The Great Grid Upgrade

Sea Link

Sea Link

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Water Environment

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4.1 Introduction

4.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant water environment effects that could result from the Proposed Project (as described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**).

4.1.2 Water environment effects associated with the Kent Onshore Scheme are largely temporary, associated with the construction and, to a lesser extent, decommissioning of the Proposed Project. Potential effects are linked, for example, to changes to the existing land drainage regime due to soil stripping, earthworks and the introduction of impermeable land cover on undeveloped land, works in proximity to and crossing watercourses that could give rise to pollution or affect existing flow regimes.

4.1.3 The Order Limits, which illustrate the boundary of the Proposed Project, are shown on **Application Document 2.2.1 Overall Location Plan** and the Kent Onshore Scheme Boundary is illustrated on **Application Document 2.2.3 Kent Location Plan**.

4.1.4 This chapter should be read in conjunction with the following ES chapters:

- **Application Document 6.2.1.3 Part 1 Introduction Chapter 3 Main Alternatives Considered**;
- **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**;
- **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**;
- **Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation**;
- **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**; and
- **Application Document 6.2.3.5 Part 3 Kent Chapter 5 Geology and Hydrogeology**.

4.1.5 This chapter is supported by the following figures:

- **Application Document 6.4.3.4 Water Environment**; and
- **Application Document 2.11.2 Water Bodies in the River Basin Management Plan – Kent**.

4.1.6 This chapter is supported by the following appendices:

- **Application Document 6.3.3.4.A Appendix 3.4.A Water Environment Baseline Data**.

4.1.7 This chapter is supported by the following application documents:

- **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)**;
- **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice**; and
- **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**.

4.1.8 The chapter should also be read in conjunction with **Application Document 6.8 Flood Risk Assessment** and **Application Document 6.9 Water Framework Directive Assessment**.

4.2 Regulatory and Planning Context

4.2.1 This section sets out the legislation and planning policy that is relevant to the water environment effects assessment. A full review of compliance with relevant national and local planning policy is provided within the **Application Document 7.1 Planning Statement** submitted as part of the application for Development Consent.

4.2.2 Policy generally seeks to minimise effects on the water environment from development and to avoid significant adverse effects. This applies particularly to the safeguarding of the physical and biological quality of waterbodies, the sustainable management of water resources and the prevention of impacts on land drainage regimes and flood risk.

Legislation

The Water Environment (Water Framework Directive [WFD] (England and Wales) Regulations 2017

4.2.3 The Water Environment (Water Framework Directive [WFD]) (England and Wales) Regulations 2017 (as amended) (HM Government, 2017) implemented the WFD in England and Wales. Under Section 2 of the European Union (Withdrawal) Act 2018, the 2017 Regulations continue to have effect in domestic law following the UK's withdrawal from the European Union.

4.2.4 The purpose of the WFD is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and ground waters to prevent further deterioration in, and enhance, water quality, and to promote sustainable water use. The 2017 Regulations require the "*appropriate agency*" (the Environment Agency, for England) to prepare River Basin Management Plans (RBMPs) for each river basin district (RBD), for the approval of the Secretary of State.

4.2.5 The RBMPs describe the current state of the water environment for each RBD, the pressures affecting the water environment, the objectives for protecting and improving it, and the programme of measures needed to achieve the statutory environmental objectives of the WFD (i.e., to enable water bodies to achieve Good status).

4.2.6 Under the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (HM Government, 2009), an application for a Development Consent Order (DCO) must be accompanied by a plan with accompanying information identifying water bodies in RBMP, together with an assessment of any effects on such water bodies likely to be caused by the development (Regulation 5). This is commonly referred to as a WFD assessment.

Part 5 of the Environment Act 2021

4.2.7 Part 5 of the Environment Act 2021 (HM Government, 2021), brings together measures to strengthen and update the existing regulatory and long-term planning framework for water, helping to reduce environmental risks, including to water quality and land drainage. It also strengthens the regulation of water and sewerage undertakers through the newly established Office for Environmental Protection.

The Land Drainage Act 1991

4.2.8 The Land Drainage Act 1991 (HM Government, 1991) and the Environmental Permitting (England and Wales) Regulations 2016 (HM Government, 2016) impose certain controls in relation to the placing of structures and the carrying out of works affecting main rivers and other (ordinary) watercourses.

National Policy

National Policy Statements

4.2.9 National Policy Statements (NPS) set out the primary policy tests against which the application for a Development Consent Order (DCO) for the Proposed Project would be considered. Table 4.1 and Table 4.2 below provides details of the elements of NPS for Energy (EN-1) (Department for Energy Security & Net Zero , 2023) and NPS for Electricity Networks Infrastructure (EN-5) (Department for Energy Security & Net Zero, 2023) that are relevant to this chapter.

Table 4.1 NPS EN-1 requirements relevant to water environment

NPS EN-1 section	Where this is covered in the ES
5.8.7 "*Where new energy infrastructure is, exceptionally, necessary in flood risk areas (for example where there are no reasonably available sites in areas at lower risk), policy aims to make it safe for its lifetime without increasing flood risk elsewhere and, where possible, by reducing flood risk overall. It should also be designed and constructed to remain operational in times of flood."*	**Application Document 6.8 Flood Risk Assessment** identifies the flood risk resilience measures that have been embedded into the Proposed Project design in order to meet the policy requirements.
5.8.13 "*A site-specific flood risk assessment should be provided for all energy projects in Flood Zones 2 and 3 in England or Zones B and C in Wales. In Flood Zone 1 in England or Zone A in Wales, an assessment should accompany all proposals involving:* • *sites of 1 hectare or more* • *land which has been identified by the EA or NRW as having critical drainage problems* • *land identified (for example in a local authority strategic flood risk assessment) as being at increased flood risk in future*	A Flood Risk Assessment (FRA) has been undertaken. The findings are reported in **Application Document 6.8 Flood Risk Assessment** and have been used to inform the assessment of effects reported in Sections 4.9 and 4.11.

NPS EN-1 section	Where this is covered in the ES
• *land that may be subject to other sources of flooding (for example surface water)* • *where the EA or NRW, Lead Local Flood Authority, Internal Drainage Board or other body have indicated that there may be drainage problems."*	
5.8.14 "*This assessment should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account."*	**Application Document 6.8 Flood Risk Assessment** assesses flood risk from all applicable sources and sets out the measures proposed to manage flood risk, considering climate change over the Proposed Project's lifetime.
5.8.18 *"Applicants for projects which may be affected by, or may add to, flood risk should arrange pre-application discussions before the official pre-application stage of the NSIP process with the EA or NRW, and, where relevant, other bodies such as Lead Local Flood Authorities, Internal Drainage Boards, sewerage undertakers, navigation authorities, highways authorities and reservoir owners and operators."*	Regular engagement with the Environment Agency, Lead Local Flood Authorities (LLFA) and Internal Drainage Boards (IDB) has taken place to agree assessment methodologies and key design principles and water environment mitigation measures. Further details of this engagement are provided in Section 4.3.
5.8.19 *"Such discussions should identify the likelihood and possible extent and nature of the flood risk, help scope the FRA, and identify the information that will be required by the Secretary of State to reach a decision on the application when it is submitted. The Secretary of State should advise applicants to undertake these steps where they appear necessary but have not yet been addressed."*	Regular engagement with the Environment Agency, Lead Local Flood Authorities (LLFA) and Internal Drainage Boards (IDB) has taken place to agree assessment methodologies and key design principles and water environment mitigation measures. Further details of this engagement are provided in Section 4.3.
5.16.1 *"Infrastructure development can have adverse effects on the water environment, including groundwater, inland surface water, transitional waters, coastal and marine waters."*	The effects of the Proposed Project on inland surface waters are assessed herein. Groundwater effects are assessed in **Application Document 6.2.3.5 Part 3 Kent Chapter 5 Geology and Hydrogeology** and effects on transitional and coastal/marine waters associated with the Kent Offshore Scheme are assessed in **Application Document 6.2.4.1 Part 4 Marine Chapter 1 Physical Environment**.
5.16.2 *"During the construction, operation and decommissioning phases, development can lead to increased demand for water, involve discharges to water and cause adverse ecological effects resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants to the water*	These aspects have been subject to EIA Scoping (**Application Document 6.2.1.6 Part 1 Introduction Chapter 6 Scoping Opinion and EIA Consultation**) and in accordance with the Scoping Opinion, matters with potential to give rise to a likely significant effect were scoped in

NPS EN-1 section	Where this is covered in the ES
environment. These effects could lead to adverse impacts on health or on protected species and habitats (see Section 4.3) and could result in surface waters, groundwaters or protected areas failing to meet environmental objectives established under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and the Marine Strategy Regulations 2010. ”	and are assessed herein. The potential for the Proposed Project to compromise objectives established under the Water Environment (Water Framework Directive) has been assessed in **Application Document 6.9 Water Framework Directive Assessment**).
5.16.3 *“Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment and how this might change due to the impact of climate change on rainfall patterns and consequently water availability across the water environment, as part of the ES or equivalent (see Section 4.3 and 4.10).”*	These aspects of the water environment within the study area are described in Section 4.6 which also includes consideration of how baseline conditions may change in the future.
5.16.4 *“The Secretary of State should be satisfied that a proposal has regard to current River Basin Management Plans and meets the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (including regulation 19). The specific objectives for particular river basins are set out in River Basin Management Plans. The Secretary of State must refuse development consent where a project is likely to cause deterioration of a water body or its failure to achieve good status or good potential, unless the requirements set out in Regulation 19 are met. A project may be approved in the absence of a qualifying Overriding Public Interest test only if there is sufficient certainty that it will not cause deterioration or compromise the achievement of good status or good potential.”*	The potential for the Proposed Project to compromise objectives established under the Water Framework Directive has been assessed in **Application Document 6.9 Water Framework Directive Assessment.** This assessment has been prepared with reference to the specific objectives set for relevant waterbodies within the South East River Basin Management Plan (Environment Agency, 2022).
5.16.15 *“The Secretary of State should also consider the interactions of the proposed project with other plans such as Water Resources Management Plans and Shoreline Management Plans.”*	**Application Document 6.9 Water Framework Directive Assessment** has been prepared with reference to Southern Waters Water Resource Management Plan (Securing a resilient future for water in the South East: Our Water Resources Management Plan for 2020-70, 2019) and the Isle of Grain to South Foreland Shoreline Management Plan (Halcrow Group Limited , 2010).

