



High Grove Solar

Preliminary Environmental Information Report

Chapter 14 Water Resources and Flood Risk

April 2025

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14 Water Resources and Flood Risk

14.1 Introduction

- 14.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the findings of the preliminary assessment of the likely significant effects arising from the construction, operation and decommissioning of the Proposed Development on Water Resources and Flood Risk.
- 14.1.1.2 This chapter sets out the relevant legislation, policy, standards and guidance applied to the assessment process; consultation undertaken to inform the assessment; assessment methodology; the relevant baseline conditions upon which the assessment is based; embedded and good practice mitigation considered in place before the assessment is undertaken; the likely significant effects that may arise as a result of the Proposed Development considering embedded and good practice mitigation; and any further mitigation requirements to avoid or reduce the likely significant effects; the remaining residual effects following further mitigation; and any monitoring required for remaining significant effects.
- 14.1.1.3 The following matters have been assessed as part of this chapter:
- Compliance with the Water Environment Regulations (WER)/Water Framework Directive (WFD)
 - Surface water
 - Groundwater
 - Water dependent terrestrial ecosystems
 - Water resources
 - Flood Risk and Drainage
- 14.1.1.4 Understanding intra-project effects between topics is an integral part of the Environmental Impact Assessment (EIA) process and have been considered within this chapter. The conclusions of the following topic assessments are considered relevant to the receptors considered within this assessment, and as such are taken into account in the overall assessment for Water Resources and Flood Risk:
- PEIR Chapter 6 Biodiversity: Designated protected sites that may be dependent on surface water or groundwater or could be impacted by changes to the water environment.
 - PEIR Chapter 7 Climate Change: Climate change impacts will directly and indirectly affect the water environment, including flood risk, water resources, levels and flows.
- 14.1.1.5 This chapter is supported by the following figures:
- Figure 14.1 – Surface Water Features
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14.1.1.6 This chapter is supported by the following appendices:

- Appendix 14.1 – Preliminary Flood Risk Assessment
- Appendix 14.2 – Preliminary Drainage Strategy
- Appendix 14.3 – Preliminary WER Compliance Assessment

14.2 Relevant legislation, policy, standards and guidance

14.2.1.1 This section identifies the relevant legislation (Table 14-1), planning policy (Table 14-2), standards and guidelines (Table 14-3) which have informed this assessment, including the methodology and identification of mitigation.

14.2.2 Legislation

Table 14-1 Water Resources and Flood Risk - Legislation

Legislation	Relevance to assessment
Environment Act, 2021 [1] The Environment Act 2021 includes an obligation on Government to set binding targets on water quality.	Primarily of relevance to regulators, with changes to duties for businesses expected in subsequent legislation made under this Act, which will be reviewed as released.
The Water Environment (Water Framework Directive) (England and Wales) Regulations, 2017 [2] The Water Environment (Water Framework Directive) (England and Wales) Regulations, 2017, transpose into English and Welsh law the Water Framework Directive 2000/60/EC and contain provisions to protect rivers, lakes, estuaries, coastal waters and groundwater. These regulations provide for protection of all types of water bodies and include environmental objectives, compliance parameters to be assessed and provide for the protection of areas with specific requirements such as shellfish waters for example. It takes a holistic approach to the sustainable management of water by considering the interactions between surface water, groundwater and water-dependent ecosystems. The EA is the competent authority responsible for delivering the Directive in England.	The requirements of the Water Environment Regulations underpin the impact assessment for the water environment and are specifically considered in Appendix 14.3 to this PEIR which outlines compliance with the legislation.
Conservation of Habitats and Species Regulations, 2017, as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations, 2019 [3] The regulations provide for the designation and protection of important habitats and species as part of the National Site Network (NSN), which include protected sites known as Special Protection Areas and Special Areas of Conservation. The protection of water dependent NSN sites also forms part of the requirements established under the Water Environment (Water Framework Directive) (England and Wales) Regulations, 2017 [2].	The 'Dutch Nitrogen Case' ruled that where an internationally important site (i.e. Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar Sites) is failing to achieve the re-quired condition due to nutrient pollution, the potential for a new development to add to the nutrient load is 'necessarily limited'. This has informed the way in which the regulations apply to pollution related pressures and incidents, and informs the assessment regarding water environment receptors, where relevant.

Legislation	Relevance to assessment
Environmental Permitting (England and Wales) Regulations, 2016 [4] These regulations are intended to manage and reduce pollution from certain industrial activities through permitting.	These regulations are relevant as they set out the requirements in relation to environmental permits, including for discharges into the water environment, which may be required as part of the drainage strategy.
Water Act, 2014 [5] Amends the Water Industry Act, 1991 [6] to outline requirements regarding water and sewerage undertaker infrastructure, permitting and connections	The provisions regarding water industry infrastructure have been considered in development of the drainage design, and informed stakeholder engagement with the relevant water and sewerage undertakers.
Flood and Water Management Act, 2010 [7] The Flood and Water Management Act relates to the management of risks related to flooding and coastal erosion. The aim is to reduce the risk of flooding due to extreme weather events, which are likely to increase as a result of climate change.	The Act requires the design of the Proposed Development to consider changes to flood risk. These requirements underpin the impact assessment for the water environment and are specifically considered in the Flood Risk Assessment (Appendix 14.1).
The Flood Risk Regulations, 2009 [8] Outlines requirements for the assessment of existing flood risk and the need to design new developments to ensure that they are safe from flooding and do not increase flood risk for surrounding receptors and transposes the Floods Directive 2007/EC/60 into law in England and Wales.	These requirements underpin the impact assessment for the water environment and are specifically considered in Appendix 14.1.
Water Act, 2003 [9] Amends the Water Resources Act, 1991 and Water Industry Act, 1991. Act makes provision with respect to the management and conservation of water resources in England and Wales. Its aims include the sustainable use of water resources and protection of water consumer interests.	The Water Act provides a general structure for the management of water resources, that has been considered in the impact assessment.
Water Resources Act, 1991 [10] The Act establishes regulatory controls for water abstraction, water impoundment and protection of water resources.	These requirements underpin the impact assessment for the water environment (specifically impacts to licensed abstractions and regional water resources) and are considered in Section 14.8 and Appendix 14.3

Legislation	Relevance to assessment
Land Drainage Act, 1991 [11] The Land Drainage Act, 1991, identifies the responsible parties for the management and maintenance of land drainage including maintaining flows in watercourses. It provides relevant authorities with the powers to ensure landowners carry out works to maintain flows within watercourses and obtain the relevant consent(s) as required.	This is relevant to any ordinary watercourses that could be impacted by altered flows, and consenting requirements.

14.2.3 Policy

Table 14-2 Water Resources and Flood Risk - Policy

Policy	Relevance to assessment
Overarching National Policy Statement for Energy (NPS EN-1), 2024 [12] Sets broad national policy approach. Section 4.10 of EN-1 sets out generic considerations that applicants and the Secretary of State should take into account to help ensure that renewable energy infrastructure is safe and resilient to climate change, and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime. Section 4.10 of EN-1 advises that the resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, the impact of increased risk of drought as a result of higher temperatures should be covered in the water quality and resources section of the ES. Sections 5.8 and 5.16 addresses flood risk and water quality and resources, outlining approach to assessment of impacts and determining requirement for mitigation (if required). This includes demonstration of the application of the Sequential Test and, where appropriate, the Exception Test.	This PEIR chapter provides a preliminary assessment of water resources (this chapter) and flood risk (Appendix 14.1), to inform the design and ensure that infrastructure is safe and resilient to climate change over its estimated lifetime. Commentary on the application of the Sequential and Exception Tests is provided in the Preliminary Flood Risk Assessment (Appendix 14.1).

Policy	Relevance to assessment
NPS for Renewable Energy Infrastructure (EN-3), 2024 [13] Establishes policy specific to renewable energy schemes, including solar in Section 2.10. EN-3 aims to streamline the consenting process for large-scale solar developments by allowing decisions on solar applications to be made under section 104 of the Planning Act 2008. Solar energy is considered low carbon infrastructure and crucial for achieving net-zero goals, therefore designated Critical National Priority infrastructure under 2.17, 2.18, and Section 3. Therefore, provided assessment principles and legal requirements are met, and the mitigation hierarchy has been applied to avoid, reduce and mitigate significant adverse effects, the benefits [of the infrastructure] will generally be considered to outweigh residual effects. Sets out requirements for solar farms: • Where a Flood Risk Assessment has been carried out this must be submitted alongside the applicant's ES. This will need to consider the impact of drainage. • Where access tracks need to be provided, permeable tracks should be used, and localised Sustainable Drainage Systems (SuDS), such as swales and infiltration trenches, should be used to control any run-off where recommended. • Sites should be configured or selected to avoid the need to impact on existing drainage systems and watercourses. • Culverting existing watercourses/drainage ditches should be avoided. Where culverting for access is unavoidable, applicants should demonstrate that no reasonable alternatives exist and where necessary it will only be in place temporarily for the construction period.	The mitigation hierarchy has been applied to avoid, reduce and mitigate significant adverse effects. A Preliminary Flood Risk Assessment (Appendix 14.1) and Preliminary Drainage Strategy (Appendix 14.2) take into account the requirements of the Policy Statement, with works to watercourses/drains avoided as far as reasonably practical.
NPS for Electricity Networks infrastructure (EN-5), 2024 [14] NPS EN-5 addresses policy for energy transmission. EN-5 does not include further requirements for water resources and flood risk, beyond those general requirements for 'good design' in accordance with the Holford and Horlock Rules (paragraphs 2.9.16 – 2.9.19).	The design of the Proposed Development follows the general requirements for 'good design' in accordance with the Holford and Horlock Rules (paragraphs 2.9.16 – 2.9.19).
National Planning Policy Framework (NPPF), December 2023 [15]	Flood risk has been considered at all stage of the planning and development process to date and will continue to be

Policy	Relevance to assessment
The NPPF sets out the UK Government planning policies for England and seeks to ensure that flood risk is considered at all stages of the planning and development process. The NPPF states that new and existing development should not pose an unacceptable risk of water pollution, and that it should help to improve local environmental conditions, including water quality and actions set out in the River Basin Management Plans (RBMP).	assessed as the design develops, as reported in Appendix 14.1 of this PEIR. The pollution prevention measures outlined in the Construction Environmental Management Plan and Operational Environmental Management Plan are developed to prevent an unacceptable risk of water pollution. Draft Outline versions of these management plans are provided as part of the consultation documents for information.
Anglian River Basin Management Plan (RBMP) [16] The Anglian RBMP was updated in 2022. It provides a baseline classification of the water environment in the Anglian Basin District and highlights statutory objectives for protected areas such as waters used for drinking water, bathing, and designated sites. It lays out the actions needed to improve the water environment and achieve the objectives of the WER.	This RBMP has informed the baseline considered in this assessment, and specifically Appendix 14.3 to this PEIR.
Norfolk Local Flood Risk Management Strategy (2015) [17] Including Local Flood Risk Management Strategy Policy Review, 2021 [18] Under the Flood and Water Management Act 2010, county and unitary authorities are the Lead Local Flood Authorities (LLFAs) with an overview role for local flooding in their area. Norfolk County Council (NCC) is the LLFA in the study area. A Local Flood Risk Management Strategy (LFRMS) is a requirement for all LLFAs to set out how local flood risks will be managed in the county, who will deliver them and how they will be funded. The aim of the Norfolk LFRMS is to work with organisations, businesses and communities to manage flood risk and, where it is practicable, affordable and sustainable to do so, to reduce risk to life, property and livelihoods that may arise from local surface runoff, ordinary watercourse and groundwater flooding. The strategy was reviewed in 2021 against new and emerging national strategies and policies, resulting in three new policies and minor updates to existing policies.	The LFRMS has informed the Preliminary Flood Risk Assessment and Preliminary Drainage Strategy, as outlined in Appendix 14.1 and 14.2 to this PEIR.

Policy	Relevance to assessment
Breckland Local Plan, September 2023 [19] The council's planning policy documents set the strategic context for development in the district. These include governing the decisions made on planning applications and which types of development are suitable for each area. It is a key document that guides development in the district over the next 20 years. Policies of particular relevance to Water Resources and Flood Risk include: • ENV 01 – Green Infrastructure – sets out expectations on incorporating green infrastructure and enhance existing connectivity; recognising the intrinsic value and functionality of the network, design, and regard to green infrastructure strategies. • ENV 09 – Flood Risk & Surface Water Drainage – describes policy on location, SuDs, run-off rates, mitigation, flood risk assessment, and LLFA guidance.	The local plan has been taken into consideration in the development and assessment of flood risk and drainage design (Appendices 14.1 and 14.2).

