242			**Minor Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
10.24	Accessible Open Land - Crossness LNR	Effects on Terrestrial Recreation	and cycling groups, local recreational groups, Asda Belvedere Distribution Centre and Iron Mountain Record Storage Facility) through that Plan would provide information which may help to reduce uncertainty and stress relating to the potential effects of the Proposed Scheme. • Engagement with the graziers will continue to be sought and undertaken. • Clear signage and instructions if banksmen are in operation and clear directions for any alternative routes and appropriate alternative diversions would be provided. Measures such as banksmen and diversions would be clearly publicised. • Signage to advertise that businesses are open and operating as normal to be provided.	**Moderate Adverse (Significant)**		
10.25	Land used by graziers			**Minor Adverse (Not Significant**		
10.26	Recreational users	Effects on Recreational Users of the Thames		**Negligible Minor Adverse (Not Significant)**		
10.27	Erith Rowing Club			**Negligible (Not Significant)**		
10.28	Erith Yacht Club			**Negligible (Not Significant)**		
10.29	Thamesmead fishing mark			**Negligible (Not Significant)**		
10.30	Erith Pier fishing mark			**Negligible (Not Significant)**		
10.31	Local Population	Effects on Human Health		**Negligible (Not Significant)**		
10.32	Local Population	Effects on Mental health and wellbeing		**Negligible (Not Significant)**		
Operation Phase						
10.33	Ford Dagenham	Effects on Businesses that rely upon access to the River Thames	*Embedded Mitigation* Based on a preliminary operational capacity assessment, up to five marine vessels will call at the Proposed Jetty each week to collect and transport LCO_2 to meet the annual throughout.	**Negligible (Not Significant)**	The performance of PRoW improvements and the Mitigation and	DCO requires permanent diversion route to be agreed prior to stopping up of existing. An **Outline LaBARDS (Document Reference 7.9)** accompanies this DCO
10.34	Thames Water – Crossness Water Treatment Works			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
10.35	England Coast Path	Effects on Walkers and Cyclists	The Proposed Scheme is expected to be operational 24 hours per day and 365 days per year. The Proposed Scheme will operate concurrently with Riverside 1 and Riverside 2 (once operational). The proposals for the Mitigation and Enhancement Area and wider improvements and procedures for the maintenance of the Mitigation and Enhancement Area are set out in the **Outline LaBARDS (Document Reference 7.9)**. The Proposed Scheme will generate a small number of vehicle movements during the operation phase. The **Outline EPRP (Document Reference 7.11)** sets out the outline contingency plans in the event that an emergency event occurs onsite (including within the River Thames). The start and end points of permanent PRoW diversions are shown on the **Access and Rights of Way Plans (Document Reference 2.4)**. The **Outline LaBARDS (Document Reference 7.9)** sets out proposals for improvements of the PRoW, the Mitigation and Enhancement Area and outside of the Site Boundary (the latter to be delivered via a Section 106 Agreement with LBB). Further environmental mitigation measures required during construction that are relevant to Population, Human Health and Land Use are recorded in **Table 1, Table 2**, **Table 6, Table 7, Table 11, Table 14, Table 15** and **Table 16** of this document. *Additional Mitigation* Ongoing engagement with local communities and other stakeholders would provide information which may help to reduce uncertainty and stress relating to the potential effects of the Proposed Scheme. Once operational the Proposed Scheme could consider some of the following enhancement measures: • inclusion of a bike hub that includes safe storage and bike tools; • improvements to PRoW (including surfaces and widths) to ensure they are accessible for all user groups; • inclusion of/updates to existing street furniture including benches, bins and signage; and • new information boards detailing the Proposed Scheme and other points of interest.	**Negligible (Not Significant)**	Enhancement Area will be monitored pursuant to the **Outline LaBARDS (Document Reference 7.9)**.	application and outlines the proposals for the Mitigation and Enhancement Area and wider access improvements. The development of the full LaBARDS(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline EPRP (Document Reference 7.11)** accompanies this DCO application and outlines the operational phase emergency preparedness and response planning that would be required to be adopted during the operation phase of the Proposed Scheme. of the Proposed Scheme. The development of the full EPRP(s) is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
10.36	NCN1			**Negligible (Not Significant)**		
10.37	FP1			**Minor Adverse (Not Significant)**		
10.38	Permissive paths and way marked circular active routes			**Minor Beneficial** **(Not Significant)**		
10.39	FP2			**Minor Adverse (Not Significant)**		
10.40	FP3			**Minor Adverse (Not Significant)**		
10.41	FP4			**Minor Adverse (Not Significant)**		
10.42	FP242			**Negligible (Not Significant)**		
10.43	Accessible Open Land	Effects on Terrestrial Recreation		**Minor Adverse effect (Not Significant)**		
10.44	Land used by graziers			**Negligible to Minor Adverse (Not Significant)**		
10.45	Recreational users	Effects on Recreational Users of the Thames		**Negligible (Not Significant)**		
10.46	Erith Rowing Club			**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
10.47	Erith Yacht Club			**Negligible (Not Significant)**		
10.48	Thamesmead fishing mark			**Negligible (Not Significant)**		
10.49	Erith Pier fishing mark			**Negligible (Not Significant)**		
10.50	Local Population	Effects on Human Health		**Negligible (Not Significant)**		
10.51	Local Population	Effects on Mental health and wellbeing		**Negligible (Not Significant)**		