NPS EN-1 section	Where this is covered in the ES
5.15.7 *"The Secretary of State should consider proposals to mitigate adverse effects on the water environment and any enhancement measures put forward by the applicant and whether appropriate requirements should be attached to any development consent and/or planning obligations are necessary."*	Measures to mitigate likely significant adverse effects on the water environment are described in Sections 4.8 and 4.10.

Table 4.2 NPS EN-5 requirements relevant to water environment

NPS EN-5 section	Where this is covered in the ES
2.3.2 *"As climate change is likely to increase risks to the resilience of some of this infrastructure, from flooding for example, or in situations where it is located near the coast or an estuary or is underground, applicants should in particular set out to what extent the proposed development is expected to be vulnerable, and, as appropriate, how it has been designed to be resilient to:* *• flooding, particularly for substations that are vital to the network; and especially in light of changes to groundwater levels resulting from climate change;* *• the effects of wind and storms on overhead lines;* *• higher average temperatures leading to increased transmission losses;* *• earth movement or subsidence caused by flooding or drought (for underground cables); and* *• coastal erosion – for the landfall of offshore transmission cables and their associated substations in the inshore and coastal locations respectively."*	**Application Document 6.8 Flood Risk Assessment** examines future flood risk to the Proposed Project over its lifetime, and identifies mitigation measures required to ensure flood resilience, taking climate change predictions into account. The Proposed Project's resilience to other aspects of climate change is addressed in **Application Document 6.2.5.1 Part 5 Combined Chapter 1 Climate Change**.
2.3.3 *"Section 4.10 of EN-1 advises that the resilience of the project to the effects of climate change must be assessed in the Environmental Statement (ES) accompanying an application. For example, future increased risk of flooding would be covered in any flood risk assessment (see Sections 5.8 in EN-1). Consideration should also be given to coastal change (see sections 5.6 in EN1)."*	**Application Document 6.8 Flood Risk Assessment** examines future flood risk to the Proposed Project over its lifetime, and identifies mitigation measures required to ensure flood resilience, taking climate change predictions into account.

National Planning Policy Framework

4.2.10 The National Planning Policy Framework (NPPF) as revised in December 2024 (Ministry of Housing, Communities and Local Government, 2024) sets out national

planning policies that reflect priorities of the Government for operation of the planning system and the economic, social, and environmental aspects of the development and use of land. The NPPF has a strong emphasis on sustainable development, with a presumption in favour of such development. The NPPF has the potential to be considered important and relevant to the Secretary of State's (SoS) consideration of the Proposed Project.

4.2.11 Table 4.3 below provides details of the elements of the NPPF that are relevant to this chapter, and how and where they are covered in the ES.

Table 4.3 NPPF requirements relevant to water environment

NPPF section	Where this is covered in the ES
Paragraphs 162 and 164 These paragraphs advocate adoption of proactive strategies to mitigate and adapt to climate change, taking full account of the full range of potential climate change impacts, including on flood risk, coastal change, water supply, biodiversity and landscapes.	**Application Document 6.8 Flood Risk Assessment** presents a detailed FRA, the findings of which have been used to develop the design to ensure the Proposed Project would be safe over its lifetime, without increasing flood risk elsewhere. The Proposed Project avoids situating proposed new substations and converter stations in areas that are at risk of flooding now and into the future.
Paragraphs 170, 172 and 174 These paragraphs introduce and set out the aims of the Sequential Test, to steer new development to areas with the lowest risk of flooding and which is applied based on the relevant strategic flood risk assessment. NPPF advocates that the sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.	**Application Document 6.8 Flood Risk Assessment** demonstrates compliance with the stated criteria. The sequential test has been applied and development has been directed away from areas of high flood risk where possible.
Paragraphs 177 to 181 These paragraphs introduce and set out the aims and requirements of the Exception Test, stating that: *"to pass the exception test it should be demonstrated that:(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall."*	Where it has not been possible to wholly avoid development in areas with a higher risk of flooding, the Exception Test has been applied. **Application Document 6.8 Flood Risk Assessment** demonstrates compliance with the requirements of this test.
Paragraph 182 *'Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff."*	The Proposed Project is committed to incorporating Sustainable Drainage Systems (SuDS) to manage construction and operational drainage. Details of the key drainage principles are provided within **Application**

NPPF section	Where this is covered in the ES
	Document 6.8 Flood Risk Assessment.
Paragraph 187 *"Planning policies and decisions should contribute to and enhance the natural and local environment by [inter alia]…) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans'".*	Measures to mitigate against adverse impacts on water quality are described in Section 4.8 and 4.10 and **Application Document 6.9 Water Framework Directive Assessment** sets out how the Proposed Project would contribute to the objectives set out for relevant waterbodies within the South East River Basin Management Plan (Environment Agency, 2022).

National Planning Practice Guidance

4.2.12 There are two National Planning Practice Guidance publications that are relevant to the water environment, the requirements of which are covered herein. The flood risk and coastal change guidance (Ministry of Housing Community and Local Government, 2022) advises how to take account of and address the risks associated with flooding and coastal change in the planning process. The water supply, wastewater and water quality guidance (Ministry of Housing Community and Local Government, 2019) advises on how planning can ensure water quality and the delivery of adequate water and wastewater infrastructure.

Local Planning Policy

4.2.13 The Kent Onshore Scheme (refer to **Application Document 2.2.3 Kent Location Plan**) lies within the jurisdiction of Kent County Council. County planning guidance which is relevant to a study of the water environment and has informed the assessment of effects in this chapter are as follows:

- Kent Drainage and Planning Policy Statement (Kent County Council, 2019).

4.2.14 This policy statement sets out the Council's expectations in terms of surface water management provisions associated with applications for major development.

Local Plans

4.2.15 The majority of the Kent Onshore Scheme lies within the jurisdiction of Thanet District Council (TDC). Local planning policy for Thanet District Council consists of the Thanet Local Plan (adopted July 2020) (Thanet District Council, 2020). Thanet Local Plan policies which are relevant to water environment assessment matters and have informed the water environment assessment are detailed in Table 4.4.

Table 4.4 Local planning policies relevant to water environment – Thanet District Local Plan

Thanet District Local Plan - Policy	Where this is covered in the ES
CC01 - Fluvial and Tidal Flooding New development in an area identified as being at risk of flooding and falling within Flood Zones 2 and 3, will only be permitted if it can be demonstrated that it satisfies the Sequential Test and, where required, the Exception Test as set out in the NPPF. Development proposals in these areas shall be accompanied by a FRA, including developments over 1 hectare in Flood Zone 1, which should address flood risk from all sources of flooding including surface and groundwater flooding. Any development that takes place in a flood risk area will be expected to incorporate flood resilience measures.	**Application Document 6.8 Flood Risk Assessment**, that has been prepared for the Proposed Project accords with the requirements of the NPPF and associated guidance, inclusive of the relevant Strategic Flood Risk Assessments (SFRA) – Dover District Council SFRA (Herrington Consulting Limited, 2019) and Thanet District Council SFRA (Herrington Consulting Ltd, 2022). The FRA identifies the necessary mitigation, which has been secured within the application for DCO, to ensure that there is not an unacceptable risk of flooding to the Proposed Project or elsewhere.
CC02 - Surface Water Management New development is required to manage surface water resulting from the development using sustainable drainage systems (SuDs) wherever possible. SuDs design, together with a robust long term maintenance plan should be included as an integral part of the master planning and design process for new development and should, wherever possible, incorporate multi-functional benefits for people and wildlife.	Measures for mitigation of surface water flooding are covered in Section 4.8 and 4.10, with further information provided within **Application Document 6.8 Flood Risk Assessment** and a secured commitment for provision of a detailed Construction Surface Water Management Plan to be prepared by the appointed contractor.