14.2.4 Standards and guidance

Table 14-3 *Water Resources and Flood Risk - Standards and guidance*

Standards	Relevance to assessment
AECOM (2017) Breckland Council Water Cycle Study Update [20] A detailed water cycle study undertaken for Breckland Council, outlining implications on water environment and water infrastructure from growth.	Assessment of water resources is considered within this assessment. The Applicant is engaging with Anglian Water on water resource requirements.
Construction Industry Research and Information Association (CIRIA) (2023) Environmental good practice on site (5th Edition) (C811) [21] Provides practical advice about managing construction on site to minimise environmental impacts.	This guidance has informed the tertiary mitigation measures outlined in the outline Construction Environmental Management Plan (oCEMP) and embedded mitigation described in section 14.7.
CIRIA (2015) The SuDS Manual (C753) [22]	This guidance has informed the Preliminary Drainage Strategy as outlined in Appendix 14.2 of this PEIR.

Standards	Relevance to assessment
Outlines the planning, design, construction and maintenance of SuDS to assist with their effective implementation within both new and existing developments. It looks at how to maximise amenity and biodiversity benefits and deliver the key objectives of managing flood risk and water quality.	
Environment Agency (2022) Flood risk assessments: climate change allowances [23] When and how local planning authorities, developers and their agents should use climate change allowances in flood risk assessments.	This guidance has informed the Preliminary Flood Risk Assessment, as outlined in Appendix 14.1.
Environment Agency Pollution Prevention Guidance (PPG) notes (PPG1, PPG5, PPG8 and PPG21) [24] Although EA PPG notes were withdrawn in England on 17 December 2015, they still provide a good information source for pollution prevention measures	This guidance has informed the tertiary mitigation measures outlined in the oCEMP and embedded mitigation described in section 14.7.
Environment Agency (2017) Protect groundwater and prevent groundwater pollution [25] Outlines when activities may affect groundwater, what permissions may be needed and how to prevent pollution.	This guidance has informed the tertiary mitigation measures outlined in the oCEMP and embedded mitigation described in section 14.7.
Environment Agency (2017) Groundwater protection technical guidance [26]	This guidance has informed the tertiary mitigation measures outlined in the oCEMP and embedded mitigation.
Highways England (2020) Design Manual for Roads and Bridge (DMRB) LA113 Road Drainage and the Water Environment [27] Sets out the requirements for the assessment and management potential impacts on the water environment for highway projects. This methodology is a standard for assessing risks to the water from all construction projects, not just highways projects.	This standard has informed the assessment methodology in Section 5.5.
Flood Risk and Coastal Change: National Planning Practice Guidance (NPPG) [28]	This guidance has informed the assessment methodology of the Preliminary Flood Risk Assessment reported in Appendix 14.1 of this PEIR.

Standards	Relevance to assessment
Advises how to take account of and address the risks associated with flooding and coastal change in the planning process.	

14.3 Consultation

14.3.1 Scoping opinion

14.3.1.1 An EIA Scoping Report was submitted to the Planning Inspectorate on 6 September 2024, and a Scoping Opinion was published by the Planning Inspectorate on 17 October 2024. A summary of the key comments received and how these have been addressed in this assessment or will be addressed in the Environmental Statement (ES) is presented below:

- The Planning Inspectorate noted the Environment Agency's (EA) advice that supporting evidence must be provided if using the Risk of Flooding from Surface Water Mapping as a proxy for fluvial flood risk, including effects of climate change or to undertake detailed hydraulic modelling. Further engagement has been undertaken with the EA to discuss and agree an approach, which is set out further in Table 14-4 below and Appendix 14.1 Preliminary Flood Risk Assessment.
- The Planning Inspectorate confirmed that potential risks to the geomorphology of the drainage systems and resulting impacts to associated habitats should be scoped in for further assessment.
- The Planning Inspectorate confirmed that the ES should provide details of water supply and demand requirements during construction and operation and identify the potential sources of supply. An assessment of impacts on water supply should be provided where there is potential for likely significant effects, with cross reference to the Climate Change chapter (or information demonstrating agreement with the relevant consultation bodies that significant effects are not likely). The Applicant has included within this chapter and the oCEMP a preliminary assessment on water resources together with measures to mitigate potential impacts on the regional water balance. The Applicant will engage further with key stakeholders on the water resource strategy including the Environment Agency (EA) and Anglian Water.
- The Planning Inspectorate confirmed that where Horizontal Directional Drilling (HDD) is used to cross watercourses that the impacts on watercourse receptors should be assessed where significant effects are likely. Where drilling fluid is required during construction, a breakout plan should be submitted with and secured within the DCO application. Appropriate crossing methods will be confirmed for the ES following reconnaissance surveys to confirm the receptor value of the watercourse and likely impact which may include clear span bridges or HDD. A bentonite breakout management plan is required prior to any trenchless crossings being installed. An outline of measures for a bentonite breakout plan will be included in the oCEMP with the DCO application.
- The Planning Inspectorate requested that the ES should distinguish between flood zones 3a and 3b and specify what infrastructure would be located in which flood risk zones. The ES should also explain what mitigation is in place to

ensure that the Proposed Development is flood resilient and does not increase flood risk elsewhere. The Applicant has included this in Appendix 14.1 Preliminary FRA.

- The Planning Inspectorate advised to seek agreement on watercourse sensitivity and magnitude of impact criterion with the Environment Agency. The Applicant has engaged with key stakeholders on assessment methodologies including on determining receptor values, drainage, water supply and flood risk. The Applicant will continue to engage with stakeholders.
- The Planning Inspectorate confirmed that the Proposed Development would be classed as essential infrastructure, and therefore climate change should be assessed for the higher central (design case) and upper estimate (sensitivity test) in line with government climate change allowances. The Applicant has included this in Appendix 14.1 Preliminary FRA.
- The Planning Inspectorate noted the EA's comment around limitations with existing hydraulic modelling and flood modelling data and ensuring its suitability in line with guidance. The Applicant has engaged with the EA on this point, and a proportionate approach has been agreed as set out in Appendix 14.1 Preliminary FRA.
- The Planning Inspectorate noted that consideration should be given to impacts on groundwater recharge arising from increased interception from the Proposed Development. This has been considered in development of the Preliminary Drainage Strategy in Appendix 14.1.

14.3.1.2 Full responses to comments received as part of the Scoping Opinion will be provided as part of the ES submitted with the application for development consent.

14.3.2 Stakeholder engagement

14.3.2.1 The following stakeholders have been engaged with regards to Water Resources and Flood Risk as part of the assessment process:

- EA
- Norfolk County Council (the LLFA)
- Breckland Council
- King's Lynn & West Norfolk District Council
- East of the Ouse Polver and Nar Internal Drainage Board (IDB)
- Stringsides IDB
- Norfolk Rivers IDB
- Anglian Water

14.3.2.2 The outputs of the engagement undertaken are presented in Table 14-4.

Table 14-4 Water Resources and Flood Risk - Engagement undertaken

Stakeholder	Date engaged	Matters raised	Summary of Responses Received
EA	18 July 2024 7 November 2024 5 December 2024 6 February 2025 6 March 2025	Introductory meeting. Engagement on matters raised in Scoping Opinion, and how the Applicant intends to address in the PEIR and ES. Engagement on approach to FRA and Drainage Strategy (particularly post-PEIR following release of NaFRA2 data)	No significant concerns were raised by the EA at this stage on the Applicant's proposed responses to Scoping Opinion comments but will need to review assessments in detail following PEIR publication. On 6 March 2025 it was agreed that a proportionate assessment could be undertaken at ES using the available modelling or new NaFRA2 data to inform the FRA without undertaking detailed modelling. The Preliminary FRA (Appendix 14.1) has been drafted on the basis of the discussion with the EA.
Norfolk County Council (the LLFA) and Breckland Council	20 August 2024	Introductory call to discuss the project.	The NCC LLFA raised a number of items for consideration, including early engagement with IDB's and approach to drainage; specifically, if no site specific ground investigation to confirm soakaway suitability.
IDBs	9 January 2025	Emailed to confirm that the IDB's consider the statutory consultation process sufficient for engagement going forward (unless design development indicates potential interaction with IDBs).	All three IDB's confirmed that they had no specific concerns or requirements in relation to the project and were content that the statutory consultation process is sufficient to provide any comments at this stage.
Anglian Water	23 January 2025	Introductory meeting to discuss Scoping Opinion matters raised and further engagement.	Anglian Water discussed the scoping opinion and agreed to share further information to support assessment and protective provisions.
Norfolk County Council (the LLFA)	28 February 2025	Engagement with LLFA on approach to Preliminary FRA and Drainage Strategy	NCC LLFA provided comments on Preliminary FRA and Drainage Strategy approach to be considered post-PEIR

14.4 Study area

- 14.4.1.1 The study area for Water Resources and Flood Risk is initially defined as the draft Order Limits plus a 1km buffer, as shown in Figure 14.1 of this PEIR.
- 14.4.1.2 The study area is informed by the ‘source-pathway-receptor’ pollutant linkage principle and was selected based on professional judgement of the potential impacts and pathways related to the project. The study area will be reviewed and, as appropriate, refined as the assessment progresses, taking into account any activities which have the potential to impact water resources at greater distance (such as dewatering and discharges). The study area will ensure that all receptors that are potentially in hydraulic continuity with the Proposed Development that could be reasonably impacted are included (such as downstream receptors). Based on the assessment to date, it is considered that the 1km study area captures all receptors at risk of significant effects.

14.5 Assessment methodology

14.5.1 Baseline sources of information

Desktop sources

- 14.5.1.1 The following desktop sources have been used to inform the existing baseline conditions of the study area:
- Anglian Water’s Water Resources Management Plan 2024 (WRMP24) [29]
 - British Geological Survey (BGS) geological mapping available via the online GeoIndex viewer [30]
 - BGS Lexicon of Named Rock Units [31]
 - BGS Susceptibility to Groundwater Flooding Data [32]
 - Norfolk County Council Flood Risk Management Strategy [17] [18]
 - Department for Environment, Food and Rural Affairs (DEFRA) Magic Map available online [33]
 - DEFRA Catchment Explorer, including WER/WFD Cycle 3 status classification data for surface water and groundwater bodies [34]
 - DEFRA Hydrology Data Explorer [35]
 - Environment Agency abstraction licences from groundwater and surface water within 1km of the draft Order Limits [36]
 - Environment Agency discharge consents to ground or surface water within 1km of the draft Order Limits [36]
 - Environment Agency Flood Model Data (see Appendix 14.1 Preliminary Flood Risk Assessment)
- 14.5.1.2 Private water supplies within 1km of the draft Order Limits have been requested from Breckland Council and King’s Lynn & West Norfolk District Council but were

not available to inform the PEIR. This information will look to be included in the ES once received.

14.5.1.3 Additional sources of information are summarised in the relevant Appendices.

Surveys

14.5.1.4 The following surveys have not yet been completed, however will be undertaken in time to inform the ES to be submitted with the DCO Application:

- A site walkover by water specialists of water receptors in the study area, to confirm the importance of receptors at risk from impact.

14.5.2 Sensitive receptors

14.5.2.1 The sensitive receptors identified and considered in this preliminary assessment are:

- Surface water bodies including watercourses within the study area, shown in Figure 14.1 of the PEIR;
- Bedrock aquifers within the study area, shown in Figure 14.2 of the PEIR;
- Superficial aquifers within the study area, shown in Figure 14.3 of the PEIR;
- WER/WFD surface water, transitional and artificial water bodies within the study area, shown in Figure 14.4 of the PEIR;
- WER/WFD groundwater bodies within the study area, shown in Figure 14.5 of the PEIR;
- Environmentally designated sites within the study area, shown in Figure 2.7, Figure 6.2 and Figure 14.9 of the PEIR;
- Abstractions and discharges within the study area, shown in Figure 14.10 of the PEIR;
- Other water features identified from Ordnance Survey (OS) mapping or literature, such as springs (see 14.6.1.17).

14.5.2.2 Any impacts to standing water (such as pond habitats) are assessed within Chapter 6: Biodiversity, and are not considered further within this chapter.