Table 11: Socio-economics - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
11.1	Economic Receptors	Employment Generation	*Embedded Mitigation* The Applicant would seek to encourage the Contractor to recruit locally wherever practicable. Site security arrangements are in line with the Construction (Design and Management) Regulations 2015 with appropriate levels of security (staff/ CCTV) appointed and fencing erected. Site security arrangements will be in line with the Construction (Design and Management) Regulations 2015[21] with appropriate levels of security (staff/ CCTV) appointed and fencing erected during the construction phase. Measures that relate to the construction activities in the River Thames prior to the commencement of construction as are described in **Table 15**. *Additional Mitigation:* Not applicable.	**Minor Beneficial (Not Significant)**	No monitoring of socio-economics effects is considered to be proportionate or to be required.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme and includes information on security arrangements. The development of the full CoCP(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
11.2		GVA Generation		**Minor Beneficial (Not Significant)**		
Operation Phase						
11.3	Economic Receptors	Employment Generation	*Embedded Mitigation* The Applicant would recruit locally, wherever practicable, and enable access to training and career development. A Skills and Employment Plan will be prepared prior to the Proposed Scheme commencing operation and secured by DCO requirement; and This plan would set out how the processes used to recruit and manage staff to work at the Proposed Scheme would be demonstrably fair and offer equal opportunities to all. The Applicant would continue to provide funding and support to activities relevant to the local	**Negligible (Not Significant)**		A Skills and Employment Plan is required prior to the Proposed Scheme commencing operation and secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The Skills and Employment Plan will set out how the processes used to recruit and manage staff to work at the Proposed Scheme would be demonstrably fair and offer equal opportunities to all. Security arrangements are set out in the Operational EMP, which would be prepared prior to the Proposed Scheme
11.4		GVA Generation		**Negligible (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			community in Bexley, such as the Community Eco Challenge (part of the Bexley Eco-Fest) which offers prizes for the most engaging, innovative and inspiring eco-friendly upgrades people have made to their homes. Although crime and safety has been scoped out of the EIA, the following mitigation measures would be implemented to ensure that significant impacts can be avoided: Appropriate levels of security (staff/CCTV) will be implemented, likely to include controlled entry automated gate car park access barrier, lighting, and fencing and repairment. Security arrangements will be set out in an Operational EMP, which would be prepared prior to the Proposed Scheme commencing operation and secured by DCO requirement. *Additional Mitigation* Not applicable.			commencing operation and secured by **Draft DCO (Document Reference 3.1)**.