4.2.16 Parts of the Kent Onshore Scheme lie within the jurisdiction of Dover District Council (DCC). The Dover District Local Plan was adopted in October 2024 and policies which are relevant to water environment matters are identified in Table 4.5.

Table 4.5 Local Planning Policies relevant to water environment – Dover District Local Plan

Dover District Local Plan - Policy	Where this is covered in the ES
CC5 – Flood Risk Development on sites at risk of flooding must comply with the National Planning Policy Framework and associated guidance and will only be permitted as an exception and where it is demonstrated by a site-specific FRA, carried out in accordance with the requirements set out in the Council's Strategic Flood Risk Assessment	**Application Document 6.8 Flood Risk Assessment** accords with the requirements of the NPPF and associated guidance, inclusive of Dover Councils Site Specific Guidance for Managing Flood Risk (Herrington Consulting Limited, 2019) and the Thanet District Council (Herrington

Dover District Local Plan - Policy	Where this is covered in the ES
(SFRA), that it would not result in an unacceptable risk of flooding on the site itself or elsewhere.	Consulting Ltd, 2022) and Dover District Council SFRAs (Herrington Consulting Limited, 2019). The FRA has identified the necessary mitigation, which has been secured within the DCO, to ensure that there is not an unacceptable risk of flooding to the Proposed Project or elsewhere.
CC6 – Surface Water Management All new development should replicate natural ground and surface water flows and decrease surface water runoff through the use of Sustainable urban Drainage Systems.	**Application Document 6.8 Flood Risk Assessment** sets out how surface water would be managed during construction and operation of the Proposed Project using suitable SuDS. A commitment, detailed in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** is also secured for provision of a detailed Construction Surface Water Management Plan to be prepared by the appointed contractor.

4.3 Scoping Opinion and Consultation

Scoping

4.3.1 A Scoping Report for the Proposed Project was issued to the Planning Inspectorate (PINS) on 24 October 2022 (**Application Document 6.14 Environmental Scoping Report 2022**) and a Scoping Opinion was received from PINS, on behalf of the SoS on 1 December 2022 (**Application Document 6.15 Scoping Opinion 2022**). Table 4.6 sets out the comments raised in the Scoping Opinion and how these have been addressed in this ES. The Scoping Opinion takes account of responses from prescribed consultees as appropriate. **Application Document 6.3.1.6.A Appendix 1.6.A Response to Scoping Opinion** provides responses to the comments made by the prescribed consultees at scoping stage and how each comment has been considered.

Table 4.6 Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
4.4.1	*[Pollution of watercourses associated with operational discharges and runoff from above ground infrastructure (AGI) – water quality effects (operation)]* This matter is scoped out on the basis of no impact pathway given treatment through SUDs provision. The Inspectorate agrees that,	The measures embedded within the Proposed Project's design to mitigate the risks of pollution of the watercourses that would receive drainage discharges from operational AGI are summarised in Section 4.8 of **Application**

ID	Inspectorate's comments	Response
	provided the measures to mitigate the risks of pollution of watercourses are clearly described in the ES and secured in the dDCO, this matter can be scoped out of further assessment.	**Document 6.2.1.4 Description of the Proposed Project** and outlined in commitments within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** which is secured by the Onshore CEMP as per Requirement 6 in Schedule 3 of the draft DCO (**Application Document 3.1**).
4.4.2	*[Increased flood risk from operational discharges and runoff from AGI and loss of floodplain storage (operation)]* This matter is proposed to be scoped out on the basis of no impact pathway given attenuation of runoff through SuDS provision. The Inspectorate agrees that, provided the operational control measures in the form of SuDS are clearly described in the ES and secured through the dDCO, this would ensure no pathway of effect to result in increased flood risk from operational discharges and runoff from AGI or loss of floodplain storage.	Operational control measures in the form of SuDS are described in **Application Document 6.2.1.4 Part 1 Chapter 4 Description of the Proposed Project** and outlined in commitments within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** which is secured by the Onshore CEMP as per Requirement 6 in Schedule 3 of the draft DCO (**Application Document 3.1**).
4.4.3	*[Physical disturbance, impact to flow regimes (watercourse crossings) from operational infrastructure (AGI and watercourse crossings) (operation)]* This matter is proposed to be scoped out on the basis that there would be no impact pathway, as there would be no physical disturbance during operation. The Inspectorate agrees that following construction there would be no further physical disturbance or impact on flow regimes at watercourse crossings and therefore this matter can be scoped out of the assessment.	In line with the conclusions of the scoping opinion, operational effects on hydromorphology were scoped out and have not been subject to further assessment herein.
4.4.4	*[Effects from maintenance activities (maintenance)]* This matter is proposed to be scoped out on the basis of the nature of the proposed maintenance activities which would not provide an impact pathway. However, the activities associated with maintenance as listed in Scoping Report paragraph 3.5.6.1.8 suggest multiple impact pathways. The ES should either assess impacts from maintenance activities where significant effects are likely to	On the basis of the types of maintenance activities that are envisaged, described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**, effects on watercourse flow regimes, flood risk and water quality were scoped out. Given the control measures that maintenance activities would be

ID	Inspectorate's comments	Response
	occur or explain why there are no impact pathways. It is also noted that maintenance activities are scoped in for the Suffolk Onshore Scheme at Table 2.5.1. This matter should be clarified in the ES.	subject to, impact pathways would be sufficiently weakened such that it is considered unlikely that significant effects on the water environment would arise. During scoping, maintenance activities associated with the Suffolk Onshore Scheme were scoped in due to the more complex co-location scenarios.
4.4.5	*[Increased surface water runoff from converter station drainage during operation on receptors 'existing land uses and infrastructure' (operation)]* This matter is scoped out on the basis of no impact pathway given attenuation of runoff through SuDS provision. The Inspectorate agrees that SuDS provision would remove/reduce the likelihood of surface water runoff from the convertor site during operation and thus ensure any such effects would be fully mitigated. The Inspectorate therefore agrees this matter can be scoped out of the assessment.	In line with the conclusions of the scoping opinion, operational effects on existing land uses and infrastructure from increased surface water runoff from Minster Converter Station and Minster Substation drainage during operation were scoped out and have not been subject to further assessment herein.
4.4.6	*[Increased flood risk due to permanent loss of floodplain storage/impediment of floodplain flows on floodplains, landowners and infrastructure (operation)]* Scoped out on the basis that there would be no impact pathway as there would be no above ground operational infrastructure in the floodplain and therefore no construction works required in the flood plain. Provided this is demonstrated in the ES, supported by the FRA, the Inspectorate agrees to scope this matter out.	**Application Document 6.8 Flood Risk Assessment** demonstrates that the Proposed Project would not cause increases in fluvial flood risk. No operational above ground infrastructure would be located in the floodplain, as illustrated in **Application Document 6.4.3.4.2 Flood Risk Baseline**.
4.4.7	*[Permanent impacts on land drainage regimes of ordinary watercourses, land drains and existing land uses (operation)]* This is scoped out on the basis that there are no impact pathways, as land drainage routes would be reinstated or re-provided. The ES should demonstrate how land drainage routes would be reinstated/re-provided and secured through the dDCO. On the basis of this being evidence in the ES, the Inspectorate agrees to scope this matter out.	A commitment to maintaining and re-instating or re-providing land drainage routes during construction of the Proposed Project (CoCP measure W11) is included in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**. This topic was scoped out and has not

ID	Inspectorate's comments	Response
		been subject to further assessment herein.
4.4.8	*[Impacts to water abstractions/interests]* The existence, location and number of abstraction sites in the Kent Onshore Scheme scoping boundary are currently unknown and are proposed to be determined through review of the EA's register. The Suffolk Onshore Scheme at Table 2.5.9 requested to scope out 'Reduced water availability to support abstractions and assimilate discharges' on 'existing water interests', although this does not feature in the scoping in/out tables for the Kent Onshore Scheme. The ES should provide information on the water abstractions/interests that may be affected by the Proposed Development and include an assessment on these receptors, where likely significant effects could occur.	**Application Document 6.3.3.4.A Water Environment Baseline Data** provides information on existing surface water abstractions, collected from the Environment Agency and Kent County Council. No potential for likely significant effects on these receptors has been identified due to a range of factors, described in paragraph 4.3.14 below, for example their location, upstream relative to project activities and the pollution control measures documented in **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)** and its appendix**, the CoCP (Application Document 7.5.3.1)**.
4.4.9	*[Study area, embedded measures, and assessment methodology]* See comments 3.4.11, 3.4.12, and 3.4.14 for the Suffolk Onshore Scheme above, which are also applicable to the Kent Onshore Scheme.	Please see specific responses below.
	(3.4.11) *[Study area]* The Scoping Report identifies a 500m buffer around the Onshore Scheme Scoping Boundary but does not give reasons for the choice of study area. The ES should clearly define the study area, based on the Zone of Influence (ZOI) from the Proposed Development, together with a justification for the selection.	The proposed study area is illustrated in **Application Document 6.4.3.4.1 Study Area and Water Environment Receptors** and described in Section 4.6, which provides justification for the selection.
	(3.4.12) *[Embedded measures/design – watercourse crossings]* The Scoping Report does not currently identify the types of crossings to be applied, but states that 'suitable crossing designs would be selected with the aim of reducing impacts'. The Applicant's attention is directed to the comments of the EA at Appendix 2 to this Opinion with regards to the culverting of watercourses, which the EA would oppose	Engaged with key stakeholders has taken place to agree suitable watercourse crossing design principles and the proposed approaches to watercourse crossings are outlined in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. A suite of measures to reduce the temporary impacts of watercourse crossings are

ID	Inspectorate's comments	Response
		described in **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)** and its appendix, the CoCP (**Application Document 7.5.3.1**).
	(3.4.14) *[Assessment methodology – magnitude criteria]* Examples within this table *[Magnitude Criteria]* include reference to fishery value or designated nature conservation sites, although such receptor types are not explicitly mentioned in this aspect chapter. The Water Environment aspect chapter of the ES should include appropriate cross-references to other relevant aspect chapters such as Ecology and Biodiversity.	Suitable cross references to other relevant chapters of the ES are provided herein.