14.5.3 Assigning receptor importance

14.5.3.1 Whilst other disciplines may consider 'receptor sensitivity', receptor importance is considered here. This is because when considering the water environment, the availability of dilution means that there can be a difference between the sensitivity of a waterbody to impact and its importance. As an example, a small drainage ditch of low conservation and biodiversity value with limited other socio-economic attributes may be very sensitive to impacts, whereas an important regional scale watercourse, may be less sensitive by virtue of its ability to assimilate discharges and physical effects. Irrespective of importance, all controlled waters in England are protected by law from being polluted.

- 14.5.3.2 The importance of the baseline environment has been initially assessed using the criteria defined in Table 14-5. The initial criteria for determination of the importance of receptors has been established based upon available guidance, legislation, statutory designation and/or professional judgement.
- 14.5.3.3 It is noted that the importance of each receptor will be reviewed, based on additional supporting data that becomes available. This includes targeted surveys of receptors which will be undertaken between PEIR and ES. This is particularly the case for smaller water bodies, which may be of higher importance due to their ecological or morphological value.

Table 14-5 Assessment of Importance

Environmental Importance of a receptor	Receptor Typical Examples
Very High	Surface water: - Watercourse having a WFD classification shown in a RBMP and $Q95 \geq 1.0 \text{ m}^3/\text{s}$. - Site protected/designated under UK legislation, (Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site, Site of Special Scientific Interest (SSSI)) Groundwater: - Principal aquifer providing a regionally important resource or locally supporting a site protected under UK legislation (such as designated Groundwater Dependent Terrestrial Ecosystems (GWDTE)). Flood risk: - Essential infrastructure or Highly vulnerable development
High	Surface water: - Watercourse having a WFD classification shown in a RBMP and $Q95 \leq 1.0 \text{ m}^3/\text{s}$. - Species protected under UK legislation, Groundwater: - Principal aquifer providing a locally important resource or supporting a non-designated river or terrestrial ecosystem. Flood risk: - More vulnerable development
Medium	Surface water: - Watercourses not having a WFD classification shown in a RBMP and $Q95 > 0.001 \text{ m}^3/\text{s}$. Groundwater: - Aquifer providing water for agricultural or industrial use with limited connection to surface water. Flood risk: - Less vulnerable development.
Low	Surface water:

Environmental Importance of a receptor	Receptor Typical Examples
	- Watercourses not having an WFD classification shown in a RBMP and $Q95 \leq 0.001 \text{m}^3/\text{s}$. Groundwater: - Unproductive strata. Flood risk: - Water compatible development.

14.5.4 Assigning magnitude of impact

- 14.5.4.1 The magnitude of impact will be determined based on the criteria outlined in Table 14-6, taking into account the likelihood of the impact occurring. The likelihood of an impact occurring is based on a scale of certain, likely or unlikely. Likelihood is considered in the case of water environment impacts only, as likelihood is inherently included within the flood risk assessment.

Table 14-6 Assessment of impact magnitude

Magnitude of Impact	Environmental Impact	Examples
Major	Negative: Loss of an attribute and / or quality and integrity of an attribute. Positive: Creation of new attribute or major improvement in quality of an attribute.	Negative: Deterioration in surface water ecological or chemical WFD element status or groundwater qualitative or quantitative WFD element status. Loss of regionally important public water supply. Loss or extensive change to a designated Nature Conservation Site. Loss or extensive change to a fishery. Increase in peak flood level* ($> 100\text{mm}$). Positive: Improvement in surface water ecological or chemical WFD element status or groundwater qualitative or quantitative WFD element status. Increase in productivity or size of fishery. Creation of additional flood storage and decrease in peak flood level ($>100\text{mm}$).

Magnitude of Impact	Environmental Impact	Examples
Moderate	Negative: Loss of part of an attribute or decrease in integrity of an attribute Positive: Moderate improvement in quality of an attribute	Negative: Measurable decrease in surface water ecological or chemical quality or flow with potential for deterioration in WFD element status. Reversible change in the yield or quality of an aquifer, such that existing users are affected, with potential for deterioration in WFD element status. Increase in peak flood level* (> 50mm). Positive: Measurable increase in surface water ecological or chemical quality or flow with potential for WFD element status to be improved. Measurable increase in the yield or quality of an aquifer, benefiting existing users, with potential for WFD element status to be improved. Creation of flood storage and decrease in peak flood level* (> 50mm).
Minor	Negative: Measurable change to the integrity of an attribute. Positive: Measurable increase, or reduced risk of negative effect to an attribute.	Negative: Measurable decrease in surface water ecological or chemical quality or flow, not affecting existing users or changing any WFD element status. Decrease in yield or quality of aquifer, not affecting existing users or changing any WFD element status. Increase in peak flood level* (> 10mm). Positive: Measurable increase in surface water ecological or chemical quality or increase in yield or quality of aquifer not affecting existing users or changing any WFD element status. Creation of flood storage and decrease in peak flood level* (> 10mm).
Negligible	Impacts which are beneath the level of perception, within normal bounds	Discharges to watercourse or changes to an aquifer which lead to no change in the

Magnitude of Impact	Environmental Impact	Examples
	of variation or within the margin of forecasting error.	attribute's integrity. Negligible change to peak flood level*.
No Change	Neutral effects are predicted where the proposal is unlikely to alter the present or future baseline situation.	Discharges to watercourse or changes to an aquifer which have no appreciable effect. No change to peak flood level*.

*Peak flood level for floods up to and including a 1% annual probability event, including climate change.

Where access or egress routes are affected, the magnitude of the impact will be defined by the change in the Flood Hazard Rating as defined in Defra/EA report FD2320 [37].

The NPPF notes that there should be no increase in flood risk to third parties because of new development. As such, the magnitude of any off-site increase in flood risk will be assessed on a case-by-case basis in consultation with relevant stakeholders.

14.5.5 Significance criteria

- 14.5.5.1 By combining the magnitude of impact (or change) and the importance of each receptor, an assessment is made of the significance of effect, considering the possibility and nature of mitigation. The resultant effects may be either negative (adverse), positive (beneficial) or neutral, depending on the nature of the impact. The significance of effect upon the receptor is assessed using the significance matrix in Table 14-7.

Table 14-7 Significance of effect

		Magnitude of impact				
		No Change	Negligible	Minor	Moderate	Major
Receptor Importance	Very high	Neutral	Slight or Moderate	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate

- 14.5.5.2 Table 14-7 has been revised since the Scoping Report to more closely align with the DMRB LA104 [38] significance matrix, and to more clearly differentiate between magnitude of impact and significance of effect. The revised table has been agreed with the Environment Agency.
- 14.5.5.3 Moderate to Very Large effects are generally considered significant in EIA terms, and Neutral or Slight effects not significant. Significance conclusions for each residual effect will seek to incorporate, as far as practicable, confirmed design and mitigation measures.

14.5.6 Assumptions and limitations

- 14.5.6.1 The design of the Proposed Development and collation of baseline data is ongoing; as such, a precautionary conservative approach has been adopted to the assessment at this stage taking into account the design principles. The assessment will be refined in the next stage as more detailed information becomes available.
- 14.5.6.2 The current baseline understanding of the water environment within the study area has been summarised in section 14.6 below. This understanding has been collated based on a range of publicly available data and information. The accuracy of the baseline condition assessment is reliant upon the accuracy of the data available from the sources.
- 14.5.6.3 The environmental importance of receptors, together with the magnitude of potential impacts and significance, may change during later phases as more information and data becomes available, although a reasonable worst case has been assumed in this assessment to identify likely significant effects. Should surveys identify that certain receptors (such as minor watercourses) are of higher importance than assumed at this stage, the embedded design and control measures will be reviewed accordingly.
- 14.5.6.4 It is assumed that during construction, the contractor will as a minimum conform to all permit/consent/license requirements (such as temporary abstractions) and best practice measures to avoid, reduce and minimise the risk of water pollution or unacceptable physical impacts (without mitigation) on waterbodies.
- 14.5.6.5 New crossings of watercourses should be avoided insofar as reasonably practicable, with a preference to reuse existing crossing points and structures wherever possible.
- 14.5.6.6 It is assumed for this assessment that Horizontal Directional Drilling (HDD) would be undertaken where a 33kV or 132kV cable crosses a main river¹, or a moderate to very high value ordinary watercourse. All other watercourses are assumed to be crossed via open cut trenching at this stage.
- 14.5.6.7 If a new access crossing structure is required over a watercourse, it is assumed for this assessment that a crossing structure suitable to receptor value will be utilised (such as a clear span bridge for a moderate, high or very high value watercourses). It is assumed that a box culvert will be installed if a new access crossing structure is required over a watercourse with a receptor value of low.
- 14.5.6.8 No new crossing structures are required of watercourses with a high value at this time. Further assessment work is required to be undertaken on the structural integrity of the existing crossing of the Wendling Beck. Should it be found to be insufficient, remedial works or a new crossing will be required.

¹ Main rivers are usually larger rivers and streams. They are designated as such, and shown on the EA's Main River Map. The Environment Agency carries out maintenance, improvement or construction work on main rivers to manage flood risk. Other rivers are called 'ordinary watercourses'. Lead local flood authorities, district councils and internal drainage boards carry out flood risk management work on ordinary watercourses. [47]

- 14.5.6.9 Appropriate crossing methods will be confirmed for the ES following reconnaissance surveys to confirm the receptor value of the watercourse and likely impact which may include clear span bridges or HDD.
- 14.5.6.10 It is assumed that following installation of the cables between Panel Areas, the cable trench and surface will be reinstated to its existing condition (or better).
- 14.5.6.11 At this stage, critical infrastructure has been located outside of Flood Zone 2 and 3 (medium and high fluvial flood risk) only. It is understood that updated, more detailed, flood mapping for planning is to be released by the Environment Agency in Spring 2025, that captures both fluvial and pluvial flood risk, and some climate change scenarios. A review of the design will be undertaken following release of the updated flood mapping, and flood risk assessment, to ensure critical infrastructure is outside areas of medium or high flood risk.

14.6 Baseline conditions

14.6.1 Existing baseline conditions

Site topography and land use

- 14.6.1.1 Land within the draft Order Limits consists predominantly of arable farmland, with some highways passing through the draft Order Limit including the A1122 and the A47. Within the study area, there are several small villages and towards the west of the study area is Swaffham, a market town. The west of the study area also covers areas of the Marham Royal Air Force (RAF) base.
- 14.6.1.2 The topography within the draft Order Limits is undulating, varying by approximately 70m across the area; topographical highs of 80-90m AOD (above ordnance datum) towards the east of the draft Order Limits and topographical lows of 10-20m AOD at the Western Panel Area. Topography is also undulating across the wider study area, between 10m AOD to 100m AOD.

Surface water

- 14.6.1.3 Watercourses within the study area are shown in Figure 14.1 of the PEIR.
- 14.6.1.4 There is one main river (as designated by the EA) within the draft Order Limits, Wendling Beck, which runs between two of the Northern Panel Areas. There are a number of unnamed tributaries to Wendling Beck in the northern part of the study area, some of which are also located within the draft Order Limits. Wendling Beck flows north-east to join Black Water², north of Dereham.
- 14.6.1.5 The River Wissey flows in the Southern Panel Area, within the draft Order Limits. Within the draft Order Limits, the river is an ordinary watercourse, becoming a main river to the west of Bradenham outside of the study area. A number of

² Note that Black Water and Blackwater River refer to two distinct/separate rivers in the local area.

tributaries within the Southern and Central Panel Areas flow into the River Wissey which generally flows to the south-west.

- 14.6.1.6 The River Tud is located towards the eastern edge of the study area, but outside the draft Order Limits, and flows east to join the River Wensum in Norwich. The river is an ordinary watercourse within the draft Order Limits becoming a main river downstream (outside the study area).
- 14.6.1.7 In the south-east of the study area (outside of the draft Order Limits) the upper reaches of a number of tributaries are located, which flow into the River Yare or Blackwater River (a tributary of the River Yare).
- 14.6.1.8 There are no main rivers or ordinary watercourses west of Sporle within the draft Order Limits or study area. It is anticipated that there will numerous non-mapped ephemeral field drains present of limited importance from a water environment perspective. Although this will be reviewed as further data becomes available.
- 14.6.1.9 There are no river flow or level gauging stations within the draft Order Limits or study area. The nearest gauging stations are noted below:
- Wendling Beck river level gauging station is located 1.3km to the north-east of the draft Order Limits;
 - Low Street river level gauging station on Blackwater River located 8.3km east of the draft Order Limits;
 - Marham river level gauging station on the River Nar located 3.5km to the north-west of the draft Order Limits.