Table 12: Materials and Waste - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
12.1	Material resources	Consumption of material resources	*Embedded Mitigation* The full CoCP, the Materials Management Plan or the full Site Waste Management Plan (as appropriate) will provide that/for: • the Contractor(s) will reuse excavated arisings on the Proposed Scheme where suitable. If not suitable, it will be taken offsite for reuse, unless circumstances dictate it must be disposed to landfill; • the dredged arisings will be managed in accordance with relevant legislation and will be disposed of offsite (via vessel and only if dredged arisings are deemed suitable for this disposal method and conform with the permits for disposal sites). The removal of the dredged arisings will be undertaken by an appropriately licenced waste carrier. The removal of the dredged arisings will be undertaken by an appropriately licenced waste carrier. if any arisings are identified as contaminated, the removal of the dredged arisings will be undertaken and managed by an appropriately licensed waste organisation; • all surplus steel used for reinforcement (rebar) and sheet piling during construction will be taken offsite for recycling; and • the following actions to be applied to the demolition of Munster Joinery: – Steel framework from the demolition of Munster Joinery may be suitable for reuse on the Proposed Scheme. If not suitable, it will be taken offsite for recovery or recycling. – Profiled metal sheeting (from the walls and roof) and glass (windows) of Munster Joinery are not suitable for reuse on the Proposed Scheme, these items will be taken offsite for recovery or recycling.	**Slight Adverse (Not Significant)**	A full SWMP(s) will be prepared by the Contractor(s) (in substantial accordance with the **Outline SWMP (Document Reference 7.10)**) and will include management and monitoring of Site wastes to reduce associated impacts, including potential harm to the environment during the construction phase. A MMP will also be produced by the Contractor(s) and used to monitor the maximum reuse of both natural soils and made ground (contaminated or otherwise), see **Table 13**.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. Development of the full CoCP(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline SWMP (Document Reference 7.10)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt. Development of the full SWMP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. A MMP is required prior to construction commencing (post-consent), which will be developed alongside or as part of the full CoCP(s), see **Table 13**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			– The existing concrete yard slab will be lifted and crushed onsite for reuse; any metal rebar within the concrete yard slab will be removed and taken offsite for recycling. – The drainage pipework is not suitable for reuse on the Proposed Scheme and will be taken offsite for recycling, unless circumstances dictate it must be disposed to landfill. – Existing palisade fencing will be retained onsite during the construction phase and the potential to align new fencing to this existing fencing is currently being explored. Any fencing that is to be removed will be taken offsite for recycling. – The electronic gate will be retained onsite for the duration of the construction phase. This may be retained onsite following construction if suitable to meet security requirements. – Existing galvanised steel wheel guides and ram protection bollards will be removed and taken offsite for recycling. *Additional Mitigation* The following best practice design and construction methods (outside of the formal DCO planning regime) should be pursued, where practicable: • the specification of recycled and secondary content in imported materials (such as earthworks, aggregate, concrete and asphalt), is set out during detailed design; • careful estimation and ordering of the material needed on Site at any given time to be undertaken, to minimise the likelihood of surplus materials. This will also reduce the risk of material being stored on Site for long periods of time with the risk of damage or decay; • maximising where reasonably practicable the use of offsite construction and pre-fabrication methods to encourage a process of assembly rather than construction;			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• sourcing where reasonably practicable reusable plant, assets, and other aspects from local reuse networks or locally decommissioned projects to maximise use of secondary materials and to minimise transport mileage; • seeking to lease plant, assets, and other aspects, where reasonably practicable, which can then be returned to the supplier for reuse, rather than to procure new components which then have to be sold, recycled or disposed when no longer required; • the capture and communication of actions already undertaken (or planned) within the design for deconstruction and disassembly, to encourage reuse and recycling at the assets' end of life. For example, consideration of material passporting to capture and retain information concerning the composition of materials and plant, with instructions on how these can be decommissioned, reused, recovered or recycled; and • identifying opportunities to promote materials and products that afford higher sustainability performance than typical industry standards e.g., closed loop plasticised cable ducting; low carbon materials (timber), or technology that is powered through renewable energy sources. Additionally, the measures set out in the **Outline SWMP (Document Reference 7.10)** ensure that wastes will be correctly segregated to maximise recycling. Wastes will be responsibly managed in full adherence to local and national policy and legislation. The Site Waste Management Plan will be prepared in substantial accordance with the **Outline SWMP (Document Reference 7.10)**. A Materials Management Plan (MMP) will also be prepared prior to construction commencing (post-consent).			
12.2	Landfill void capacity	Disposal and recovery of waste	*Embedded Mitigation* See ID 12.1. *Additional Mitigation* • The Contractor(s) will develop and implement a full SWMP(s) (to be prepared in substantial accordance with the **Outline SWMP (Document Reference 7.10)**) and	**Slight Adverse (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			MMP (to be prepared prior to commencement of construction of the Proposed Scheme), to drive performance in the highest tiers of the Waste Hierarchy, thereby maximising recovery, reuse and recycling. As a requirement of the MMP, testing of Site arisings will be a critical step in validating suitability for reuse in different structural and non-structural applications. • The full SWMP will report on progress and/or set out how the Proposed Scheme will seek to progress the following matters: – identifying possible enhancement and other opportunities to reduce waste through collaboration and regional synergies with third parties that are able to valorise wastes into new products; – engaging with local third parties, such as educational establishments, to divert surplus or spent materials into use elsewhere as supplies in local projects or as use in college courses. This will move waste up the hierarchy from recycling to reuse; and – consideration, where suitable and reasonably practicable, use of small-scale technologies to segregate treat or valorise wastes onsite or offsite, such as onsite composters for organic materials. • The full CoCP(s) will provide that: site arisings will be suitably stockpiled to maximise reuse. Stockpiles will be designed to minimise quality degradation, damage and loss of resource: – Soil and stockpiles will not be located within 10m of surface waterbodies or drainage lines without appropriate cut-off features or flow barriers.			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			– Stockpiles will be appropriately managed through use of tarpaulins and jute matting to mitigate release of sediment load, and damping down exposed surfaces using water spray.			
Operation Phase						
12.3	Material resources	Consumption of material resources (amine-based solvents)	*Embedded Mitigation* The Proposed Scheme will also be required to give priority to the recovery of wastes within the Riverside 1 and Riverside 2 developments, before considering external facilities. The operational procedures, including maintenance, will be set out in the Operational EMP, which will be prepared prior to the Proposed Scheme commencing operation. *Additional Mitigation* Mitigation measures will include the use of existing onsite waste prevention, minimisation and management processes and procedures to drive good practice behaviour and contracts, to maximise action in the highest tiers of the Waste Hierarchy and adherence to the proximity principle. Circular Economy practices will be identified and considered to design out wastes, reduce wastes and to divert materials from landfill, into other productive uses. Examples of mitigation measures that will be considered to reduce operational materials and operational waste may include the following: • the Applicant will engage early with Contractor(s) to identify opportunities to move wastes up the hierarchy through, for example, valorising of municipal and industrial wastes into new and valuable materials using collaboration and regional synergies; • exploring opportunities to move the treatment of hazardous wastes up the hierarchy from landfill to recovery or recycling once compositions and tonnages are known. In example, the Applicant have modelled the significance of impacts of operational wastes by considering the treatment of materials within energy from	**Slight Adverse (Not Significant)**	Operational waste tonnages will be monitored on a monthly basis using data provided by Waste Contractor(s). This data will demonstrate the composition and tonnages of material. This will be used to create a baseline of waste arisings for year one, and to then support the identification and development of additional efforts that move wastes up the waste hierarchy. Waste arisings will be recorded and analysed on a monthly basis or at a frequency agreed with the waste Contractor(s). The Operational EMP will outline a mechanism to collate all waste arisings data across all operations of the Proposed Scheme and will demonstrate the fate of operational wastes, e.g. reuse and recycling routes, waste treatment routes or disposal routes.	The Operational EMP (prepared prior to the Proposed Scheme becoming operational) will ensure that adverse effects are avoided/reduced where practicable. This is required by a requirement of the **Draft DCO (Document Reference 3.1)**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			waste recovery plants (e.g., amine-based solvents) or landfill sites. Once the composition and tonnages are better known, the Applicant will explore opportunities to move these wastes up the hierarchy using alternative recovery or recycling methods including prioritisation of recovery using facilities on site at Riverside 1 and Riverside 2; • ensuring that consumables and other materials include a high level of recycled and secondary content where technically and economically feasible; • careful estimation and ordering of the operational material needed onsite at any given time to minimise the likelihood of surplus materials. This will also reduce the risk of material being stored onsite for long periods of time, with a risk of damage or decay; • source reusable leased plant, assets and other aspects for temporary periods which can then be returned to the supplier for reuse, rather than to procure new components which then have to be sold, recycled or disposed when no longer required; • the Applicant will engage with suppliers to identify opportunities to procure materials and supplies that afford higher sustainability performances than typical industry standards; • the Applicant will engage with suppliers to ensure that, where feasible, procurement agreements include takeback schemes wherein suppliers are obliged to take back any packaging as well as surplus or spent materials; • the Applicant will engage with local third parties, such as construction organisations, reuse networks and educational establishments, to divert suitable waste materials into use as supplies for local projects or into use within local college courses. This will move wastes up the hierarchy from recycling to reuse; and • the Applicant will develop a range of targets that seek to reduce waste arisings across the Proposed Scheme. The exact design, and potential impact of these targets, is not			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			known at this point in time. Operational wastes may change in volume or composition should targets be developed and implemented.			
12.4	Landfill void capacity and Energy from Waste facility permitted capacity.	Disposal and recovery of waste	*Embedded Mitigation* See ID 12.3. *Additional Mitigation* See ID 12.3.	**Neutral or Slight Adverse (Not Significant)**		