Statutory Consultation

4.3.2 Statutory Consultation for the Proposed Project took place between 24 October and 18 December 2023. A further targeted consultation exercise on the main changes to the Proposed Project introduced after the 2023 statutory consultation, was undertaken between 8 July and 11 August 2024. In addition, a project update and a local engagement exercise took place between 22 November 2024 and 12 January 2025, focusing on design amendments made following Targeted Consultation. A summary of relevant feedback received during consultation relating to water environment is provided in subsequent paragraphs below. Further details on how consultation responses have informed the assessment can be found in **Application Document 5.1 Consultation Report** and **Application Document 5.1.9 Appendix H Summary 2023 Response**.

4.3.3 Feedback was received from several stakeholders, with most comments linking to flood risk and drainage, with some feedback on the scope of the **Application Document 6.9 Water Framework Directive Assessment** also received from the Environment Agency.

4.3.4 The future vulnerability of the Minster Marshes to flooding as a consequence of the predicted effects of climate change was highlighted as was the need for the robust management of drainage routes and runoff during construction of the Proposed Project. The Environment Agency requested that the effects of crossings of main rivers be assessed and that all floodplain storage losses are compensated for, and that the Kent North WFD waterbody be screened into the WFD Assessment.

4.3.5 **Application Document 6.8 Flood Risk Assessment** examines future flood risk to the Proposed Project over its lifetime, and identifies mitigation measures required to ensure flood resilience, taking climate change predictions into account. The measures proposed to manage land drainage and surface water runoff during construction are described in **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)** and its appendix the CoCP (**Application Document 7.5.3.1**). The Kent North WFD waterbody has been screened into the assessment (**Application Document 6.9 Water Framework Directive Assessment**).

Further Engagement

4.3.6 A series of water environment thematic meetings have been held with Kent stakeholders, including the Environment Agency, Kent County Council, Thanet District Council and Dover District Council. Engagement with the Kent Stour Internal Drainage Board has also taken place. During the thematic meetings a range of matters have been discussed, including updates on design matters including refinements to the surface water drainage proposals, the Proposed Project's intended strategy to consenting works under the Environmental Permitting Regulations Works and works within the River Stour floodplain.

4.3.7 Through this further engagement, the approach for secondary consents and permit applications (i.e. not to disapply Flood Risk Activity Permits (FRAPs) within the DCO, instead applying for FRAPs pre-construction) was discussed and agreed. The approach for the River Stour watercourse crossing design was also shared and discussed during this engagement.

4.3.8 Drafts of the WFD (**Application Document 6.9 Water Framework Directive Assessment**) and FRA (**Application Document 6.8 Flood Risk Assessment**) have been shared with the EA prior to DCO submission and their feedback considered in the finalisation of these documents.

Summary of Scope of Assessment

4.3.9 This section details what aspects have been scoped in and scoped out of the assessment through the scoping process and consultation with stakeholders.

Aspects scoped into the assessment

4.3.10 Potential for temporary effects on the water quality, flow regimes and hydromorphology of watercourses within the study area have been assessed during the construction stage.

4.3.11 Short term effects on the existing land drainage regime and flood risk during construction have also been scoped into the assessment.

Aspects scoped out of the assessment

4.3.12 Several aspects have been scoped out of the assessment, in accordance with the Scoping Opinion. These matters relate to the operation of the Proposed Project, specifically the potential for water pollution, increases in flood risk (due to permanent loss of floodplain storage and impediment of floodplain flows) and surface water runoff, as well as permanent physical disturbance and change in the flow regimes of ordinary watercourses and main rivers at the proposed Converter and Substation site and at watercourse crossings.

4.3.13 These have been scoped out given the embedded design and control measures that have been secured that would avoid effects, e.g. siting of operational AGI out of any floodplains and areas at high risk of surface water flooding or weaken impact source pathways such that significant effects are not likely. An example is the provision of SuDS to attenuate and treat operational drainage discharges as so avoiding effects on the water quality and flow regimes of receiving watercourses.

4.3.14 Reduced water availability to support abstractions and assimilate discharges has also been scoped out for all stages. This is on the basis that the integrity of existing water

interests would be protected during construction of the Proposed Project by the suite of measures detailed in **Application Document 7.5.3 Outline Onshore Construction Environmental Management Plan (CEMP)** to prevent pollution of the water environment, and by the commitments to use water efficiently, as described in **Application Document 6.2.1.4 Description of the Proposed Project**. No new consumptive water abstraction is required to supply the Proposed Project water needs during construction or operation. Therefore, existing local water resource (quantity and quality) would not be significantly impacted and those existing water interests that rely on these resources would not be consequently significantly affected and as summarised in Table 4.6 above.

4.3.15 Effects associated with the future maintenance and decommissioning of the Proposed Project have also been scoped out of the assessment.

4.4 Approach and Methodology

4.4.1 **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** sets out the overarching approach which has been used in developing the ES. This section describes the technical methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of effects and sets out the significance criteria that have been used for the water environment assessment.

Guidance Specific to the Water Environment Assessment

4.4.2 The water environment assessment has been carried out in accordance with the following good practice guidance documents:

- Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive;
- National Highways Design Manual for Roads and Bridges LA113;
- Construction Industry Research and Information Association (CIRIA) publications (various dates);
- Guidance for Pollution Prevention series; and
- A Guide for Masterplanning Sustainable Drainage into Developments (Aecom, on behalf of the Lead Local Flood Authorities for South East England).

Baseline Data Gathering and Forecasting Methods

4.4.3 Baseline conditions of the Proposed Project were established during a desk study using the following sources:

- Statutory Main River map for England (Environment Agency, 2024);
- Environment Agency Flood Map for Planning (Environment Agency, 2023);
- Environment Agency long-term flood risk mapping (including flood risk from surface water and reservoirs) (Environment Agency, 2024);
- GeoSmart GW5 groundwater flood risk map (GeoSmart Information, 2024);
- Groundwater monitoring data from boreholes located at in and proximity to the proposed Minster converter station/substation site (Mott Macdonald, 2024);

- The Southeast River Basin Management Plan (Environment Agency, 2022);
- The EA Catchment Data Explorer (Environment Agency, 2024);
- River Stour IDB online mapping (River Stour (Kent) IDB, 2024);
- Details of consented discharges to surface waters and licensed abstractions from surface waters (Groundsure, 2022) (Groundsure, 2022);
- Information on historical flood events and flood defences from the Environment Agency and Kent County Council (Environment Agency, 2023);
- Modelled flood water level and flood extent data for the River Stour (Environment Agency, 2024);
- EA water quality data archive (Environment Agency, 2024);
- Photographs and field notes from ecology phase 1 and aquatic surveys (AECOM, 2023); and
- Strategic Flood Risk Assessments prepared on behalf of Thanet District Council (Herrington Consulting Ltd, 2022) and Dover District Council (Herrington Consulting Limited, 2019).

Assessment Criteria

4.4.4 The adopted assessment methodology is drawn from DMRB LA113 (Highways England, 2020). Whilst primarily intended for use in assessing the impacts of highways projects on the water environment, the methodology is widely accepted as suitable for assessing the effects of other types of linear infrastructure projects on water environment receptors. The method promotes assessment that is proportionate to the scale and nature of the proposals and that considers the sensitivity of the local water environment to change.

4.4.5 With reference to **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology** the adopted assessment criteria are very similar to that proposed in the overarching methodology, with the exception of an additional receptor sensitivity category of negligible in the generic criteria. The terminology language for defining sensitivity is otherwise the same.

Sensitivity of water environment receptors

4.4.6 Classification of receptor sensitivity has been guided by Table 3.70 of the DMRB LA113 (Highways England, 2020). The criteria are reproduced in Table 4.7.

Table 4.7 Classification of water environment receptor sensitivity

Value of Receptor	Criteria	Typical Examples
Very high	Nationally significant attribute of high importance	Site protected/designated under European Commission (EC) or UK legislation (Special Area of Conservation, Special Protection Area, Site of Special Scientific Interest, Ramsar site).