Groundwater

- 14.6.1.10 The White Chalk Subgroup (Upper and Middle Chalk) dominates the regional geology in the area and is present at outcrop throughout much of East Anglia, including within the study area. The BGS describe the white chalk subgroup as chalk with flints, with discrete marl seams, nodular chalk, sponge-rich and flint seams throughout. The Grey Chalk Subgroup (Lower Chalk) underlies the White Chalk and is at outcrop at the western boundary of the study area.
- 14.6.1.11 The Chalk is of late Cretaceous age and dips very gently to the south-east, as do the Neogene and Quaternary Rocks (gravel, sand, silt and clay) which overlie the Chalk, approximately 18km east of the study area.
- 14.6.1.12 Bedrock geology for the study area is presented in Figure 14.2 of the PEIR. The 1:50,000 scale bedrock geology mapping [30] shows the Middle Chalk (mapped as the Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated)) at outcrop to the west of the study area. Approximately 4km east of the western boundary of the study area, the Middle Chalk dips under the Upper Chalk (mapped as the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation and Culver Chalk Formation (undifferentiated)), which is then present at outcrop across the study area. There are no mapped faults within the study area.

- 14.6.1.13 Superficial geology mapping for the study area is presented in Figure 14.3 of the PEIR. The 1:50,000 scale superficial geology mapping [30] shows most of the study area is overlain by diamicton of the Lowestoft Formation, which the BGS describe as an extensive sheet of chalky till, together with outwash sands and gravels, silts and clays [31]. There are also small areas of sand and gravel of the Lowestoft Formation and clay and silt of the Lowestoft formation around the Central Panel Area. Areas of alluvial deposits and River Terrace Deposits (clay, sand and gravel) are present along watercourses, including Wendling Beck and the River Wissey. Superficial cover becomes more limited to the west of the study area and to west of the Central Panel Area, superficial cover is mostly absent, with the chalk bedrock assumed to directly underlie the soil.
- 14.6.1.14 Hydrometric monitoring data available on Hydrology Data Explorer was consulted [35], this showed that within the study area, there are seven EA groundwater level monitoring stations (of which one is logged data) and no groundwater quality monitoring stations. A data request will be submitted to the EA for any additional hydrometric monitoring data within the study area and will be included in the ES. Groundwater monitoring stations within 1km of the draft Order Limits are shown in Figure 14.6 of the PEIR. Data from the groundwater monitoring stations within the study area show groundwater levels in the study area are generally between 30 – 50mAOD (approximately 5 – 30m below ground level (mbgl)) and tend to fluctuate seasonally.
- 14.6.1.15 The EA aquifer designations [25] [33] within the study area are listed within Table 14-8.
- 14.6.1.16 Aquifer classification definitions are as follows:
- Principal aquifers: provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands.
 - Secondary A aquifers: comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers.
 - Secondary B aquifers: mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers.
 - Secondary (undifferentiated): aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value.
 - Unproductive strata: largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent on them.

Table 14-8 *Aquifer designations*

Geology	Formation/ Member	Aquifer Classification
Bedrock	White Chalk Subgroup	Principal
Superficial	Lowestoft Formation - Diamicton	Secondary (undifferentiated)

Geology	Formation/ Member	Aquifer Classification
	Lowestoft Formation - Clay And Silt	Secondary B
	Lowestoft Formation - Sand And Gravel	Secondary A
	River Terrace Deposits (Undifferentiated) - Sand And Gravel	Secondary A
	Alluvium - Clay, Silt, Sand And Gravel	Secondary A

- 14.6.1.17 OS mapping shows two springs within the study area. One is located in Sadham Toney, approximately 400m south-east of the Southern Panel Area, the other is located just north of Wendling, approximately 900m from the Northern Panel Area. No mapped springs have been identified within the draft Order Limits.

Water Environment Regulations (WER) / Water Framework Directive (WFD)

- 14.6.1.18 Appendix 14.3 of the PEIR summarises the WER/WFD baseline and preliminary compliance assessment (scoping).
- 14.6.1.19 Under the WER/WFD, 'water bodies' are the basic management units and are defined as all or part of a river system or aquifer. These water bodies form part of a larger River Basin District (RBD), for which River Basin Management Plans (RBMPs) are developed and environmental objectives are set. These RBMPs are produced every six years, in accordance with the river basin management planning cycle. The WER/WFD requires the status classification of the condition of all surface water and groundwater bodies and the setting of objectives for maintaining or improving conditions so that water bodies reach and/or maintain 'good' status or higher (unless exceptions are identified).
- 14.6.1.20 The draft Order Limits and study area fall within the Anglian RBD as defined under the WER/WFD. The status classifications, objectives and programme of measures derived by the EA for water bodies located within the study area are outlined within the Cycle 3 Anglian RBMP [16].
- 14.6.1.21 Ten surface water body catchments fall within the study area (all of which are river water bodies), eight fall within the draft Order Limits. There are no transitional water bodies or artificial water bodies within the study area. The surface water bodies within the study area and their status are shown in Table 14-9 and their extents are shown in Figure 14.4. The individual watercourses within waterbody extents are shown on Figures 14.6 to 14.8. Environment Agency biological monitoring sites for these surface water bodies is presented in Figure 14.15.
- 14.6.1.22 Three groundwater body catchments fall within the draft Order Limits and study area. The groundwater bodies within the study area and their status are shown in Table 14-10 and their extents are shown in Figure 14.5.

14.6.1.23 A data request was submitted to the EA on 11 October 2024 to request relevant information which is not publicly available. Where provided, this data is detailed in Appendix 14.3 and includes:

- Extended Waterbody Summary Reports for the relevant water bodies (where available).
- Cycle 2 RBMP “Reasons for Not Achieving Good” (RNAG) investigation reporting for the relevant water bodies (where available).
- Waterbody Level Measure Actions and Heavily Modified Water Body (HMWB) Mitigation Measure Assessments (where available / applicable).

Table 14-9 WER/WFD surface water bodies

Water Body	Management catchment	Ecological status (2019)	Chemical Status (2019)	Ecological Status (2022)
Nar upstream of Abbey Farm (ID: GB105033047791)	North West Norfolk	Moderate	Fail	Data not available ³
Old Carr Stream (ID: GB105033047820)	Cam and Ely Ouse	Moderate	Fail	Good
Gadder (ID: GB105033047880)	Cam and Ely Ouse	Moderate	Fail	Moderate
Wissey – Upper (ID: GB105033047890)	Cam and Ely Ouse	Moderate	Fail	Moderate
Watton Brook (ID: GB105033047870)	Cam and Ely Ouse	Moderate	Fail	Moderate
Stringsie Stream (ID: GB105033047810)	Cam and Ely Ouse	Poor	Fail	Poor
Wendling Beck (ID: GB105034051020)	Broadland Rivers	Moderate	Fail	Moderate
Tud (ID: GB105034051000)	Broadland Rivers	Moderate	Fail	Moderate
Blackwater (Yare) (ID: GB105034051260)	Broadland Rivers	Poor	Fail	Poor
Yare (u/s confluence with Tiffey - Upper) (ID: GB105034051270)	Broadland Rivers	Moderate	Fail	Moderate

Table 14-10 WER/WFD groundwater bodies

Water Body	Overall Status (2019)	Quantitative Status (2019)	Chemical Status (2019)
Cam and Ely Ouse Chalk (ID: GB40501G400500)	Poor	Poor	Poor
North West Norfolk Chalk (ID: GB40501G400200)	Poor	Poor	Poor

³ Data not available in Catchment Data Explorer. Query has been issued to the Environment Agency.

Water Body	Overall Status (2019)	Quantitative Status (2019)	Chemical Status (2019)
Broadland Rivers Chalk & Crag (ID: GB40501G400300)	Poor	Poor	Poor

Environmental Designations

- 14.6.1.24 Within the 1km study area there are four environmentally designated sites, with potential dependence on water. Environmentally designated sites are shown in Table 14-11 and Figures 2.7 and 6.2 of the PEIR. All are listed as SSSI and one is also listed as a SPA. One of the sites is identified as a GWDTE. There are no Ramsar sites, SAC, Local Nature Reserves (LNR), or National Nature Reserves (NNR) within the 1km study area.
- 14.6.1.25 The closest environmentally designated site is Breckland SPA and Breckland Forest SSSI, which lies on the boundary of the draft Order Limits near the Western Panel Area and Cable Corridors. The SSSI/SPA provide suitable breeding habitat for woodlark and nightjar, which occur in internationally important numbers. The site is also listed for supporting five vascular plants listed on Schedule 8 of the Wildlife and Countryside Act and exceptionally rich invertebrate fauna [39]. The site is not considered to have a high dependence on the wider water environment, based on the type of habitat.
- 14.6.1.26 Holly Farm Meadow, Wendling, is located in the north east of the study area, approximately 575m from the draft Order Limits of the Northern Panel Area. The SSSI/GWDTE is a calcareous spring-line meadow with gradations between wet and dry conditions. It supports an area of species-rich unimproved fen grassland which is maintained by seasonal grazing [39]. The site may be susceptible to groundwater impacts.
- 14.6.1.27 Narborough Railway Embankment (SSSI) is located at the western edge of the study area and listed for its diverse chalk grassland. Shallow chalk workings occur in places at the base of the embankment, with these damp hollows containing pyramidal orchid, marsh helleborine and southern marsh orchid. It is anticipated that these damp hollows are primarily fed by localised runoff, with limited dependence on the wider water environment.
- 14.6.1.28 Honeypot Wood SSSI is located at the northern boundary on the study area and listed for ancient, coppiced, ash-maple woodland [39]. The site is not considered to have a high dependence on the wider water environment, based on the type of habitat.

Table 14-11 Environmentally designated sites within 1km

Name	Designation	Distance from the draft Order Limits (m)
Breckland Forest	SSSI, SPA	0 (immediately southwest of the draft Order Limits)
Holly Farm Meadow, Wendling	SSSI, GWDTE	500 northeast
Narborough Railway Embankment	SSSI	650 north
Honeypot Wood, Wendling	SSSI	820 northeast

Water Resources

Water Availability

- 14.6.1.29 Eastern England is classified as severely water stressed, with projected water shortages of 800 million litres per day by 2050 (approximately a third of the current water usage in the region) [40].
- 14.6.1.30 Due to the regional constraints on water resources, Anglian Water currently limits requests for additional water for non-domestic use to 20m³/d. Anglian Water also noted that through its non-domestic water requests policy, that new non-household water supply requests may be declined as they could compromise their regulatory priority of supply existing and planned domestic growth.

Water Designations

- 14.6.1.31 Source Protection Zones (SPZs) are defined by the EA around large and public potable groundwater abstraction sites. The purpose of SPZs is to provide additional protection to safeguard drinking water quality through constraining the proximity of an activity that may impact upon a drinking water abstraction. The following subdivisions are defined within SPZs:
- Zone 1: This zone is defined by a travel time of 50-days or less from any point within the zone at, or below, the water table. Additionally, the zone has as a minimum 50m radius.
 - Zone 2: This zone is defined by the 400-day travel time from a point below the water table. Additionally, this zone has a minimum radius of 250 or 500m, depending on the size of the abstraction.
 - Zone 3: This zone is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.
- 14.6.1.32 SPZs are shown in Figure 14.9 of the PEIR, which shows that the majority of the draft Order Limits and the 1km study area fall within an SPZ (primarily SPZ2 and SPZ3). Within the 1km study area there are three SPZ1s and two SPZ2s. The study area to the west of the Central Panel Area is largely within an SPZ2, the Western Panel Area and nearby Cable Corridor falls within an SPZ1. There are two further SPZ1s located near Bradenham within the study area. The SPZ1 located east of Bradenham, extends into the Cable Corridor just north of the Southern Panel Area. There is one SPZ2 associated with both groundwater supplies near Bradenham which extends into the nearby Cable Corridor and part of the Southern Panel Area.
- 14.6.1.33 Surface water Drinking Water Safeguard Zones (DWSgZs) are catchment areas that influence the water quality for their respective water supplies (surface water), which are at risk of failing the drinking water protection objectives these are designated by the EA. Surface water DWSgZs are shown in Figure 14.1 of the PEIR. Three surface water DWSgZs cover most of the study area. These are for the River Wissey, River Nar and River Wensum catchments.