Table 13: Ground Conditions and Soils - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
13.1	Site users and staff (excluding construction staff)	Effects on Site users, staff and construction staff from potential contamination within the underlying soils/groundwater.	*Design* As part of the detailed design of the Proposed Scheme ground stability hazards will be assessed as part of a Geotechnical Risk Register. The Phase 1 Contaminated Land Preliminary Risk Assessment (see **Appendix 17-1: Preliminary Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**) summarises potential ground stability hazards that have been identified at the Site. *Embedded Mitigation* Above and beyond the pollution prevention plan and surface water management plan referred to elsewhere in this document, the full CoCP(s) will provide for the following measures to mitigate potential impacts to ground conditions and soils. General good construction working practices to be implemented such as dust suppression, including potentially contaminated dust, (damping down), windbreak netting around excavations and/or perimeter fencing, covering stockpiles with tarpaulins, wheel washing and road sweeping to prevent local residents and employees in the vicinity of the earthworks from being exposed to windblown dusts, vapours and asbestos fibres. Appropriate stockpile segregation, locations and containment measures to be implemented to minimise the exposure of surface water and groundwater from	**Neutral (Not Significant)**	Whilst monitoring would be carried out in accordance with the Piling Risk Assessment, Materials Management Plan, Earthworks Specification and/or Remediation Strategy (as appropriate) no further monitoring of ground conditions and soils effects is considered to be proportionate or to be required. Depending on information gathered through the ground investigation, monitoring of groundwater and surface water may be recommended before construction commences, during construction works and post-construction. Should contamination be identified which is considered to pose a risk to sensitive receptors then remediation will be undertaken, pursuant to DCO Requirement.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. Development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The **Outline CoCP (Document Reference 7.4)** requires a, MMP and Earthworks Specification to be developed alongside or as part of the full CoCP(s). **Draft DCO (Document Reference 3.1)** requires Piling Risk Assessment to be carried out. Deemed Marine Licence in **Draft DCO (Document Reference 3.1).** GI strategy secured by DCO requirement. The **Outline Drainage Strategy (Document Reference 7.2)** details how new drainage will capture surface run-off once operational.
13.2	Construction staff					
13.3	Third party neighbours	Potential effects on adjacent third-party neighbours from potential contamination within the underlying soils during construction activities.		**Neutral (Not Significant)**		
13.4	Groundwater within the Secondary Undifferentiated Aquifers and Secondary A Aquifers	Potential effects on controlled waters from contamination within the underlying soils/groundwater.		**Neutral (Not Significant)**		
13.5	Groundwater within the Principal Aquifer			**Neutral (Not Significant)**		
13.6	Surface waters			**Neutral (Not Significant)**		
13.7	Below ground services and	Potential effects associated with		**Neutral (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	building materials	construction activities impacting below ground services and building structures.	contaminated run-off and local neighbours from windblown dusts, vapours and asbestos fibres. A protocol for managing unexpected ground contamination that may be encountered during construction would be implemented. Construction staff to be required to wear PPE such as gloves and face masks (where appropriate) to prevent dermal contact and inhalation or ingestion. Appropriate site hygiene facilities to be put in place and the presence of contaminants, and the associated risks will be explained to construction staff undertaking groundworks before they begin work. Fuel storage onsite to be carried out under best practice i.e. integrally bunded containers. Plant refuelling would be carried out using best practice techniques and any spills to be controlled with spill kit. Management of water that collects on site or within excavations. Appropriate management measures for polluting substances that are being brought on site and used as part of the construction process. Appropriate management measures for sediments in surface water runoff generated in construction and laydown areas. Appropriate management measures for accidental leakage and/or spillage incidents of oils/hazardous substances. Incorporation of hydrocarbon interceptors into the Site drainage system at high-risk areas, such as parking, unloading and refuelling areas, to remove hydrocarbons			
13.8	Ecological receptors	Potential effects on ecological receptors from contamination within the underlying soils/groundwater.		**Neutral (Not Significant)**		

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			and oils from surface water prior to discharge. <u>Ground Investigation</u> Ground investigations, undertaken prior to the construction phase, will be led by geotechnical requirements but would include geo-environmental sampling of terrestrial soils, marine sediments, groundwater and surface water. The scope of the geo-environmental investigation would be underpinned by the CSM presented in **Appendix 17-1: Preliminary Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)** and would be approved pursuant to DCO requirement. The analytical data obtained from the ground investigation would be screened for risks to human health and controlled waters and the results used to refine the contaminant linkages identified. The soils will also be analysed to determine suitability for the reuse of soils onsite. The ground investigation would also confirm preliminary hydrogeological conditions and will obtain information associated with ground aggressivity, including sulphates, sulphides (especially in pyritic ground), water-soluble magnesium and acids (indicators are pH, chloride and nitrate ions). The results will be used to determine an appropriate concrete specification for the detailed design stage. The ground investigation would be undertaken in accordance with BS 10175:2011+A2:2017[22] and LCRM[23]. As the Site is within a 'High' risk area from UXO, a detailed UXO assessment will be undertaken in accordance with CIRIA			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			guidelines[24], prior to the ground investigation. The detailed UXO assessment would provide a comprehensive, in-depth desk study to determine the risk level of potentially encountering UXO thereafter informing the proposed construction and allowing selection of the appropriate mitigation for the Proposed Scheme. The results of the ground investigation would be interpreted and assessed within a Generic Quantitative Risk Assessment (GQRA). If the ground investigation identifies contaminant linkages a Remediation Strategy would be produced which would specify protective measures during construction. These measures would be agreed with the regulators prior to implementation. The Remediation Strategy would include measures to remove or decommission any below ground services, tanks, structures and/or pipework encountered during construction to ensure that contaminants do not enter the ground / controlled waters and no preferential pathways remain. Any remediation undertaken would be validated and report on within a Verification Report to provide confidence that it has been undertaken with the agreed Remediation Strategy. This process is secured by DCO requirement and so will not be dealt with in the full CoCP(s). As secured by DCO requirement, a Piling Risk Assessment would be produced to outline measures to protect the underlying			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			aquifers during the construction phase and mitigate risk of creating preferential pathways for potential contamination. The Piling Risk Assessment would be undertaken in accordance with the Environment Agency document titled Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (NGWCL Centre Project NC/99/73)[25]. An Earthworks Specification would be produced that would include protocols for testing and limiting values to ensure that imported materials are suitable for their intended use in terms of their chemical and geotechnical quality. Contaminated ground materials that cannot be reused would be suitably managed to prevent mobilisation to the environment and to minimise the potential to impact sensitive receptors, prior to disposal. The **Outline CoCP (Document Reference 7.4)** requires that a Materials Management Plan (MMP) would be prepared prior to construction commencing (post-consent) by the Contractor(s) to monitor the maximum reuse of both natural soil and made ground (contaminated or otherwise). The MMP would be undertaken in accordance with the CL:AIRE 'Definition of Waste: Development Industry Code of Practice'[26] to ensure that soil reuse and imported materials are suitable for their intended use and will not significantly affect human health or the environment. <u>Dredged Arisings</u> Dredged arisings resulting from the capital dredging will be managed in accordance with			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			relevant legislation. The dredged arisings will be managed in accordance with relevant legislation and will be disposed of offsite (via vessel and only if dredged arisings are deemed suitable for this disposal method and conform with the permits for disposal sites). The removal of the dredged arisings will be undertaken by an appropriately licenced waste carrier. Periodic maintenance dredging will be required during the operation of the Proposed Scheme. The maintenance dredged arisings will be managed in accordance with relevant legislation and will be disposed of offsite (via vessel and only if dredged arisings are deemed suitable for this disposal method and conform with the permits for disposal sites). The removal of the dredged arisings will be undertaken by an appropriately licenced waste carrier. *Additional Mitigation* Not applicable.			
Operation Phase – Not applicable.						