Value of Receptor	Criteria	Typical Examples
		Watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and a Q95 > 1.0 m^3/s. Watercourse in natural equilibrium exhibiting a range of morphological features (e.g. pools, riffles) that is free from any modification or human influence. Essential infrastructure or highly vulnerable development.
High	Locally significant attribute of high importance	Watercourse having a WFD classification shown in a RBMP and a Q95 <1.0 m^3/s. Very limited signs of modification or other human influences on morphology. More vulnerable development.
Medium	Of moderate quality and rarity	Watercourses not having a WFD classification shown in a RBMP and Q95 > 0.001 m^3/s. Watercourse showing signs of modifications and having a limited range of morphological features. Less vulnerable development.
Low	Lower quality, common place	Watercourses not having a WFD classification in a RBMP and a Q95 flow <0.001 m^3/s. A highly modified watercourse, changed by human pressures. No morphological diversity. Water compatible development.

Magnitude of water environment effects

4.4.7 The magnitude of impact criteria considers the expected scale, extent and duration of change, and the magnitude is assigned following consideration of the measures embedded into the design of the Proposed Project to reduce impacts. Temporary effects have been defined as those whereby the receptor can recover within a period of one year or less. The criteria are reproduced in Table 4.8.

Table 4.8 Classification of magnitude of impact

Magnitude of Impact*	Criteria	Typical Examples
Large adverse	Results in loss of attribute and/or quality and integrity of the attribute	Loss or extensive change to a fishery. Loss or extensive change to a designated nature conservation site. Reduction in waterbody WFD classification.

Magnitude of Impact*	Criteria	Typical Examples
		Pollution of a public water supply or loss of a major industrial/agricultural supply. Extensive change to channel planform, replacement of large extent of natural bed/banks with artificial material. Increase in peak flood level (1% Annual Exceedance Probability (AEP)) of >100 mm.
Medium adverse	Results in effect on integrity of attribute, or loss of part of an attribute	Partial loss in productivity if a fishery. Pollution of a non-potential source of abstraction. Contribution to reduction in waterbody WFD classification. Degradation (quality or reliability) of a potable, commercial or agricultural water supply. Replacement of natural bed material or banks with artificial material over more than 3% of the water body's total length. Increase in peak flood level (1% AEP) of >50 mm.
Small adverse	Results in some measurable change in attribute quality or vulnerability	Minor effects on water supplies. Slight change from baseline conditions of channel bed/banks. Increase in peak flood level >10 mm.
Negligible	Results in effect on attribute of insufficient magnitude to affect the use or integrity	Negligible change in peak flood level (<10 mm). No measurable impact on WFD waterbodies or river channel planform.
Small beneficial	Results in some positive effect on an attribute or reduced risk of negative effect occurring.	Creation of flood storage and reduction in peak flood level (1% AEP) >10 mm.
Medium beneficial	Results in moderate improvement of attribute quality	Contribution to improvement waterbody WFD classification. Improvements to morphological diversity at the local scale. Creation of flood storage and reduction in peak flood level (1% AEP) >50 mm.
Large beneficial	Results in major improvement of attribute quality	Removal of existing polluting discharge or removing likelihood of polluting discharges to a watercourse. Major improvement to morphological diversity at reach scale e.g. through culvert removal.

Magnitude of Impact*	Criteria	Typical Examples
		Improvement in waterbody WFD classification. Creation of flood storage and reduction in peak flood level (1% AEP) >100 mm.
No change	No change, either beneficial or detrimental, to attribute quality	

**Terminology has been adapted from that used in LA113, DMRB (National Highways, 2020)

Significance of effects

4.4.8 The sensitivity of receptor and magnitude of impact are combined to give an overall preliminary significance of effect using the matrix set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**.

Assumptions and Limitations

4.4.9 To ensure transparency within the EIA process, the following limitations and assumptions have been identified:

- No water quality sampling and analysis has been undertaken as it is considered that sufficient baseline data is available to generally characterise the water quality of surface water receptors.
- Data from the Environment Agency has been used to define the current condition and standards of protection provided by existing flood defences, no baseline condition surveys have been undertaken.
- Due to the limited interactions of the operational above ground elements of the Kent Onshore Scheme with fluvial floodplains, **Application Document 6.8 Flood Risk Assessment** has been informed by data collected from the Environment Agency, LLFAs and Kent Stour IDB, no new flood risk models have been developed.

4.5 Basis of Assessment

4.5.1 This section sets out the assumptions that have been made in respect of design flexibility maintained within the Proposed Project and the consideration that has been given to alternative scenarios and the sensitivity of the assessment to changes in the construction commencement year.

4.5.2 Details of the available flexibility and assessment scenarios are presented in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project** and **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**.

Flexibility Assumptions

4.5.3 The environmental assessments have been undertaken based on the description of the Proposed Project provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. To take account of the flexibility

allowed in the Proposed Project, consideration has been given to the potential for effects to be of greater or different significance should any of the permanent or temporary infrastructure elements be moved within the Limits of Deviation (LoD) or Order Limits.

4.5.4 The assumptions made regarding the use of flexibility for the main assessment are set out in Table 4.9.

Table 4.9 Flexibility assumptions

Element of flexibility	How it has been considered within the assessment
Lateral LoD HVDC cables	Lateral deviation of the cable route within the LoD defined for the cables would not be expected to result in any new effects, effects on any new water environment receptors, nor to change the significance of reported effects. Although watercourses may be crossed at a different location, the same watercourses would be affected in the same reach lengths.
Lateral LoD Minster Converter Station and Minster Substation	The assessment considers the potential for the structures to be located anywhere within the defined lateral LoD. The LoD are tightly defined therefore it is considered that there is very limited potential for new or different effects on water environment receptors, due to positioning of these assets anywhere within the defined lateral LoD.
Vertical LoD Minster Converter Station and Minster Substation	This parameter does not affect the likely significance of effects on water environment receptors.
Lateral LoD overhead line	Potential for proposed new pylons to be constructed within the floodplain due to the lateral LoD of the overhead line have been considered and the assessment, based on the assumption that they could be located anywhere within the LoD, with an assumed minimum buffer distance to any watercourse of 8 m. The assessment presented herein is therefore of the potential reasonable worst case footprint of the overhead line works within the LoD.
Vertical LoD overhead line	This parameter does not affect the likely significance of effects on water environment receptors.
Order Limits – temporary construction works	The assessment has considered the possibility of construction works impacting drainage ditches and watercourses anywhere within the Order Limits. With regard to the temporary construction works associated with the overhead line, the assessment presented herein reflects the reasonable worst case that these are located within the floodplain of the River Stour, with a minimum buffer distance to any watercourse of 8 m.

Sensitivity Test

4.5.5 It is likely that under the terms of the DCO, construction could commence in any year up to five years from the granting of the DCO which is assumed to be 2026. Consideration has been given to whether the effects reported would be any different if the works were to commence in any year up to year five. Where there is a difference, this is reported in Section 4.12.

4.6 Study Area

4.6.1 The study area has been defined to include all land within the Kent Onshore Scheme Order Limits, together with an additional 500 m buffer from this boundary. The study area is illustrated in **Application Document 6.4.3.4.1 Study Area and Water Environment Receptors**. This study area is justified based on technical knowledge of similar schemes and has been set following consideration of the distance over which likely significant effects on the water environment can reasonably be expected to occur.

4.6.2 **Application Document 6.8 Flood Risk Assessment** covers a larger study area where necessary, having assessed potential for changes to baseline flood risk at the local catchment scale and within floodplain cells. **Application document 6.9 Water Framework Directive Assessment** includes a Zone of Influence (ZOI) that is set at the water body scale and includes all those WFD waterbodies with the potential to be affected. The ZOI is defined as land within the Kent Onshore Scheme Order Limits, in addition to land within 500 m of this boundary as well as coast waters at the landfall site up to one nautical mile.

4.7 Baseline Conditions

Watercourses, their Water Quality and Hydromorphology

4.7.1 Water features within the study area are illustrated in **Application Document 6.4.3.4.1 Study Area and Water Environment Receptors,** with WFD waterbodies also illustrated in **Application Document 2.11.2 Water Bodies in the River Basin Management Plan – Kent**.

4.7.2 The Kent Onshore Scheme is situated in the hydrological catchment of the River Stour. The River Stour is a designated main river that rises as the Great Stour in Lenham and flows towards and through Canterbury, where it becomes tidal, finally discharging to the sea at Pegwell Bay. The river has extensive areas of floodplain, designated as Environment Agency Flood Zone 3, with some areas mapped as benefitting from flood defences.

4.7.3 The Stour (Kent) is a transitional waterbody within the Southeast RBMP, reflecting the tidal influence on the waterbody within the study area, which extends 35 km upstream of Pegwell Bay to Fordwich Bridge. Under the current cycle (cycle 3, 2022) it achieves Moderate ecological status and fails WFD objectives with regard to chemical status.

4.7.4 With regard to its physical form the Stour is classified as ‘Heavily Modified’, it has a channel width ranging typically between 20 m and 30 m along its tidal reach and its channel has long been influenced by human activity e.g. historical modifications for water supply to mills, and past and present day measures to manage flood risk.