- 14.6.1.34 Groundwater DWSgZs are established around public groundwater supplies where additional pollution control measures are needed, these are designated by the EA. Groundwater DWSgZs are shown in Figure 14.9 of the PEIR. A small area to the west of the study area (outside the draft Order Limits) is located within a groundwater DWSgZ.
- 14.6.1.35 Nitrate Vulnerable Zones (NVZs) are areas designated by Defra as being at risk from agricultural nitrate pollution. The entire study area falls within an NVZ.

Local Water Resources

- 14.6.1.36 Data on licensed water abstractions from surface water and groundwater within 1km of the draft Order Limits has been received from the EA and are shown in Figure 14.10 of the PEIR. There are 30 licenced groundwater abstractions within the study area and no surface water abstractions. Five of the licenced abstractions are mapped within the draft Order Limits:
- Licence 6/33/48/*G/0021 for Public Water Supply. Point C [Redacted].
 - Licence 6/33/48/*G/0264/R03 for Spray Irrigation. Borehole at Saham Toney
 - Licence 6/33/58/*G/0274/R03 for Spray Irrigation. Borehole at Swaffham
 - Licence AN/033/0058/024/R02 for Spray Irrigation. Borehole D – Narborough
 - Licence AN/033/0058/024/R02 for Spray Irrigation. Borehole A –Narborough
- 14.6.1.37 The public water supply licence is not accurately mapped for security reasons, and as such is anticipated to not be within the draft Order Limits (aligning with no SPZ in the mapped location of the borehole).
- 14.6.1.38 Additional data on private water supplies has been requested from Breckland Council and King's Lynn & West Norfolk District Council. At the time of writing, no data has been received on the location of registered private water supplies. This information will be reviewed and inform the ES, if received.
- 14.6.1.39 Data on discharges to water and groundwater is available from the EA [41]. There are 18 active consented discharges within the study area of which one (Permit AN/EPRMP3220SW/001) is within the draft Order Limits. Consented discharges are presented in Figure 14.10 of the PEIR.

Flood Risk

- 14.6.1.40 Appendix 14.1 of the PEIR outlines the initial flood risk assessment for the Proposed Development, together with available baseline data.
- 14.6.1.41 Flood risk from all sources (fluvial, surface water, groundwater, reservoirs and surrounding properties/infrastructure) in the study area is considered during the assessment of flood risk, where data is readily available. This includes sources where there may be potential to impact flood risk to the Proposed Development (as a receptor itself), as well as the potential for the Proposed Development to impact flood risk to surrounding receptors such as property, infrastructure and land.

- 14.6.1.42 The risk of flooding from surface water (pluvial flooding) is shown in Figure 14.11 of the PEIR. Surface water flood risk primarily corresponds to the smaller upstream tributaries of Wendling Beck and the River Wissey, Gadder and Watton brook which are not explicitly shown in fluvial flood maps. Outside the main channels, pluvial flood risk is generally low.
- 14.6.1.43 The risk of flooding from rivers and seas is shown in Figure 14.12 of the PEIR. Within the study area, sources of fluvial flood risk within the draft Order Limits are primarily from the River Wissey, near the Southern Panel Area, and Wendling Beck near the Northern Panel Area. Most of the tributary watercourses are not explicitly represented in the fluvial flood mapping but are implicitly represented in the surface water flood risk mapping.
- 14.6.1.44 Risk of flooding from reservoirs is shown in Figure 14.13 of the PEIR. EA data on flood extents for all large, raised reservoirs, indicate that a small area on the boundary of the Western Panel Area is at risk of flooding in the event that a reservoir failure occurred and released the water held on a “wet day” when local rivers had already overflowed their banks.
- 14.6.1.45 The BGS susceptibility to groundwater flooding data is shown in Figure 14.14 of the PEIR. Within the draft Order Limits there is generally a limited potential for groundwater flooding to occur. Small areas within the Northern and Southern Panel Areas have potential for groundwater flooding to occur at surface.

Baseline Summary

- 14.6.1.46 Table 14-12 summarises the water environment receptors within the study area and reports their assigned importance in accordance with criteria defined in Table 14-5 14.5.

Table 14-12 Receptor Summary

Receptor	Importance
Surface Water	
Wendling Beck and tributaries having a WFD classification shown in a RBMP	High
River Wissey and tributaries having a WFD classification shown in a RBMP	High
River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP	High
River Tud and tributaries having a WFD classification shown in a RBMP	High
Ordinary watercourses not having a WFD classification shown in a RBMP	Low to Medium

Receptor	Importance
Minor agricultural drains	Low
Groundwater	
White Chalk Bedrock (Principal Aquifer)	Very High
Alluvium (Secondary A Aquifer)	Medium
River Terrace Deposits (Secondary A Aquifer)	Medium
Lowestoft Formation – Sand and Gravel (Secondary A Aquifer)	Medium
Lowestoft Formation – Clay and Silt (Secondary B Aquifer)	Medium
Lowestoft Formation – Diamicton (Secondary Undifferentiated Aquifer)	Medium
Springs (identified and unidentified)	Medium (If supporting a watercourse or WDTE, the importance will be aligned with the receiving receptors importance)
Water Resources	
Licensed Abstractions	High (Very high for Public Water Supplies (PWS))
Private Water Supplies (identified and unidentified)	Medium
Consented Discharges	Low
Potential Water Dependent Terrestrial Ecosystems	
Breckland Forest SSSI	Very High
Holly Farm Meadow, Wendling SSSI (and GWDTE)	Very High
Narborough Railway Embankment SSSI	Very High
Honeypot Wood, Wendling SSSI	Very High
Non-Designated WDTE	High

14.6.2 Future baseline

14.6.2.1 The UK Climate Impact Programme 2018 (UKCP18) [42] predicts the following changes over the next several decades (up to 2099):

- Temperatures will continue to increase, with larger temperature increases estimated in summers.
- The average summer rainfall rate is estimated to decrease, whereas the average winter rainfall rate is estimated to increase.
- An overall increase in extreme weather events.

14.6.2.2 The UK Groundwater Forum concluded the following, as the potential impacts of these climate change on groundwater [43] as:

- A long-term decline in groundwater storage
- Increased frequency and severity of groundwater droughts
- Increased frequency and severity of groundwater-related floods

14.6.2.3 This will lead to greater variability in groundwater levels, with prolonged periods of high and low groundwater levels relating to the variability of rainfall and recharge.

14.6.2.4 The UK Centre for Ecology and Hydrology (UKCEH) have run predictive models to simulate the impacts of climate change, across England, Scotland and Wales, using predictions from UKCP09 [44]. This report analysed 22 individual surface water stations across the East Anglia, however none are within the study area. The closest stations are:

- Stringside at Whitebridge (ID: 33029), 8km south-west of the draft Order Limits
- Wensum at Fakenham (ID: 34011), 14km north of the draft Order Limits
- Thet at Bridgham (ID: 33044), 18km south of the draft Order Limits

14.6.2.5 At these locations, by the 2050s mean flow is predicted to increase by up to 60% in the winter, and decrease by up to 40% in the summer, however projections for both summer and winter are variable.

14.6.2.6 This report also predicts the impact on groundwater stations, for which one station was within the close vicinity of the study area. Washpit Farm groundwater monitoring station is approximately 10km north of Swaffham and 8km north of the draft Order Limits, monitoring the Chalk. The change between mean monthly groundwater levels simulated from Future Flows Climate at Washpit Farm for the period 2040-2069 and 1961-1990 varies between 1 to -5m. The 11 future climate projections show differing changes, although most projections show an overall decrease in groundwater levels, particularly in the winter.

14.6.2.7 For flood risk, future climate change will increase the likelihood of extreme storm events. Planning Policy Guidance for flood risk and climate change outlines the required climate allowances to be applied to either peak river flows or to peak rainfall intensity (depending on the nature of the analysis) [45]. The allowances

that will need to be applied are determined by the location, the flood zone the development is in, and the vulnerability classification of the Proposed Development.

14.6.2.8 In accordance with the methodology set out in ES Chapter 15 Cumulative Effects Assessment of this PEIR, the following developments are relevant to this assessment and have been considered present in the future baseline as they are likely to have been completed before Proposed Development commences:

- Norfolk Vanguard (EN010079)
- Norfolk Boreas (EN010087)
- East Bilney Quarry (FUL/2023/0030 / C/3/2010/3028)
- Land to South of Field Lane (FUL/2023/0029)
- East Bilney Quarry (FUL/2023/0031)
- Land South of B1108 (FUL/2024/0041 / FUL/2020/0050)
- Dudgeon Onshore Substation (3PL/2012/0703/F)
- Land to the South of Lynn Road (FUL/2023/0047)

14.7 Design Principles, Embedded and good practice measures

14.7.1 Design Principles

14.7.1.1 The Proposed Development is being designed with regard to a set of design principles, as described in Chapter 2, paragraph 2.4.9.3 of this PEIR.

14.7.2 Embedded and good practice measures

14.7.2.1 Embedded measures are modifications to the design of a scheme, made during the pre-application phase, that are an inherent part of the design and do not require additional action to be taken. Good practice measures are standard approaches and actions undertaken to avoid or reduce environmental impacts in line with best practice guidance and legislative requirements.

14.7.2.2 The Proposed Development is currently evolving through an iterative design process. Embedded mitigation measures for the Proposed Development relevant to Water Resources and Flood Risk already committed to include:

- Construction
 - New crossings of watercourses should be avoided insofar as reasonably practicable, with a preference to reuse existing crossing points and structures wherever possible. Appropriate crossing methods will be confirmed for the ES following reconnaissance surveys to confirm the receptor value of the watercourse and likely impact which may include clear span bridges or HDD.

- Minimum 9m offset from all infrastructure (including fencing) from bank top of all riparian boundaries and watercourses (except where crossing).
- SuDS will be provided at source, where practicable, ensuring that surface water run-off is managed consistently with existing site conditions.
- Access tracks will be permeable using compacted gravel to allow water to filtrate through and maintain greenfield runoff rates.
- Suitable standoff from springs or boreholes (standoff will be dependent on construction activities, local conditions and receptors to prevent derogation).
- Where possible, underground cables would be installed using a cable plough or trenching. These are considered the most efficient methods of cable installation.
- Operation
 - Minimum 9m offset from all infrastructure (including fencing) from bank top of all riparian boundaries and watercourses (except where crossing).
 - SuDS will be provided at source, where practicable, ensuring that surface water run-off is managed consistently with existing site conditions.
 - Access tracks will be permeable using compacted gravel to allow water to filtrate through and maintain greenfield runoff rates.
 - ⊖ Avoid locating critical infrastructure within Flood Zone 2 and 3, ensuring solar PV modules are raised above the predicted maximum flood depth for a 100 year plus climate change scenario.
- Decommissioning
 - As per construction measures.

14.7.2.3 In addition, a suite of management plans will be in place for the Proposed Development, those relevant to Water Resources and Flood Risk include:

- oCEMP
- Outline Operational Environmental Management Plan (oOEMP)
- Outline Battery Safety Management Plan (oBSMP)
- Outline Decommissioning Environmental Management Plan (oDEMP)

14.7.2.4 These management plans incorporate good practice measures, as well as any further mitigation identified during the EIA.

14.7.2.5 Draft outline versions of these management plans are provided with this PEIR for review during statutory consultation. These will be updated and submitted with the DCO application to secure the commitments contained within. Appropriate Requirements will be included in the DCO application to ensure these management plans will be developed to full versions and submitted to the relevant planning authority for approval. This will take place prior to the commencement of relevant works and measures described in them are implemented.

14.7.2.6 Measures to be incorporated into the management plans for the Proposed Development relevant to Water Resources and Flood Risk include:

- Construction (oCEMP)
 - Licensing and permitting requirements
 - Surface and groundwater management measures
 - Construction drainage
 - Sediment control
 - Pollution prevention and control
 - Foulwater management
 - Protection of existing water supplies
 - Construction flood risk management
 - Monitoring
 - Measures to minimise construction water demand
 - Requirement for a Bentonite Breakout Management Plan to be produced
- Operation (oOEMP and oBSMP)
 - Measures to manage and minimise operational water demand
 - Drainage strategy (see Appendix 14.2)
 - Flood risk management
 - Monitoring
- Decommissioning (oDEMP)
 - Water management measures
 - Drainage
 - Sediment Control
 - Pollution prevention and control
 - Flood risk management
 - Monitoring

14.8 Assessment of effects

14.8.1 Construction

14.8.1.1 Specific construction activities with the potential to harm the water environment are:

- Earthworks and site clearance activities such as stripping of topsoil, trenching, storage and capping of soil.
- Underground cable installation (cable plough or trenching) up to 1.6m deep, and reinstatement works.
- Piling and erection of solar PV module support structures, with foundations to a depth of circa 1m.