Table 14: Landside Transport - Summary of Mitigation, Monitoring or Other Measures

Receptor ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
14.1	PRoW (non-motorised user)	Pedestrian and Cyclist Severance	*Embedded Mitigation* The **Framework CTMP (Document Reference 7.7)** sets out potential measures to mitigate construction effects, including the development of a CWTP. The design ensures that routes used by walkers and cyclists, including PRoW, long distance walking routes and NCN routes will remain open, where practicable, and accessible to users during construction. Further information is set out in the **Outline CoCP (Document Reference 7.4)**. *Additional Mitigation* Not applicable.	**Negligible (Not Significant)**	The **Framework CTMP (Document Reference 7.7)** outlines the typical monitoring requirements for landside transport impact during construction.	A **Framework CTMP (Document Reference 7.7)** accompanies this DCO application and outlines the traffic mitigation measures that the Contractor(s) must adopt. A full CTMP(s) is required once Contractor(s) have been appointed and is required to be produced in accordance with local highways authority guidance and Construction Logistics Planning (CLP) Guidance[27] . This is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures relating to access that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
14.2	PRoW (non-motorised user)	Pedestrian and Cyclist Delay		**Negligible (Not Significant)**		
14.3	PRoW (non-motorised user)	Pedestrian and Cyclist Amenity		**Negligible (Not Significant)**		
14.4	PRoW (non-motorised user)	Fear and Intimidation		**Negligible (Not Significant)**		
14.5	Public Transport Users	Public Transport Network		**Minor Adverse (Not Significant)**		
14.6	Highway Links/Junctions (motorised users)	Driver Delay		**Negligible (Not Significant)**		
14.7	Highway Links/Junctions (motorised users)	Accidents and Safety		**Negligible (Not Significant)**		
Operation Phase						
14.8	PRoW (non-motorised user)	Pedestrian and Cyclist Severance	*Embedded Mitigation:* The Proposed Scheme will be incorporated within an update to the existing WTP for Riverside 1 and once operational Riverside 2. A WTP represents a long term travel management strategy, detailing specific measures, designed to encourage staff	**Negligible (Not Significant)**	An update to the existing WTP for Riverside 1 and once operational Riverside 2 will be made to reflect the Proposed Scheme and will be subject to	Update to the Riverside Campus WTP will be provided alongside the outline EMP that is secured by requirement of the **Draft DCO (Document Reference 3.1)**.
14.9	PRoW (non-motorised user)	Pedestrian and Cyclist Delay		**Negligible (Not Significant)**		

Receptor ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
14.11	PRoW (non-motorised user)	Pedestrian and Cyclist Amenity	and visitors to travel by more sustainable and active transport options. In accordance with the London Plan[28] the Applicant will provide car parking, which will include blue badge and electric vehicle provision. as issued by the Environment Agency. *Additional Mitigation* Not applicable.	**Negligible (Not Significant)**	the existing monitoring requirements.	
14.12	PRoW (non-motorised user)	Fear and Intimidation		**Negligible (Not Significant)**		
14.13	Public Transport Users	Public Transport Network		**Negligible (Not Significant)**		
14.14	Highway Links/Junctions (motorised users)	Driver Delay		**Negligible (Not Significant)**		
14.15	Highway Links/Junctions (motorised users)	Accidents and Safety		**Negligible (Not Significant)**		
14.16	Highway Links/Junctions (motorised users)	Hazardous Loads		**Negligible (Not Significant)**		

Table 15: Marine Navigation - Summary of Mitigation, Monitoring or Other Measures