4.7.5 Several reasons for the Stour not achieving Good status are documented in the RBMP and include point source pollution from wastewater treatment works producing high

phosphate levels; diffuse run-off from urban areas and agriculture and low flows due to public supply abstractions. The RMBP sets out measures for the waterbody to help reach a target status of Good by 2027. These focus on initiatives to improve fish passage and tackle illegal fishing, control and eradicate non-native invasive species and implementing recommendations from river restoration plans.

4.7.6 Water quality monitoring data from a station on the river situated approximately 2 km southeast of the Order Limits show that recorded concentrations of Orthophosphate and Dissolved Oxygen exceed published quality standards for these parameters. Further details are provided in Appendix 3.5.A (**Application document 6.3.3.4.A Water Environment Baseline Data**).

4.7.7 There are also networks of watercourses that drain the marshes that fringe the River Stour within the study area. These are managed by the River Stour (Kent) IDB. Key watercourses include the Minster Stream and its tributaries the Stoneless Stream and Clapper Hill Lead Dyke to the north and the Richborough Stream to the south of the Stour.

4.7.8 The Stour Marshes constitute a WFD Operational management catchment, within which there are several monitored waterbodies. The Monkton and Minster Marshes waterbody drains parts of the study area. This waterbody in the current cycle (cycle 3, 2022) achieves moderate overall status. Its chemical status was not assessed in 2022, but data from 2019 indicates a failure. Reasons for not achieving good status are common to those described for the Stour (Kent) waterbody.

4.7.9 With regard to physical form the Monkton and Minster Marshes waterbody is classified as ‘Heavily Modified’, with channels that are generally straight in their alignment and uniform in their geometry, reflecting their key function of facilitating land drainage and flood risk management.

4.7.10 Table 4.10 presents a summary of the WFD baseline status of surface waterbodies within the study area.

Table 4.10 Summary of WFD surface waterbody status data (2022)

Waterbody	Overall Status	Ecological Status	Chemical Status
Monkton and Minster Marshes	Moderate	Overall – Moderate Biological – Moderate Physico-chemcial – Moderate Hydromorphology – Supports Good Specific Pollutants - High	Overall – Fail Priority Hazardous Substances – Fail Priority Substances - Good
Stour (Kent)		Overall – Moderate Biological – Moderate	Overall – Fail Priority Hazardous Substances – Fail

Waterbody	Overall Status	Ecological Status	Chemical Status
		Physico-chemcial – Moderate Hydromorphology – Supports Good Specific Pollutants - High	Priority Substances - Good

4.7.11 Other water features include multiple land drainage ditches and several ponds, some of which support agricultural water supplies.

4.7.12 In accordance with Table 4.7 the water quality attributes of the River Stour waterbody are assigned **Very High** sensitivity, and the Stour Marshes waterbody (including the Minster Stream and its tributaries) has been assigned **High** sensitivity (value) for this attribute. The hydromorphological sensitivity of both of these watercourses is assigned as **Medium**, given their currently 'heavily modified' status, but accounting for the measures to improve this attribute set out in the RBMP. The minor land drains and ponds located in the study area are assigned **Medium** sensitivity for their water quality and **Low** sensitivity for their hydromorphological qualities. Baseline information regarding fisheries and other ecological features of these waterbodies are described in **Application Document 6.2.3.2 Part 3 Kent Chapter 2 Ecology and Biodiversity**, which also presents the assessment of likely significant effects on these attributes.

Existing Water Interests (Surface Water Abstractions and Discharges)

4.7.13 Data to characterise existing water interests has been collected from the Environment Agency and with reference to a Groundsure report (April 2022). The data, which are illustrated in **Application Document 6.4.3.4.1 Study Area and Water Environment Receptors** and summarised in Appendix 3.5.A (**Application document 6.3.3.4.A Water Environment Baseline Data**), shows that watercourses in the study area receive, transport and dilute consented discharges and support licensed abstractions.

4.7.14 Watercourses draining to the Monkton and Minster Marshes waterbody support multiple abstractions for non-potable irrigation water supplies at the local scale but are not in receipt of any consented discharges within the study area. Therefore, with regard to existing water interests this receptor is assigned **Medium** sensitivity. The River Stour does not support any existing abstractions within the study area, however, is in receipt of a number of discharges of final and treated sewage effluent and storm overflows, therefore has been assigned **Medium** sensitivity. Information on groundwater abstractions is included in **Application Document 6.2.3.5 Part 3 Kent Chapter 5 Geology and Hydrogeology**.

Existing Flood Risk and Land Drainage

4.7.15 Based on the online Flood Maps (Environment Agency, 2021), the main source of flood risk within the study area is the River Stour, with areas of Flood Zones 2 and 3 (medium to high) risk associated with the watercourse encroaching onto land within the Order Limits, as illustrated in **Application Document 6.4.3.4.2 Flood Risk Baseline**.

4.7.16 As illustrated, there are two broad areas of Flood Zone 2 (medium risk) and Zone 3 (high risk): one where the Proposed Project makes landfall, and the other further inland,

to the west and south of the Minster Converter and Substation, where the study area crosses the River Stour. The remainder of the Proposed Project is shown to be in Flood Zone 1 (defined as at low risk of flooding from rivers and the sea).

4.7.17 The River Stour (very high sensitivity) is tidally influenced in the study area and therefore floodplain inundation occurs because of a combination of high tides and fluvial peaks. The EA flooding from rivers and the sea data set shows that land within the Order limits to the north of the River Stour has an actual risk of flooding that is classified as very low (less than 0.1% chance each year) or low (with a chance of between 0.1% and 1% chance each year). To the south of the river land within the Order limits is classified with a range of risks. Further details of flood conditions are provided in **Application Document 6.8 Flood Risk Assessment**.

4.7.18 As the Proposed Project is classified as essential infrastructure, the floodplains of the watercourses in the study area are assigned **Very High** sensitivity/value in line with the assessment criteria.

4.7.19 The EA Flood Maps also show the locations of flood defences in the surrounding area, however there are no flood defences directly benefitting the study area.

4.7.20 Flood risk from surface water runoff varies across the study area, with most areas at very low risk from this source. Areas mapped as at high risk closely align with the corridors of the watercourses that flow through the Stour Marshes. Environment Agency data indicates that, where locally, some surface water is predicted to accumulate beyond the channels of watercourses, the depths of flooding are expected to be relatively shallow (generally less than 300 mm). The land drainage regime however relies on the management activities of the Kent (Stour) IDB and waterlogged conditions in some areas have been observed in response to periods of heavy/prolonged rainfall. A **high** sensitivity has therefore been assigned to the watercourses and drains that fulfil a drainage function.

4.7.21 With regard to other potential flooding sources, the Environment Agency reservoir flood risk map shows that the study area within the Stour Marshes is at risk of flooding from this source. However, it is noted that this is a residual risk and that the likelihood of reservoir failure and consequent flooding is very low. The rural setting corresponds to a low risk of flooding from sewers.

4.7.22 The GeoSmart GW5 groundwater flood risk map has been obtained and reports a “Negligible” risk of groundwater flooding across the majority of the study area, with locally areas at low risk. Negligible risk means “groundwater flooding in this area and any groundwater flooding incidence has an annual probability of occurrence of less than 1%”. Data from the ground investigation has also been reviewed, revealing that in proximity to the proposed locations of the Minster Converter Station and Substation, groundwater in the Chalk bedrock is confined by overlying less permeable layers and emergence of groundwater from rising bedrock groundwater levels is a low risk.

4.7.23 Further information on baseline flood risk is included in **Application Document 6.8 Flood Risk Assessment**, which includes a review of historical events within the study area.

Future Baseline

4.7.24 With regard to flood risk and drainage, future baseline conditions have been forecast, drawing on current best practice guidelines (Ministry of Housing, 2024) taking into account the likely impacts of climate change on rainfall intensities, river flows and

tides/sea levels. These future conditions have been considered in order to factor in climate change resilience into the Proposed Project's design, for example, surface water drainage designs for operational infrastructure.

4.7.25 The Kent Onshore Scheme is within the Environment Agency's Stour management catchment (Defra, 2019), where peak rainfall intensity is anticipated to increase between 20% (central estimate) and 45% (upper end estimate) and peak river flow increases range from 38% to 101% in the design lifespan of the Proposed Project.

4.7.26 The implementation of future cycles of WFD management plans driving future improvements in the ecological and chemical quality of water bodies has been considered when assigning value to water environment resources and receptors. However, future improvements in the hydromorphological quality of watercourses have not been presumed in assigning values as improvement in this attribute would require direct intervention, for example, implementation of river restoration projects, and typically longer timeframes. No proposals for such works have been identified for the watercourses within the study area.

4.7.27 The effects of future proposed developments within the Order Limits that are anticipated to be built prior to construction of the Proposed Project have also been considered. Where these developments have potential to cause effects on the baseline attributes of watercourses in the study area, this has been accounted for in the assigned receptor values.

4.8 Proposed Project Design and Embedded Mitigation

4.8.1 The Proposed Project has been designed, as far as possible, following the mitigation hierarchy in order to, in the first instance, avoid or reduce water environment impacts and effects through the process of design development, and by embedding measures into the design of the Proposed Project.

4.8.2 As set out in **Application Document 6.2.1.5 Part 1 Introduction Chapter 5 EIA Approach and Methodology**, mitigation measures typically fall into one of three categories: embedded measures; control and management measures; and mitigation measures. Embedded, and control and management measures are set out below. Additional mitigation measures are discussed in Section 4.10.