- Excavation and construction of foundations and piling for the substations, if required, up to 2m.
- Construction of access tracks (including potential watercourse crossings), laydown areas and construction compounds.
- Construction of concrete pad foundation for hybrid packs, inverters, transformers and Battery Energy Storage System (BESS).
- HDD (or other trenchless methods) under or in close proximity to watercourses, where utilised.
- Construction vehicles travelling to and from the Proposed Development.
- Water usage impacting local or regional water resources.

14.8.1.2 During the construction phase, the following potential risks to the water environment have been identified:

- Physical loss of land drains present within the draft Order Limits and associated impacts to hydromorphological condition and aquatic habitat quality, as a result of construction activities.
- Physical impacts to watercourses as a result of cable installation, or access track construction.
- Changes to surface runoff patterns and land drainage as a result of construction activities, resulting in altered surface water flows and water levels within the draft Order Limits and downstream, including flood risk.
- Reductions in water quality and aquatic habitat quality of surface water bodies present within the draft Order Limits, or downstream waterbodies, as a result of ground disturbance and associated sediment releases during construction activities.
- Subsoil compaction and reduced infiltration, resulting in increases in localised overland flooding and reduced recharge to groundwater.
- Impacts on local hydrogeology and groundwater resources including any private water supplies and abstractions. Changes to groundwater levels, flows and quality arising from construction activities.
- Reductions in water quality and increased turbidity of groundwater, resulting from the groundwork and associated sediment releases during construction activities.
- Reductions in water quality of surface water bodies or groundwater bodies present within the draft Order Limit, as a result of accidental release of contaminants. This could be fuel oils and lubricants from construction plant, vehicles and traffic movements, accidental spillage during refuelling and/or leakage from storage, spillage of cement, concrete material and alkaline wash waters, releases from wheel washing, waste storage or HDD breakout.
- Increased risk of flooding within the draft Order Limits and to neighbouring sites due to potential changes in nature and extent of the floodplain, including displacement or changes in floodplain storage.

- Potential increased exposure to flood risk during the construction phase by introducing new receptors in areas potentially at risk of flooding, namely construction infrastructure and personnel.
- Potential changes to local or regional water balance as a result of construction water demand.

Surface Water Quality

Risks to Surface Water Quality

- 14.8.1.3 The primary risks to surface water quality are considered to be:
- Release of sediments as a result of ground disturbance during construction activity.
 - Accidental release of contaminants from construction activity.
 - Breakout from HDD activities.
- 14.8.1.4 The construction methodology for installation of the solar PV modules involves piling the stilts 1m into the ground with no large scale excavations proposed. A flat area of land is required to install the hybrid packs (including inverter units, DC-DC converters and BESS), standalone inverter units, standalone BESS units, customer switchgear and substations, which may require some minor excavation. This supporting infrastructure will sit on a concrete base with a gravel apron.
- 14.8.1.5 Stockpiling of construction materials and excavated spoil may create a new source of sediment that could contaminate or pollute surface waters if they are not stored correctly, due to risk of washout. These contaminants and pollutants may include fuels, oils, chemicals and concrete.
- 14.8.1.6 Discharge of water from construction works may also distribute contaminants and pollutants to surface water receptors or their catchments, or create an accumulation of these substances where soakaway basins are used.
- 14.8.1.7 Where required, main rivers will be crossed utilising a trenchless methodology (most likely HDD), where breakout of drilling fluids can occur. Minor watercourses will be crossed via open cut trenching (subject to receptor importance), where sediment could be mobilised.

Receptors

- 14.8.1.8 The surface water receptors considered:
- Wendling Beck and tributaries having a WFD classification shown in a RBMP
 - River Wissey and tributaries having a WFD classification shown in a RBMP
 - River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP
 - River Tud and tributaries having a WFD classification shown in a RBMP
 - Ordinary watercourses not having a WFD classification shown in a RBMP

- Minor agricultural drains.

14.8.1.9 There are no surface water abstractions within the study area which could be impacted.

Mitigation

- 14.8.1.10 Embedded within the design are minimum offsets from watercourses and their associated riparian zones, which would limit works required in proximity to the watercourses (except temporary open cut cable crossings or construction of access tracks).
- 14.8.1.11 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR and pollution prevention and control measures outlined in Appendix 14.3 of the PEIR further detail the control measures to prevent and control pollution incidents (both sediments and chemicals) from occurring.
- 14.8.1.12 The oCEMP will include the requirement for a Breakout Management Plan to be developed and outline the key measures that will need to be implemented to prevent and control any potential breakout from trenchless crossings on the aquifer.

Impact

- 14.8.1.13 With embedded mitigation and good practice pollution prevention measures implemented, it is considered that the sources and pathways can be minimised, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.1.14 Given the negligible magnitude of impact for receptors of high importance (Wendling Beck, River Wissey, River Yare/Blackwater River and River Tud watercourses shown in a RBMP), the overall effect of temporary changes in surface water quality during construction is considered to be Slight Adverse, which is **Not Significant**. For watercourses of medium and lower importance (ordinary watercourses not having a WFD classification shown in a RBMP or minor agricultural drains), the overall effect is considered to be Neutral, which is **Not Significant**.

Surface Water Quantity and Geomorphology

Risks to Surface Water Quantity and Geomorphology

- 14.8.1.15 The primary risks to surface water quantity are considered to be:
- Physical loss of land drains present within the draft Order Limits and associated impacts to hydromorphological condition and aquatic habitat, as a result of construction activities.

- Changes to surface runoff patterns and land drainage as a result of construction activities, resulting in altered surface water flows and water levels within the draft Order Limits and downstream, including flood risk.
 - Impacts to hydromorphological conditions, aquatic habitat and flood risk from open cut trenching across waterbodies during cable installation.
 - Impacts to hydromorphological conditions, aquatic habitat and flood risk from culverting lower importance watercourses for access tracks.
 - Potential changes to water balance as a result of construction water demand.
- 14.8.1.16 Direct physical works to the identified rivers and their mapped tributaries that could impact the aquatic or riparian zones, including altering the geomorphology or impounding flows will be limited to temporary cable trenching and access track culverting. All other construction will be offset from the bank top. Agricultural field drains may also be temporarily impacted during installation of the temporary works.
- 14.8.1.17 During construction, construction water management has the potential to alter natural runoff and land drainage pathways, diverting water between surface water catchments. This potential interruption and diversion of flow may lead to a reduction or loss of water supply to watercourses and potential degradation of habitat, as well as impact flood risk.
- 14.8.1.18 The region is severely water stressed and demand for water could negatively impact water resources regionally.

Receptors

- 14.8.1.19 The surface water receptors considered:
- Wendling Beck and tributaries having a WFD classification shown in a RBMP
 - River Wissey and tributaries having a WFD classification shown in a RBMP
 - River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP
 - River Tud and tributaries having a WFD classification shown in a RBMP
 - Ordinary watercourses not having a WFD classification shown in a RBMP
 - Minor agricultural drains.
 - Consented discharges

Mitigation

- 14.8.1.20 The design of the Proposed Development limits the requirement for physical interaction with existing watercourses during the construction works. No physical interaction with main rivers will occur. Cable trenching across minor watercourses will be short in duration, whilst access track culvert installation will be limited to lower importance watercourses.
- 14.8.1.21 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR details the measures to be implemented during the temporary works to minimise

alteration of the natural water environment, by maintaining runoff at greenfield rates and not altering flow paths.

- 14.8.1.22 The oCEMP will include measures in relation to reinstatement, water management, flood risk and drainage that will be implemented to minimise impacts from open cut cable crossings and culverting.
- 14.8.1.23 No abstractions from the water environment or connections to mains supply are proposed for the Proposed Development, with all potable water to be tankered to site. Based on the Applicant's experience at other Solar developments, the water demand during construction will be significantly less than 20m³/d; the volume over which new and unplanned non-domestic requests will be automatically declined by Anglian Water or at which an abstraction licence is required from the Environment Agency. The oCEMP includes a requirement for the preparation of a Construction Water Management Plan (CWMP), prior to construction by the Applicant. The management plan would detail water requirements, sources of supply and measures to reduce consumption, and foul water management.

Impact

- 14.8.1.24 With embedded mitigation, appropriate construction drainage design and good practice water management measures implemented (as outlined in Appendix 14.2 and the oCEMP), it is considered that the impacts to surface water quantity can be minimised by maintaining natural catchments in line with their baseline condition, resulting in a negligible magnitude of impact.
- 14.8.1.25 Physical impacts to watercourses will be limited to medium and lower importance watercourses (such as ordinary watercourses and agricultural land drains). Construction works will be limited in duration, with pollution prevention measures implemented to minimise the risk of sediment mobilisation or release of contaminants. Based on the above, the physical works are considered to result in a minor magnitude of impact.

Significance of Effect

- 14.8.1.26 Given the negligible magnitude of impact for the receptors high importance (Wendling Beck, River Wissey, River Yare/Blackwater River and River Tud watercourses shown in a RBMP), the overall effect of temporary changes in surface water quantity for the majority of watercourses during construction is considered to be Slight Adverse, which is **Not Significant**.
- 14.8.1.27 For watercourses of medium or lower importance (ordinary watercourses not shown in a RBMP or agricultural drains) where direct physical impacts are anticipated, a minor magnitude of impact is considered, which results in an overall effect of Slight Adverse, which is **Not Significant**.

Groundwater Quality

Risks to Groundwater Quality

14.8.1.28 The primary risks to groundwater quality are considered to be:

- Reductions in water quality and increased turbidity of groundwater, resulting from the groundwork and associated sediment releases during construction activities.
- Impacts on local hydrogeology and groundwater resources including any private water supplies, licensed abstractions and springs as a result of planned construction activities, including trenchless crossings, excavations and piling works.
- Reductions in water quality of groundwater bodies present within the draft Order Limit, as a result of accidental release of contaminants. This could be fuel oils and lubricants from construction plant, vehicles and traffic movements, accidental spillage during refuelling and/or leakage from storage, spillage of cement, concrete material and alkaline wash waters, releases from wheel washing, waste storage or HDD breakout.

14.8.1.29 Subterranean construction activities such as piling/drilling may create pathways to more sensitive aquifers through relatively low permeability formations. New flow pathways for pollution may also be created by the cable trenches or removal of topsoil and exposure of underlying soils which can increase rainwater infiltration which may result in increased leaching of pollutants into the underlying aquifer. The activities themselves can also act as a source of pollution, depending on the materials used (cements, bentonite etc), construction methodologies and control measures in place.

14.8.1.30 Accidental discharge of contaminants from construction works may also introduce or mobilise contaminants into the aquifer, and further afield to dependent receptors such as licensed abstractions. Accumulation of substances could also occur where soakaway basins are used without appropriate treatment trains (such as siltbusters), prior to discharge.

Receptors

14.8.1.31 The groundwater receptors considered:

- White Chalk Bedrock (Principal Aquifer)
- Alluvium (Secondary A Aquifer)
- River Terrace Deposits (Secondary A Aquifer)
- Lowestoft Formation – Sand and Gravel (Secondary A Aquifer)
- Lowestoft Formation – Clay and Silt (Secondary B Aquifer)
- Lowestoft Formation – Diamicton (Secondary Undifferentiated Aquifer)
- Springs
- Licensed Abstractions
- Private water supplies
- Consented Discharges
- GWDTE

- 14.8.1.32 It is noted that the watercourses in the area are chalk rivers, and there will be interaction between the groundwater and surface water. The potential implications on watercourses are considered when assessing the potential magnitude and significance of impacts on the underlying aquifers.

Mitigation

- 14.8.1.33 Receptors susceptible to local pollution incidents (such as groundwater dependent terrestrial ecosystems, licensed abstractions and private water supplies) will be avoided as the design develops. However, the entire Proposed Development overlies the Principal Chalk Aquifer, and various SPZ's associated with local public water supplies. As such, pollution prevention and control measures are critical to preventing impacts to groundwater receptors.
- 14.8.1.34 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR and pollution measures outlined in the oCEMP detail the control measures to both prevent and control pollution incidents (both sediments and chemicals) from occurring.
- 14.8.1.35 The oCEMP includes the requirement for a Breakout Management Plan to be developed and outline the key measures that will need to be implemented to prevent and control any potential breakout from trenchless crossings on the aquifer.