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
Construction Phase						
15.1	Potential Sensitive Receptors including; • proposed Scheme construction vessels (including vessels for construction dredging); • cargo vessels; • tankers; • passenger vessels; • recreational vessels; • Cory tugs and barges; • existing infrastructure (e.g. Middleton Jetty); and • the Proposed Jetty.	• Collison • Contact • Grounding • Breakout	*Embedded Mitigation* Marine vessel traffic within the Study Area is highly controlled and regulated with the PLA administering a suite of baseline risk controls. The Proposed Scheme will be fully compliant with these risk controls during both construction and operation phases. A summary of the embedded design, mitigation and enhancement measures taken from Section 7 of **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)** is provided below: • The alignment of the Proposed Jetty has been optimised sufficiently to mitigate as far as reasonably practicable the impacts on the ebb tide. • The alignment of the Proposed Jetty has been optimised sufficiently to ensure that sight lines on the approach to the berth are suitable for the PLA pilots at the helm of the vessel. • The optimum location of the Proposed Jetty with respect to the eastern extremity of Cory operations on the Middleton jetty has been considered. The Riverside 1 Lighterage Team has confirmed that the Proposed Jetty will not have an impact on the existing lighterage operations at the Middleton Jetty. • The location of the Proposed Jetty has been optimised sufficiently to mitigate as far as reasonably practicable the impacts on third party vessels transiting the channel and manoeuvring in proximity to the Proposed Jetty. • The alignment of the Proposed Jetty has been optimised to ensure that wind conditions for	Effects during the construction phase are deemed to be broadly acceptable or tolerable and as low as reasonably practical (ALARP) and are deemed **Not Significant**.	Monitoring during the construction phase will include: • London VTS Channels Marine-band VHF radio frequencies are a source of live updates and information for users of the River Thames and provide a means for vessel crew to communicate with other vessels and shore station (e.g. ports, locks, bridges and marinas) on operational, navigation and safety matters. Listening to the appropriate radio channel will provide a picture of vessel traffic, which is important for operational safety; and Visual monitoring via deployed safety boat at time construction works are underway.	Marine vessel traffic within the Study Area is highly controlled and regulated with the PLA administering a suite of baseline risk controls. The Proposed Scheme will be fully compliant with these risk controls during construction and operational phases. DCO requirements requires that **Appendix 19-1: Preliminary Navigation Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)** be updated to a full NRA to reflect detailed design and construction methodology. An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures relating to access that the Contractor(s) must adopt during the construction phase of the Proposed Scheme, including these measures. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			berthing of the vessels are appropriate and within accepted levels for safe manoeuvring. • Vessel departures from the Proposed Jetty will likely be limited to High Water ±1.5 hours. This is in part due to the optimised dredge depth for the berthing pocket, to provide an appropriate under keel clearance for the identified design vessel with the greatest draft. • The design of the Proposed Jetty will incorporate riparian lifesaving equipment in line with statutory requirements and the PLA's Guidance 'A Safer Riverside'[29]. • The Proposed Scheme is in accordance with industry guidance and standard good practice regarding port safety issues. *Additional Mitigation:* Additional risk control measures have been identified for the construction phase and are detailed in **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)**. These include: • Promulgation and dissemination of information relating to project construction phase to be shared as widely as possible through Notices to Mariners (NtM), Vessel Traffic Services (VTS) broadcasts, updates to guidance documents, emails to key stakeholders and through social media platforms, including: – planned vessel movements (arrivals and departures of materials barges); and – sequencing of construction works and proposed Marine Works mooring configurations to be shared with VTS and marine stakeholders (e.g. CLdN). • Defining operational limits of uncontrollable factors to ensure safe and efficient travel, berthing, and loading operations, above which such operations will cease until levels are back within acceptable tolerances will be determined. Such limits will include:			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			– wind speed and direction; – height of tide; – tidal stream; and – visibility. These limits would be determined during the preparation of the full NRA(s) by the involved parties, which is to be prepared in substantial accordance with **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)**. Parties would include but may not limited to the Applicant, the PLA, and those involved in preparing the construction NRA. • Defining operational limits, during the construction phase, of controllable factors to ensure safe and efficient travel, berthing, and loading operations, which if not met, will cause a cease in operations until met. Such limits will include: – minimum under keel clearance within channel and berth pocket; – tug assistance; and – tidal state at time of arrival and departure. • Enforcement of a minimum passing distance from Marine Works (50m) to vessels passing within the authorised channel in addition to a requested maximum speed reduction (less than 6kts). • A navigation exclusion zone to all vessels other than those engaged in the construction phase for the Proposed Scheme and the Applicant's vessels navigating to and from Middleton Jetty should be enforced to minimise risk associated with contact and collision hazard occurrence and allow safe passage. • A standby tug to be present onsite throughout the construction phase to provide assistance in the event of a construction vessel breakout. The standby tug should be manned and ready			

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			to respond when construction activity is taking place onsite. • The use of a Safety Boat to provide a recovery response for falling persons, and alert works Contractor(s) of impending breach of non-intrusion area by errant craft. • Appropriate mooring configurations to minimise risk of breakout resulting from vessel interaction, and optimise construction sequencing to ensure maximum distance between southern extent of authorised channel and Marine Works. The use of marine works lighting before permanent aids to navigation are installed.			
Operation Phase						
15.2	• Proposed Scheme vessels (including vessels used for maintenance dredging); • cargo vessels; • tankers; • passenger vessels; • recreational vessels; • Cory tugs and barges; • existing infrastructure (e.g. Middleton Jetty); and	• Collison • Contact • Grounding • Breakout	*Embedded Mitigation* The measures included in ID 15.1 prevent the need for embedded mitigation measures during the operation phase. *Additional Mitigation* Additional risk control measures have been identified for the operation phase and are detailed in **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. These include: • Promulgation and dissemination of information relating to project operation phase to be shared as widely as possible through NtM, VTS broadcasts, updates to guidance documents and navigational charts, emails to key stakeholders and through social media platforms, including planned vessel movements (arrivals and departures). • Defining operational limits of uncontrollable factors to ensure safe and efficient travel,	Effects during the operation phase are deemed to be broadly acceptable or tolerable and ALARP and are deemed **Not Significant.**	Monitoring during the operation phase will be include: • London VTS Channels Marine-band VHF radio frequencies are a source of live updates and information for users of the River Thames and provide a means for vessel crew to communicate with other vessels and shore station (e.g. ports, locks, bridges and marinas) on operational, navigation and safety matters. Listening to the appropriate radio channel will provide a picture of vessel traffic, which is important for operational safety. • AIS systems can be used to monitor the location,	DCO requirements requires that that **Appendix 19-1: Preliminary Navigation Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)** be updated to a full NRA to reflect detailed design