Embedded Measures

4.8.3 Embedded measures have been integral in reducing, and where possible avoiding, the water environment effects of the Proposed Project. Measures that that have been incorporated are:

- Sensitive routeing and siting of infrastructure and temporary works, e.g. avoiding situating the Minster Substation and Converter Station (the most vulnerable permanent project components of the Kent Onshore Scheme) in areas that are at risk of flooding from rivers and the sea (Flood Zones 2 and 3) and avoiding areas at high risk of surface water flooding.
- A commitment to make landfall using a trenchless crossing technique beneath the saltmarsh habitat and four watercourses that drain to Pegwell Bay.
- Minster Converter Station and Substation would be served with drainage systems that embed SuDS for attenuation of runoff to green field runoff rates in line with the requirements of the receiving watercourse authorities (Internal Drainage Board,

Environment Agency or Lead Local Flood Authority and provide treatment of runoff (**Application Document 2.14.2 Indicative General Arrangement Plans - Kent**).

- Construction compounds, haul roads and bell mouths served by SuDS systems that would be constructed at the same time as the formation platform of these infrastructure (to reduce the risk of flooding during the construction stage) and which would include pollution controls to address the possibility of runoff contamination with oils and silts. Installation of filter drains/swales/header drains along the perimeter of construction compounds/parallel to haul roads to intercept 'clean' runoff from the adjacent land (**Application Document 2.14.2 Indicative General Arrangement Plans - Kent**).
- Balancing ponds will be provided around the Minster Converter Station and Substation and close to the proposed access road to create a new riparian perimeter of 1.38 km (W25). The final habitat creation proposals will be developed through the final Landscape and Ecological Management Plan so may deviate from areas/ habitats presented here.
- Commitments made within **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** for example adoption of water conservation measures during construction.

Control and Management Measures

4.8.4 Measures relevant to the control and management of impacts during construction have been included within **Application Document 7.5.3.1 Appendix A Outline Code of Construction Practice**. The following measures have been taken into account in assessing the water environment effects of the Proposed Project: GG01, GG05, GG14, GG15, GG16, GG19, GG24, GG28, GH02, W01, W02, W03, W04, W05, W06, W07, W09, W10, W11, W12, W13, W14, W15, W16 and AS05.

4.8.5 GG03 commits the appointed contractor to include a suite of management plans within the CEMP and to monitor conformance with the plans, including for the management of water and soils. GG14 to GG19 describe controls on site runoff and construction activities such as refuelling, materials storage, vehicle and wheel washing, to prevent pollution of the water environment. Where piling is required commitment GH02 details that measures would be adopted to minimise the risks to the water environment associated with this activity. GG24 describes that a plan will be developed setting out procedures to respond to unplanned events (e.g. site flooding, pollution incidents).

4.8.6 The water environment related commitments (W) describe a range of controls that would be put in place to avoid or reduce impacts on watercourses during construction of the Proposed Project, with specific measures with regard to the management of flood risk (W06, W07, W12, W15), and land drainage (W10, W14, AS05).

4.8.7 Commitment W01 details that all qualifying works would be approved under environmental permits issued under the Environmental Permitting Regulations or other relevant secondary consents and permits, with W05 being specific to dewatering activities. W02, W03 and W04 all place controls on the design and methodologies for crossing watercourses in order to reduce impacts on water quality, hydromorphology riparian vegetation and aquatic ecology. W06 and W11 describe the controls that would be put in place to manage surface water drainage during construction and operation. W08 and W09 are linked to safeguarding existing private water supplies. Commitment W12 commits the contractor to monitoring existing flood defences during cable installation in agreement with Environment Agency protocols to ensure no detriment to

the integrity of the defences. Commitments W14 and W15 commit to the preparation of two management plans, linked to drainage and flood risk, which shall consider all construction phase activities and temporary works necessary to deliver the Proposed Project and set out how the contractor would manage these aspects across the worksite, including details of how offsite impacts would be mitigated.

4.9 Assessment of Impacts and Likely Significant Effects

4.9.1 The assessment of the effects of the Proposed Project on water environment receptors described in this section considers the embedded and control and management measures described in Section 4.8.

Construction Phase

4.9.2 The construction of the Kent Onshore Scheme has the potential to impact a range of attributes of the watercourses that flow through the study area and change the existing land drainage regime and flood risk from a range of sources. These impacts would be temporary and are associated with:

- construction of watercourse crossings to provide temporary construction access to the working areas and to allow installation of the underground cables and overhead lines;
- piling activities;
- soil stripping and earthworks;
- establishment and use of construction compounds;
- changes to land surface permeabilities due to earthworks, ground improvement works and the introduction of hard surfacing e.g. at construction compounds and bell mouths; and
- interception of land drainage routes and disruption to existing field drainage systems within the construction swathe.

Water quality

4.9.3 Due to the presence of numerous existing watercourses in the study area a total of 30 crossings would be required along the haul roads and cable route, comprising 26 temporary culverts, 3 permanent culverts and one temporary bridge over the River Stour. In addition, the cable route would cross 5 watercourses using trenchless techniques in the vicinity of landfall. In addition, there would also be several locations where overhead line would be installed over watercourses, with no physical disturbance to these receptors, and other sites (3 No.) where safety scaffolding and netting would be installed over the River Stour whilst installation and restringing of OHL conductors is undertaken. A watercourse crossing schedule is provided at **Application Document 6.3.1.4.A Appendix 1.4.A Crossing Schedules** and accompanying figure **Application Document 6.4.1.4.4 Watercourse Crossings**.

4.9.4 At watercourse crossing locations there would be pollution risks linked to the generation of silted runoff and sedimentation, as well as pollution from construction plant (oils, hydrocarbons) and other materials. At the proposed culvert crossings of the Minster Stream and its tributaries, assigned high sensitivity, localised temporary impacts are assessed as having a magnitude of small adverse, resulting in a **minor adverse** effect,

which is considered to be not significant. This is because the suite of control and management measures (detailed in measure W02) that would be put in place would reduce sources of pollution and weaken pollution pathways. Where smaller ordinary watercourses/drainage ditches (assigned medium sensitivity) are crossed using this technique, localised temporary impacts are assessed as having a magnitude of small adverse, resulting in a **minor adverse** effect, which is considered to be not significant.

4.9.5 At trenchless crossings of watercourses (Stoneless Stream, assigned high sensitivity) and unnamed ordinary watercourses (medium sensitivity), there is also the risk of pollution by silts, as well as the potential for breakout of drilling fluids (bentonite). Details of how the risks of this would be mitigated, and the protocols that would be enacted in the unlikely event of a breakout are provided in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**. With these measures in place, impacts are assessed as having a magnitude of negligible, resulting in a **minor adverse** effect for the Stoneless Stream and **negligible** effect on the unnamed ordinary watercourses, which are considered to be not significant.

4.9.6 Crossing of the River Stour (assigned **very high** sensitivity for its water quality attributes) is proposed via an open span temporary bridge, the design of which would avoid disturbance of the channel and its banks and span the immediate riparian corridor of the river. Impacts are assessed as having a magnitude of negligible, resulting in a **minor adverse** effect, which is considered to be not significant.

4.9.7 Several watercourses (tributaries of the River Stour, assigned **medium** sensitivity) would be over-sailed by newly constructed overhead lines, and where restringing of OHL conductors is required in proximity to these watercourses, safety scaffolding and netting would be installed to prevent debris falling into them. Impacts on their water quality attributes are therefore assessed as having a magnitude of negligible, resulting in a **negligible** effect, which is considered to be not significant.

4.9.8 Soil stripping and the subsequent stockpiling and storage of soil in working areas could also cause deterioration of surface water quality by generating silted or polluted runoff. A larger soil stripped area is anticipated in the underground cable sections, which are drained by the Stoneless Stream (**high** sensitivity) and other ordinary watercourses in the Minster Marshes (**high** to **medium** sensitivity). However robust control measures (AS01, GG20, W02), described in the Register of Environmental Actions and Commitments (**Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**), would reduce sources and remove or weaken impact pathways, such that the impacts on the water quality attributes of these watercourses are therefore assessed as having a magnitude of negligible, resulting in a **minor adverse** to **negligible** effect, which is considered to be not significant.

4.9.9 As illustrated in **Application Document 2.14.2 Indicative General Arrangement Plans - Kent** construction compounds are proposed adjacent to the proposed Converter Station and Substation (K01, K02 and K03), which drain to the Minster Stream (**high** sensitivity) and its tributaries (**high** to **medium** sensitivity); at the A256 bellmouth (K04) (which also drains to tributaries of the Minster Stream), and to the north (K05) and the west (K06) of the landfall site (Stoneless Stream and other ordinary watercourses). At these compounds higher risk activities, such as vehicle fuelling and storage of potentially polluting construction materials, would be managed in accordance with the good practice measures described in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**, and robust site drainage measures would also be in place to reduce pollution risk.