Impact

- 14.8.1.36 With embedded mitigation, appropriate construction drainage design and good practice water management measures implemented (as outlined in the oCEMP and Appendix 14.2), it is considered that the risks to groundwater quantity can be minimised, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.1.37 Given the negligible magnitude of impact for receptors of very high and high importance (Chalk Principal Aquifers, licensed abstractions and GWDTE), the overall effect of temporary changes in groundwater quality during construction is considered to be Slight Adverse, which is **Not Significant**. For receptors of medium and lower importance (secondary aquifers, springs, private water supplies and consented discharges), the overall effect is also considered to be Slight Adverse, which is **Not Significant**.

Groundwater Quantity

Risks to Groundwater Quantity

- Subsoil compaction and reduced infiltration, resulting in increases in localised overland flooding and reduced recharge to groundwater.

- Impacts on local hydrogeology and groundwater resources including any private water supplies and abstractions - changes to groundwater levels and flows arising from construction activities.
 - Potential changes to water balance as a result of construction water demand.
- 14.8.1.38 Construction works may locally reduce the rate of recharge to aquifers where the runoff is managed and then discharged, which has the potential to reduce groundwater levels and locally alter flow pathways. This in turn could reduce baseflow to dependent receptors including springs and watercourses.
- 14.8.1.39 Where works require groundwater control measures, this could also locally reduce groundwater levels and divert flows, potentially impacting dependent receptors.
- 14.8.1.40 The region is severely water stressed and demand for water could negatively impact water resources regionally.

Receptors

- 14.8.1.41 The groundwater receptors considered:
- White Chalk Bedrock (Principal Aquifer)
 - Alluvium (Secondary A Aquifer)
 - River Terrace Deposits (Secondary A Aquifer)
 - Lowestoft Formation – Sand and Gravel (Secondary A Aquifer)
 - Lowestoft Formation – Clay and Silt (Secondary B Aquifer)
 - Lowestoft Formation – Diamicton (Secondary Undifferentiated Aquifer)
 - Springs
 - Licensed Abstractions
 - Private water supplies
 - GWDTE

Mitigation

- 14.8.1.42 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR details the measures to be implemented during the temporary works to minimise alteration of the natural water environment, by maintaining runoff at greenfield rates and not altering flow paths.
- 14.8.1.43 Groundwater control measures are anticipated to be relatively limited due to the shallow nature of the works, and methodologies. If required any construction dewatering would be undertaken in line with the appropriate regulatory licenses and permits, and be non-consumptive.
- 14.8.1.44 No abstractions from the water environment or connections to mains supply are proposed for the Proposed Development, with all potable water to be tankered to site. Based on the Applicant's experience at other solar developments, the water demand during construction will be significantly less than 20m³/d; the volume over which new and unplanned non-domestic requests will be automatically

declined by Anglian Water or at which an abstraction licence is required from the Environment Agency. The oCEMP includes a requirement for the preparation of a Construction Water Management Plan (CWMP), prior to construction by the Applicant. The management plan would detail water requirements, sources of supply and measures to reduce consumption, and foul water management.

Impact

- 14.8.1.45 With embedded mitigation (shallow infrastructure), appropriate construction drainage design and good practice water management measures implemented (as outlined in the oCEMP and Appendix 14.2), it is considered that the impacts to groundwater quantity can be minimised by maintaining natural groundwater behaviour in line with their baseline condition, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.1.46 Given the negligible magnitude of impact for receptors of very high and high importance (Chalk Principal Aquifers, licensed abstractions and GWDTE), the overall effect of temporary changes in groundwater quantity during construction is considered to be Slight Adverse, and **Not Significant**. For receptors of medium and lower importance (secondary aquifers, springs, private water supplies and consented discharges), the overall effect is considered to be Slight Adverse, and **Not Significant**.

Environmental Designations and Water Dependent Terrestrial Ecosystems

- 14.8.1.47 Within the study area, there are four environmentally designated sites, all designated as SSSI.
- 14.8.1.48 Holly Farm Meadow, Wendling is a SSSI approximately 500m north-east of the draft Order Limits, which is designated by the EA as a GWDTE. The site is situated in the valley of a small tributary of the River Wensum and is an example of a calcareous spring-line meadow with gradations between wet and dry conditions. It supports an area of species-rich unimproved fen grassland which maintained by seasonal grazing. As such, any impacts to groundwater levels or flows at this location could negatively impact the site.
- 14.8.1.49 Breckland Forest is a SSSI and SPA immediately south west of the draft Order Limits (but not within). The site is not designated by the EA as a GWDTE. Based on the details provided within the designation citation, the site is anticipated to have limited dependence on the wider groundwater and surface water environment (i.e. limited pathway for impact from Proposed Development).
- 14.8.1.50 Narborough Railway Embankment is a SSSI approximately 650m north of the draft Order Limits. The site is not designated by the EA as a groundwater dependent terrestrial ecosystem. Based on the details provided within the designation citation, the site is anticipated to have limited dependence on the wider

groundwater and surface water environment (i.e. limited pathway for impact from Proposed Development).

- 14.8.1.51 Honeypot Wood, Wendling is a SSSI approximately 820m northeast of the draft Order Limits. The site is not designated by the EA as a groundwater dependent terrestrial ecosystem. Based on the details provided within the designation citation, the site is anticipated to have limited dependence on the wider groundwater and surface water environment (i.e. limited pathway for impact from Proposed Development).

Impact

- 14.8.1.52 Three of the four designated sites are considered to have limited dependence on the wider water environment, with only Holly Farm Meadow being considered a GWDTE susceptible to impacts.
- 14.8.1.53 With embedded mitigation (shallow infrastructure), compliance with regulatory requirements and good practice water management measures implemented (as outlined in the oCEMP), it is considered that the impacts to any of the designated sites will be limited by maintaining natural surface water catchments and groundwater levels/flows in line with their baseline condition, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.1.54 Given the negligible magnitude of impact for receptors of very high importance, the overall effect of any temporary changes in water quantity or quality during construction is considered to be Slight Adverse, and **Not Significant**.
- 14.8.1.55 For the ES, a review will be undertaken of ecological survey data to identify potential non-designated water dependent terrestrial ecosystems that could be impacted by the construction activities. Although being of lower importance and by implementing the mitigation outlined above, impacts to the sites are likely to be Negligible, so effects are considered to be **Not Significant**.

Flood Risk

Fluvial Flood Risk

- 14.8.1.56 The draft Order Limits include small areas of medium to high risk of flooding from rivers, shown in Figure 14.12. In the majority of the draft Order Limits, the fluvial flood risk is low. The primary sources of mapped fluvial flooding risk are:
- Wendling Beck and a tributary of Wendling Beck;
 - Upper Wissey and tributaries
- 14.8.1.57 Breckland Council have differentiated between Flood Zone 3a and 3b for the study area. No areas of Flood Zone 3b (functional floodplain) fall within the draft Order Limits.

- 14.8.1.58 In most cases, the Flood Zones are relatively limited in extent around the watercourses in question. However, not all of the smaller watercourses are included in the fluvial flood datasets, and there may also be areas of high flood risk from such watercourses reflected in the surface water flood mapping as a proxy. It is also noted that the flood dataset shown in Figure 14.12 does not account for the effect of future climate change.
- 14.8.1.59 In consultation with the Environment Agency details of existing hydraulic models in the area were obtained (Product 5 model reports). The models available for the surrounding catchments and downstream sections of watercourses located within the draft Order Limits include the Upper Wensum, Lower and Upper Nar, Middle and Upper Wissey, as well as Eastern Rivers (Thet, Little Ouse) further south. Model output data (Product 6) and model input files (Product 7) for the six models have also been received. See Appendix 14.1 for further details.
- 14.8.1.60 Only the Upper Wissey and Upper Wensum models interact with the draft Order Limits with only the uppermost reaches of these models reaching the study area. Furthermore, the full upstream extents of the tributary watercourses mapped on the draft Order Limits are not fully represented in the modelling, which focuses primarily on the main channels. Therefore, the models do not provide definitive detail about the realistic current and future flood levels and flood extents associated with the watercourses (particularly the smaller ones) within the draft Order Limits.
- 14.8.1.61 Certain elements of the Proposed Development are considered sensitive to flooding, such as BESS and substations. No such elements have therefore been located within fluvial Flood Zones 2 or 3 (high or medium fluvial flood risk), based on the information available at the time of the assessment. The Environment Agency published new national information for flooding and coastal erosion on 25 March 2025 [46], which has not been incorporated into the preliminary assessment at this stage, which may identify additional areas at risk of flooding both now and in the future. The data will be reviewed for the ES. Should sensitive elements be identified to occupy areas of high or medium flood risk (from any source), then the siting of sensitive elements, as part of the overall sequential approach to site layout, will be revised taking into account the latest available information. This also applies to flood design levels and temporary bridge or culvert sizes at watercourse crossings, to demonstrate that the Proposed Development is safe from flooding, and that it does not cause any increase in flood risk to nearby receptors. The Applicant is engaging with key stakeholders on the flood risk assessment, and approach to siting of sensitive elements.
- 14.8.1.62 The Proposed Development includes measures embedded into the design to protect the Proposed Development from flood risk and prevent an increase in flood risk to nearby third party receptors. These measures will be refined as the design and Flood Risk Assessment are developed further, but include not placing construction compounds or spoil in flood zones.
- 14.8.1.63 With embedded mitigation implemented (following the principles noted above), together with good practice flood management measures as outlined in the oCEMP, it is considered there will be a negligible magnitude of impact from fluvial flooding

on the Proposed Development or to nearby receptors as a result of the Proposed Development.

- 14.8.1.64 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of fluvial flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Pluvial Flood Risk

- 14.8.1.65 The risk of flooding from surface water represents overland flow routes and ponding in depressions in the landscape. It consequently also picks up some of the same flood risks as depicted in fluvial flood mapping. For several smaller upstream tributaries of Wendling Beck, the River Wissey, Gadder and Watton Brook which are not explicitly shown in the fluvial flood maps, the surface water flood maps can be used as a proxy (noting that they do not represent the effects of future climate change). Areas adjacent to these smaller tributaries have a flood risk of a 3.33% AEP (annual exceedance probability) surface water event and are found in all Panel Areas except the Western Panel Area.
- 14.8.1.66 Certain elements of the Proposed Development are considered sensitive to flooding, such as BESS and substations. A number of these are currently located in areas of medium to high pluvial flood risk. As part of the sequential approach to site layout, the design will continue to be refined for the ES, to relocate these elements outside areas of flood risk and taking into consideration climate change. Where this is not feasible, the elements will be designed with appropriate mitigation (raised) to protect them in the event of a pluvial flood event. The Applicant is engaging with key stakeholders on the flood risk assessment, and approach to siting of sensitive elements.
- 14.8.1.67 With embedded mitigation implemented (following the principles noted above to relocate sensitive elements outside of high and medium flood risk areas), together with good practice flood management measures as outlined in the oCEMP, it is considered there will be a negligible magnitude of impact from pluvial flooding on the Proposed Development or to nearby receptors as a result of the Proposed Development.
- 14.8.1.68 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of pluvial flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Groundwater Flood Risk

- 14.8.1.69 The majority of the study area has limited susceptibility to groundwater flooding. Generally areas with high susceptibility occur in the valley bottoms of the River Wissey and the Wendling Beck (which are chalk rivers), where fluvial and pluvial flood risk is also medium to high. These higher risk areas will not have elements sensitive to flooding located within them.