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	• the Proposed Jetty.		berthing, and loading operations, above which such operations will cease until levels are back within acceptable tolerances will be determined. Such limits will include: – wind speed and direction; – height of tide; – tidal stream; and – visibility. These limits would be determined during the preparation of the full NRA by the involved parties prior to the Proposed Scheme commencing operation. Parties would include but may not be limited to the Applicant, the PLA, and those involved in the preperation of **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. The full NRA is to be prepared in accordance with **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. • Defining operational limits of controllable factors to ensure safe and efficient travel, berthing, and loading operations, which if not met, will cause a cease in operations until met. Such limits will include: – minimum under keel clearance within channel and berth pocket; – tug assistance; and – tidal state at time of arrival and departure. • Cory tug and barge movements in and around Middelton Jetty to cease during vessel arrival/departure to the Proposed Jetty. • Berth infrastructure will be designed to mitigate the likelihood and consequences of the vessels ranging on the Proposed Jetty. • Completion of a Passing Vessel Mooring Study as required by **Appendix 19-1: Preliminary Navigational Risk Assessment**		heading and other details of vessels on the Thames. This system is not mandatory for all vessels, but most vessels navigating this section of the River Thames will carry it. • AIS tracks can be recorded and collated to produce a range of swept paths, which can analysed to show longer term vessel movements in an area. This analysis can be used to show routes and transit frequencies for different vessel classes and, from an individual vessel though to all vessels over a certain time period. • numbers of non-AIS equipped vessels such as recreational and leisure craft, used by more casual river users such as rowing clubs, for example, may be captured using CCTV positioned on or around the jetty, or by consultation with such groups to ascertain their weekly or monthly activities in the area.	

ID	Sensitive Receptor	Description of the Impact	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			(Volume 3) of the **Environmental Statement (Document Reference 6.3)**, which would determine the hydrodynamic effect of close passing large ships on moored vessels. • Third Party Ship Bridge Simulations required by **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**, to allow PEC holders to become familiar with the operational navigational environment and detailed design of the Proposed Scheme.			

Table 16: Major Accidents and Disasters - Summary of Mitigation, Monitoring or Other Measures[c]

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
16.1	Flooding of the River Thames / other surface water features.	C	*Embedded Mitigation* The Applicant has committed to constructing and managing the Proposed Scheme in accordance with the following non-exclusive list of standards and systems:	Based on the assumptions and mitigation measures put forward in other relevant technical chapters,	No monitoring required.	An **Outline CoCP (Document Reference 7.4)** accompanies this DCO application and outlines the mitigation measures that the

[c] The Table 16 summary is based on the risks presented in **Appendix 20-2: ES Risk Record (Volume 3).**
[d] Construction, Operation, Maintenance.

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			• programme of hazard studies of the Carbon Capture Facility to produce an inherently safe design and to ensure residual risks are managed to be ALARP; • Environmental, Health & Safety Management systems; • Construction Design Management (CDM) Health & Safety Plan; (relevant to construction phase only); • supplier management environmental, health & safety standards (e.g., Construction Skills Certification Scheme); • risk management systems; and • **Outline CoCP (Document Reference 7.4)** for construction phase environmental mitigation (submitted as part of the application for development consent). • **Outline EPRP (Document Reference 7.11)** for operation phase emergency preparedness and response planning. • See **Table 15** for measures relating to navigational risk management. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • See **Table 7** for measures relating to flood risk; • the Construction Phase H&S Plan (which is required by the **Outline CoCP (Document Reference 7.4)**); and • **Outline Drainage Strategy (Document Reference 7.2)**.	it is considered that the identified potential major accident(s) and/or disaster(s) events above would all be managed to be ALARP.		Contractor(s) would be required to adopt during the construction phase of the Proposed Scheme, which includes the Construction Phase H&S Plan, CDM Register and UXO Risk Assessment. The development of the full CoCP(s), in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline EPRP (Document Reference 7.11)** accompanies this DCO application and outlines the operational phase emergency preparedness and response planning that would be required to be adopted during the operation phase of the Proposed Scheme. The development of the full EPRP(s), in substantial accordance with the outline is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. An **Outline Drainage Strategy (Document Reference 7.2)**; accompanies this DCO application and outlines the drainage strategy proposals. The development of the full Drainage Strategy, in substantial accordance with the outline, is secured through a requirement of the **Draft DCO (Document Reference 3.1)**.
16.2	Flooding of onsite surface water features.	C	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* See ID 16.1.			
16.3	Unexploded ordnance.	C	*Embedded Mitigation* See ID 16.1.			

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Additional Mitigation Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline CoCP (Document Reference 7.4)**, CDM Register and UXO Risk Assessment (which is required in the **Outline CoCP (Document Reference 7.4)**).			DCO Requirements requires that **Appendix 19-1: Preliminary Navigation Risk Assessment** of the **Environmental Statement (Document Reference 6.3)** be updated to a full NRA to reflect detailed design and construction methodology incompliance with **Appendix 11-2: Flood Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)** is secured through a requirement of the **Draft DCO (Document Reference 3.1)**. The Operational EMP (prepared prior to the Proposed Scheme becoming operational) will ensure that adverse effects are avoided/reduced where practicable. This is secured by a Requirement of the **Draft DCO (Document Reference 3.1)**.
16.4	Damage to the Proposed Jetty.	C	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline CoCP (Document Reference 7.4)**, Construction Phase H&S Plan (which is required in the **Outline CoCP (Document Reference 7.4)**); and • **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**.			
16.5	Flooding of the River Thames.	C	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline CoCP (Document Reference 7.4);** • **Appendix 11-2: Flood Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**; • the Construction Phase H&S Plan (which is required in the **Outline CoCP (Document Reference 7.4)**); and • **Outline Drainage Strategy (Document Reference 7.2)**.			
16.6	Presence of underground services/utilities -sewers, gas, electricity, potable water, telecoms/data and surface/storm water drainage.	C				
16.7	Overhead construction activities associated with the Access Trestle for the Proposed Jetty will be undertaken across the England Coast Path (FP3/NCN1).	C				