Consequently, the residual risk of pollution would reduce such that there would be no effect on the use or integrity of the watercourse receptors in proximity and receiving discharges from the compounds, satisfying the criteria defining a negligible magnitude of impact. A **minor adverse** to **negligible** effect is therefore assessed, which is considered to be not significant.

4.9.10 Temporary deterioration of water quality could also have indirect effects in terms of detriment to existing abstraction and discharge licence holders due to receiving/supporting watercourses being degraded (River Stour – **medium** sensitivity and watercourses within Minster Marshes – **medium** sensitivity). However, as discussed, when accounting for the embedded and control measures that would be implemented during the Proposed Projects construction, the magnitude of impacts of the water quality of these watercourses is small adverse to negligible, resulting in a **minor adverse** to **negligible** effects, which is considered to be not significant.

Surface water and land drainage

4.9.11 In addition to the potential for water quality effects, soil stripping, earthworks and excavations, ground improvement works and the introduction of hard surfacing would all act to change the current rainfall runoff and land drainage regime. These works activities may also cause severance or disruption to existing field drainage systems (open ditches and buried pipe drainage systems) within the construction swathe. Increased rainfall runoff rates and volumes could arise, consequently increasing flows in receiving watercourses, and potentially encouraging waterlogging of soils and ponding of surface water.

4.9.12 The receptors with potential to be affected by these changes are receiving watercourses, which include several watercourses in the Minster Marshes e.g. Minster Stream (**high** sensitivity), as well as existing land uses and infrastructure (**high** sensitivity).

4.9.13 Commitments, detailed in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** to re-provide suitable means of field drainage (W11/AS05), to handle soils in accordance with a Soil Management Plan (AS01) and to provide robust controls on runoff rates from the working swathe and any runoff from impermeable areas created during construction of the Proposed Project (W06) would reduce the magnitude of effects, both during construction and after construction is completed, to small adverse to negligible, resulting in a **minor adverse** to **negligible** effects, which are not significant.

Hydromorphology

4.9.14 At crossings for access there is potential for detriment to the hydromorphological attributes of watercourse, including change to channel profiles, flow regimes and floodplain connectivity.

4.9.15 The nature of most of the watercourses in the study area is such that they are of **medium** to **low** sensitivity for this attribute, as described in Section 5.7, due to their function as key land drainage features and a history of modification and maintenance for this purpose, which has reduced their hydromorphological diversity. Temporary culverts are proposed for the majority of watercourse crossings for construction access. These culverts would be in place for the duration of the construction works and removed upon completion. Where ditches retaining seasonal flows are crossed, a commitment has been made to install culverts in waterbodies that either preserve the natural bed or

be box culverts with inverts sunk a minimum of 300 mm below the hard bed of the watercourse and natural / existing bed material placed across the inside of the culvert, to maintain existing channel gradients (W03).

4.9.16 Culverts would be sized to maintain the existing land drainage regime (W04) and during installation pumps and pipes would operate to transfer the flow of water from the upstream side to the downstream side, bypassing the worksite.

4.9.17 Culverted reaches would be highly localised and with suitable and site specific culvert design in accordance with the requirements of any secondary consents or permits necessary (from the IDB, LLFA or EA), the magnitude of impacts on the hydromorphology of the subject watercourses would be reduced to small adverse, resulting in a **minor adverse** effects, which are not significant.

4.9.18 At the crossing of the River Stour (**medium** sensitivity) an open span bridge is proposed which would avoid any impact on in channel flows. The abutments of the bridge would have a small footprint within the riparian zone, resulting in the potential for highly localised reduction in floodplain connectivity. The magnitude of this impact is assessed as small adverse, resulting in a **minor adverse** effect, which is not significant.

Flood risk

4.9.19 The Kent Onshore Scheme has largely avoided Flood Zones 2 and 3, however there would be localised interactions at landfall and in the floodplain of the River Stour.

4.9.20 Works within the high risk flood zone, defined as land with an annual chance of flooding of more than 3.3%, are limited to two proposed access routes east of the A526 and works to pylons which include removal of two existing pylons; modification of five existing pylons; construction of six new pylons, and up to six temporary pylons or guyed masts. The temporary works would also be served by surface water drainage measures.

4.9.21 In terms of physical footprint at ground level, a steel lattice pylon has four feet that are each embedded into a foundational muff. The foundational muffs each measure 1m^2, with each pylon therefore having a total footprint at ground level of 4 m^2. Above the muff storage losses would be negligible due to the lattice design. Consequently, there would be very minor losses of storage in the context of the storage available within the floodplain cell of the River Stour, as detailed in the **Application Document 6.8 Flood Risk Assessment** and the new pylons would not cause any significant disruption or blockages of floodplain flow paths. These elements of the Proposed Project are not vulnerable to damages should the pylon bases be subject to inundation and the change to baseline conditions would be negligible.

4.9.22 Good practice measures in the CoCP **Application Document 7.5.3.1 CEMP Appendix A Outline Code of Construction Practice** (GG25) would protect the health and safety of construction personnel in the event of flooding.

4.9.23 Therefore, it is considered that the Proposed Project would have a negligible magnitude of impact on the flood storage and floodplain flow attributes of the River Stour (**very high** sensitivity). Considering the nature and footprint of the Proposed Project, the effect would be short term **minor adverse** and not significant.

4.9.24 The FRA concludes that the Proposed Project is of low vulnerability to other forms of flooding and would not cause any change to the existing risk of flooding from these sources (reservoirs, sewers, groundwater). On this basis, the magnitude of effect is assigned as no change, with an overall effect that is **negligible** and **not significant**.

Operation and Maintenance Phase

4.9.25 Once the Proposed Project has been constructed, working areas would be fully reinstated. Surface water drainage from permanent access routes and the proposed Converter Station and Substation site would pose a low risk of contamination given the treatment measures proposed, which are described in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)** and temporary culverts and the temporary bridge over the River Stour would be removed and watercourse channels reinstated.

4.9.26 Construction phase pollution source-pathway links to water receptors and physical change at watercourse crossings would therefore be substantially reduced/reverted.

4.9.27 As a consequence, and in line with the ES Scoping Opinion (**Application Document 6.15 Scoping Opinion)**, no likely significant effects on water environment receptors, land drainage or flood risk are anticipated during the operational phase of the Proposed Project.

4.9.28 On the basis of the types of maintenance activities that are envisaged, described in **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed Project**, and given the control measures that maintenance activities would be subject to, which are described in **Application Document 7.5.3.2 CEMP Appendix B Register of Environmental Actions and Commitments (REAC)**, impact pathways would be sufficiently weakened such that it is considered unlikely that significant effects on the water environment would arise. This includes effects on watercourse flow regimes, flood risk, hydromorphology and water quality.

Decommissioning Phase

4.9.29 During decommissioning, key activities with the potential to impact on attributes of the water environment are the establishment and use of temporary compounds, the dismantling and demolition of the substation and converter station and the potential for removal and recycling of the underground cables (which may be left in-situ).

4.9.30 The receptors with the potential to be affected are common to the construction phase of the Proposed Project and the magnitudes of impact on the water quality of watercourses and the land drainage regimes would be similar to those described for construction.

4.9.31 All decommissioning activities would be expected to take place in accordance with the relevant environmental permitting regime, and in accordance with all good practice control and management measures. These measures would reduce sources of pollution generated by decommissioning e.g. silted runoff and would weaken source-pathway-receptor pathways. No likely significant effects associated with decommissioning of the Kent Onshore Scheme are therefore anticipated.

4.10 Additional Mitigation

4.10.1 After considering embedded and control measures no likely significant adverse effects have been identified. Additional mitigation measures are therefore not required to further reduce, mitigate or offset likely significant adverse environmental effects on water environment receptors.

4.11 Residual Effects and Conclusions

4.11.1 As described above, no additional mitigation measures are required to avoid or reduce likely significant effects on water environment receptors, therefore residual effects are as discussed in Section 5.9.

4.11.2 The assessment has concluded that there are no likely significant residual effects in relation to water environment receptors during construction, operation and maintenance and decommissioning of the Kent Onshore Scheme.

4.11.3 In accordance with paragraph 5.7.4 of EN-1, an FRA has been submitted as part of the application for development consent. **Application Document 6.8 Flood Risk Assessment** documents that with the embedded and good practice measures included, the Proposed Project would be resilient to climate change and safe from flooding over its lifetime. In addition, the Proposed Project would not cause any detrimental effects on flood risk to lands outside the Order Limits.

4.11.4 A WFD Assessment has been completed and submitted as part of the application for development consent (**Application Document 6.9**). The assessment concludes that the residual effects of the Proposed Project activities on WFD waterbodies would be negligible following implementation of the embedded and good practice measures and that there would be no detriment at the waterbody scale. The assessment concludes that the Proposed Project is compliant with the objectives of the WFD.

4.12 Sensitivity Testing

4.12.1 Under the terms of the DCO, construction could commence in any year up to five years from the granting of the DCO which is assumed to be 2026. It is considered that the effects reported would not differ should the works commence in any year up to year 5. This is because in assigning receptors sensitivities the potential for changes to future baseline conditions (discussion in Section 4.7) have been accounted for and there would be no change in the impact magnitudes that have been assessed, therefore no change to the overall significance of the effects reported.

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