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
16.8	Maintenance of Carbon Capture Plant 1 services and equipment in proximity to construction routes and area related to Carbon Capture Plant 2.	C, O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline CoCP (Document Reference 7.4)** including the Construction Phase H&S Plan and Site Workplace Vehicle Risk Assessment. • Operational EMP that will be prepared prior to the Proposed Scheme commencing operation in accordance with the **Mitigation Schedule (Document Reference 7.8)**, **Appendix 11-2: Flood Risk Assessment (Volume 3)** in the **Environmental Statement (Document Reference 6.3)**, the **Outline EPRP (Document Reference 7.11)** that will be used to form a Site Emergency Plan.			
16.9	Third party vessel using the shipping channel looses control and collides with the Proposed Jetty.	C, O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • a hazard and operability study (HAZOP); • **Outline CoCP (Document Reference 7.4)** and the Construction Phase H&S Plan (required by the **Outline CoCP (Document Reference 7.4)**). • **Appendix 19-1: Preliminary Navigational Risk Assessment (Volume 3)** of the **Environmental Statement (Document Reference 6.3)**. • Operational EMP that will be prepared prior to the Proposed Scheme commencing operation in accordance with the **Mitigation Schedule (Document Reference 7.8)**, **Appendix 11-2: Flood Risk**			

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			Assessment (Volume 3) of the **Environmental Statement (Document Reference 6.3)**, the **Outline EPRP (Document Reference 7.11)** that will be used to form a Site Emergency Plan.			
16.10	Flooding of the River Thames / other surface water features.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • Operational EMP (which is required to be prepared prior to the Proposed Scheme commencing operation); • See **Table 7** for measures relating to flood risk; • The **Outline EPRP (Document Reference 7.11)** is required to form a Site Emergency Plan; and • **Outline Drainage Strategy (Document Reference 7.2)**.			
16.11	Flooding of onsite surface water features.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • Outline EMP (which is required prepared prior to the Proposed Scheme commencing operation); • See **Table 7** for measures relating to flood risk; • the **Outline EPRP (Document Reference 7.11)** which is required to form a Site Emergency Plan; and • **Outline Drainage Strategy (Document Reference 7.2)**.			

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
16.12	Major release of solvent (e.g. amines) on the Carbon Capture Facility.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**; • the HAZOP; • Site Emergency Plan; • Explosion protection documentation; and • hazardous area classification zoning and maps (all of which is required in the **Outline EPRP (Document Reference 7.11)**).			
16.13	Waste product containing solvents.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**; • the HAZOP; • Fire strategy; • Fire safety management plan; • Major Accident Prevention Plan (MAPP); and • Site Emergency Plan (is required by the **Outline EPRP (Document Reference 7.11)**).			
16.14	Lack of fire water capacity.	O & M				
16.15	Loss of containment event from the LCO_2 storage tank or the LCO_2 above ground pipeline.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation*			
16.16	Loss of containment event from the LCO_2 above ground	O				

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
	pipeline, Elevated Process Pipe and Duct Bridge or Elevated Process Pipe Bridge on the Proposed Jetty / during loading of the marine vessel.		Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • dedicated studies undertaken to assess the likelihood and consequences of a large CO_2 release, as part of detailed design of the Proposed Scheme.			
16.17	Fire at Riverside 1 and/or 2.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**; • the HAZOP; • Fire strategy; • Fire safety management plan; • Major Accident Prevention Plan (MAPP); and • Site Emergency Plan (all of which is required by the **Outline EPRP (Document Reference 7.11)**).			
16.18	Loss of containment event from the marine vessel.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**; • the HAZOP; • Major Accident Prevention Plan (MAPP); and • Site Emergency Plan (all of which is required in the **Outline EPRP (Document Reference 7.11)**).			
16.19	Flooding of the River Thames.	O & M	*Embedded Mitigation*			

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
			See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**; • See **Table 7** for measures relating to flood risk; and • **Outline Drainage Strategy (Document Reference 7.2)**.			
16.20	Storage of hazardous raw materials / waste.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • Operational EMP; and • **Outline EPRP (Document Reference 7.11)**.			
16.21	Storage of hazardous raw materials / waste.	O & M				
16.22	Commissioning of the refrigeration plant (part of the LCO_2 liquification plant).	O & M				
16.23	Failure of refrigeration plant due to lack of maintenance.	O & M				
16.24	Failure of the onsite wastewater treatment plant.	O & M				
16.25	Leakage from flue gas ductwork due to poor installation / damage to / corrosion of ductwork.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • **Outline EPRP (Document Reference 7.11)**.			
16.26	Delivery / storage of solvent (e.g. amines).	O & M	*Embedded Mitigation*			

ID	Hazard Description	Proposed Scheme Phase[d]	Specific Mitigation Measures	Residual Effects	Proposed Monitoring	How the Mitigation / Monitoring is Secured
16.27	Leakage of solvent (e.g. amines) during unloading from road tanker to storage tank.	O & M	See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • Operational EMP, for maintenance procedures; and • **Outline EPRP (Document Reference 7.11)**.			
16.28	Overfilling of fresh solvent storage tank.	O & M				
16.29	Leakage of waste solvent during road tanker loading.	O & M				
16.30	Overfilling of waste solvent road tanker due to operator error.	O & M				
16.31	Leakage of chemicals (caustic soda, sulphuric acid or water treatment chemicals) during unloading from road tanker to storage tank.	O & M				
16.32	Overfilling of chemical storage tanks.	O & M				
16.33	Fire on CO_2 vessel.	O & M	*Embedded Mitigation* See ID 16.1. *Additional Mitigation* Additional mitigation is captured in the previous technical topic tables above and is covered within the following documents for this specific hazard: • the HAZOP; • Fire strategy; • Fire safety management plan; • Major Accident Prevention Plan (MAPP); and • Site Emergency Plan (all of which is required in the **Outline EPRP (Document Reference 7.11)**).			
16.34	Fire on tug (third party and Cory).	O & M				
16.35	Explosion on third party vessel (carrying flammable/explosive cargo) using the shipping channel.	O & M				

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