- 14.8.1.70 The Proposed Development will include sub-surface features such as buried cables. Where the cables are located below the water table, there is the potential for the cable bedding to act as a preferential flow pathway or barrier to flow, locally altering groundwater flows and levels. The Proposed Development will look to mitigate this potential impact through measures embedded in the cable bedding design.
- 14.8.1.71 The design includes embedded measures to protect the Proposed Development from flood risk and prevent an increase in flood risk to nearby receptors. These measures will be refined as the design and Flood Risk Assessment is developed further, but will include not placing compounds or spoil in areas at risk of flooding (or implementing appropriate mitigation, as required).
- 14.8.1.72 With embedded mitigation implemented, together with good practice flood management measures, the overall effect of groundwater flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Flood Risk from other sources

- 14.8.1.73 Reservoir flood maps indicate areas at risk of flooding in the unlikely event that a reservoir should fail. Although there are several small reservoirs near the draft Order Limits, all but one are downstream of areas within the draft Order Limits and therefore pose no risk. Hangour Hill (grid reference TF 75589 08230) is a raised reservoir on the boundary on the Western Panel Area. In the event of the reservoir failing, water would flow south, including through a portion of the Western Panel Area.
- 14.8.1.74 Flood risk from other sources such as Anglian Water infrastructure may be apparent. This will be reviewed as utilities data becomes available, however, where identified appropriate design and control measures will be implemented to mitigate the risk.
- 14.8.1.75 The design includes embedded measures (primarily through siting) to protect the Proposed Development from flood risk and prevent an increase in flood risk to nearby receptors. These measures will be refined as the design and Flood Risk Assessment is developed further, but include not placing compounds or spoil in areas at risk of flooding (or implementing appropriate mitigation, as required).
- 14.8.1.76 With embedded mitigation implemented, together with good practice flood management measures as outlined in the oCEMP, it is considered there will be a negligible magnitude of impact from flooding from other sources on the Proposed Development or to nearby receptors as a result of the Proposed Development.
- 14.8.1.77 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of flood risk from other sources on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

14.8.2 Operation

14.8.2.1 During the operation phase, the following potential risks to the water environment have been identified:

- Changes to surface runoff patterns and land drainage, resulting in altered surface water body flows and water levels within the draft Order Limits and downstream.
- Physical degradation or loss of surface water bodies present within the draft Order Limits and associated impacts to hydromorphological condition and aquatic habitat quality due to changes to drainage network.
- Physical impacts to watercourses as a result of permanent access tracks.
- Placement of impermeable structures and surfaces and reduced infiltration, resulting in increases in localised overland flooding and reduced recharge to groundwater.
- Deterioration of water quality of surface water bodies and groundwater bodies present within the draft Order Limits as a result of accidental release of contaminants during proposed operation, and traffic accidents/spillages on new access roads and transmission corridors. This includes deterioration of water quality as a result of potentially contaminated water runoff in the unlikely event of a fire.
- Alteration of groundwater levels and flow paths and consequently to flood risk due to reduced recharge resulting from rainfall captured by solar PV modules and hardstanding drainage.
- Increased risk of flooding within the draft Order Limits and to third party assets due to changes in nature and extent of the floodplain.
- Potential changes to water balance as a result of operational water demand.

Surface Water Quality

Risks to Surface Water Quality

14.8.2.2 The primary risks to surface water quality are considered to be:

- Physical degradation or loss of surface water bodies within the draft Order Limits.
- Accidental release of contaminants during proposed operation, including contaminated water runoff in the unlikely event of a fire.

14.8.2.3 Permanent physical impacts to water courses are anticipated to be limited to a few select locations where new access tracks are required.

14.8.2.4 Accidental discharge of contaminated water from operational works may distribute contaminants and pollutants to surface water receptors or their catchments, or create an accumulation of these substances where soakaway basins are used.

Receptors

14.8.2.5 The surface water receptors considered:

- Wendling Beck and tributaries having a WFD classification shown in a RBMP
- River Wissey and tributaries having a WFD classification shown in a RBMP
- River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP
- River Tud and tributaries having a WFD classification shown in a RBMP
- Ordinary watercourses not having a WFD classification shown in a RBMP
- Minor agricultural drains.

14.8.2.6 There are no surface water abstractions within the study area which could be impacted.

Mitigation

14.8.2.7 Embedded within the design are minimum offsets from watercourses and their associated riparian zones, with the exception of new access tracks.

14.8.2.8 The Preliminary Drainage Strategy outlined in Appendix 14.2 and pollution prevention and control measures outlined in the oOEMP and oBSMP further detail the control measures to prevent and control pollution incidents from occurring.

14.8.2.9 Environmental permits/consents will be obtained for any works to watercourses or for any discharges, as required.

Impact

14.8.2.10 New access tracks will be limited in number and size, with the design appropriate to the receptor importance.

14.8.2.11 With embedded mitigation and good practice pollution prevention measures implemented (as outlined in the oCEMP and oBSMP), it is considered that the sources and pathways can be minimised, resulting in a negligible magnitude of impact.

Significance of Effect

14.8.2.12 Given the negligible magnitude of impact for receptors of high importance (Wendling Beck, River Wissey, River Yare/Blackwater River and River Tud watercourses shown in a RBMP), the overall effect of new access tracks and temporary changes in surface water quality from accidental discharges during operation is considered to be Slight Adverse, and **Not Significant**. For watercourses of lower importance (ordinary watercourses not having a WFD classification shown in a RBMP or minor agricultural drains), the overall effect is considered to be Neutral, and **Not Significant**.

Surface Water Quantity and Geomorphology

Risks to Surface Water Quantity and Geomorphology

14.8.2.13 The primary risks to surface water quantity are considered to be:

- Changes to surface water runoff patterns and land drainage, resulting in altered surface water body flows and water levels within the draft Order Limits and downstream.
- Physical degradation or loss of surface water bodies present within the draft Order Limits and associated impacts to hydromorphological condition.
- Potential changes to water balance as a result of operational water demand.

14.8.2.14 Direct physical works to the identified rivers and their mapped tributaries are anticipated within the aquatic zones only for watercourses of a medium or lower receptor importance. Any direct physical works on watercourses (such as culvert construction for access tracks) could alter the geomorphology or impound flows.

14.8.2.15 During operation, water management has the potential to alter natural runoff and land drainage pathways, diverting water between surface water catchments. This potential interruption and diversion of flow may lead to a reduction or loss of water supply to watercourses and potential degradation of habitat, as well as impact flood risk.

14.8.2.16 The region is severely water stressed and demand for water could negatively impact water resources regionally.

Receptors

14.8.2.17 The surface water receptors considered:

- Wendling Beck and tributaries having a WFD classification shown in a RBMP
- River Wissey and tributaries having a WFD classification shown in a RBMP
- River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP
- River Tud and tributaries having a WFD classification shown in a RBMP
- Ordinary watercourses not having a WFD classification shown in a RBMP
- Minor agricultural drains.
- Consented discharges

Mitigation

14.8.2.18 The design of the Proposed Development limits the requirement for physical interaction with existing watercourses during the construction works, with any works constrained to watercourses of medium or lower importance.

14.8.2.19 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR details the measures to be implemented during the operational phase to minimise alteration of the natural water environment, by maintaining runoff at greenfield rates and not altering flow paths.

- 14.8.2.20 No abstractions from the water environment or connections to mains supply are proposed for the Proposed Development, with all potable water to be tankered to site. Based on the Applicant's experience at other solar developments, the water demand during operation will be significantly less than 20m³/d; the volume over which new and unplanned non-domestic requests will be automatically declined by Anglian Water or at which an abstraction licence is required from the Environment Agency. Management and maintenance requirements of water supply and drainage assets including monitoring requirements will be identified prior to operation and included in the oOEMP. Water requirements, sources of supply and measures to reduce consumption, and foulwater management will be detailed.

Impact

- 14.8.2.21 With embedded mitigation, appropriate drainage design and good practice water management measures implemented (as outlined in the oCEMP and Appendix 14.1), it is considered that the impacts to surface water quantity can be minimised by maintaining natural catchments in line with their baseline condition, resulting in a negligible magnitude of impact.
- 14.8.2.22 Direct physical impacts will be spatially constrained and designed to enable flow conveyance and not increase flood risk, resulting in a minor magnitude of impact.

Significance of Effect

- 14.8.2.23 Given the negligible magnitude of impact for receptors of high importance (Wendling Beck, River Wissey, River Yare/Blackwater River and River Tud watercourses shown in a RBMP), the overall effect of changes in surface water quantity during operation is considered to be Slight Adverse, and **Not Significant**. For watercourses of medium and lower importance (ordinary watercourses not having a WFD classification shown in a RBMP or minor agricultural drains), the overall effect is considered to be Neutral, and **Not Significant**.
- 14.8.2.24 Given the minor magnitude of geomorphological impacts on medium and lower receptors, as outlined above, the overall effect is considered to be slight adverse, and **Not Significant**.

Groundwater Quality

Risks to Groundwater Quality

- 14.8.2.25 The primary risks to groundwater quality are considered to be:
- Deterioration of water quality as a result of accidental release of contaminants, including in the unlikely event of a fire.
- 14.8.2.26 Accidental discharge of contaminants from operational works may introduce or mobilise contaminants into the aquifer, and further afield to dependent receptors such as licensed abstractions. Accumulation of substances could also occur where soakaway basins are used without appropriate treatment trains, prior to discharge.

Receptors

14.8.2.27 The groundwater receptors considered:

- White Chalk Bedrock (Principal Aquifer)
- Alluvium (Secondary A Aquifer)
- River Terrace Deposits (Secondary A Aquifer)
- Lowestoft Formation – Sand and Gravel (Secondary A Aquifer)
- Lowestoft Formation – Clay and Silt (Secondary B Aquifer)
- Lowestoft Formation – Diamicton (Secondary Undifferentiated Aquifer)
- Springs
- Licensed Abstractions
- Private water supplies
- Consented Discharges

14.8.2.28 It is noted that the watercourses in the area are chalk rivers, and there will be interaction between the groundwater and surface water. The potential implications on water courses are considered when assessing the potential magnitude of impacts and significance of effects on the underlying aquifers.

Mitigation

14.8.2.29 Receptors susceptible to local pollution incidents (such as groundwater dependent terrestrial ecosystems, licensed abstractions and private water supplies) will continue to be avoided as the design develops. However, the entire Proposed Development overlies the Principal Chalk Aquifer, and various SPZs associated with local public water supplies. As such, pollution prevention and control measures are critical to preventing impacts to groundwater receptors.

14.8.2.30 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR and pollution measures outlined in the oOEMP detail the control measures to both prevent and control pollution incidents from occurring.

Impact

14.8.2.31 With embedded mitigation, appropriate drainage design and good practice water management measures implemented (as outlined in the oOEMP and Appendix 14.2), it is considered that the risks to groundwater quality can be minimised, resulting in a negligible magnitude of impact.

Significance of Effect

14.8.2.32 Given the negligible magnitude of impact for receptors of very high and high importance, the overall effect of changes in groundwater quality during operation is considered to be Slight Adverse, and **Not Significant**. For receptors of lower importance, the overall effect is considered to be Neutral, and **Not Significant**.

Groundwater Quantity

Risks to Groundwater Quantity

- Placement of impermeable structures and surfaces, resulting in reduced infiltration.
 - Changes to water balance as a result of operational water demand.
- 14.8.2.33 Placement of impermeable structures and surfaces may locally reduce the rate of recharge to aquifers where the runoff is managed and then discharged, which has the potential to reduce groundwater levels and locally alter flow pathways. This in turn could reduce baseflow to dependent receptors including springs and watercourses.
- 14.8.2.34 The region is severely water stressed and demand for water could negatively impact water resources regionally.

Receptors

- 14.8.2.35 The groundwater receptors considered:
- White Chalk Bedrock (Principal Aquifer)
 - Alluvium (Secondary A Aquifer)
 - River Terrace Deposits (Secondary A Aquifer)
 - Lowestoft Formation – Sand and Gravel (Secondary A Aquifer)
 - Lowestoft Formation – Clay and Silt (Secondary B Aquifer)
 - Lowestoft Formation – Diamicton (Secondary Undifferentiated Aquifer)
 - Springs
 - Licensed Abstractions
 - Private water supplies

Mitigation

- 14.8.2.36 The Preliminary Drainage Strategy outlined in Appendix 14.2 of the PEIR details the measures to be implemented during the operational works to minimise alterations to the natural water environment, by maintaining runoff at greenfield rates and not altering flow paths.
- 14.8.2.37 Any discharges will be undertaken in line with the appropriate regulatory requirements, including environmental permits, if required.
- 14.8.2.38 No abstractions from the water environment or connections to mains supply are proposed for the Proposed Development, with all potable water to be tankered to site. Based on the Applicant's experience at other solar developments, the water demand during operation will be significantly less than 20m³/d; the volume over which new and unplanned non-domestic requests will be automatically declined by Anglian Water or at which an abstraction licence is required from the Environment Agency. The oOEMP includes a requirement for the preparation of a An Operational Water Management Plan (OWMP) would be produced prior to operation by the Applicant. This document would outline management and

maintenance requirements of water supply and drainage assets including monitoring requirements. The management plan would detail water requirements, sources of supply and measures to reduce consumption, and foulwater management.

Impact

- 14.8.2.39 With embedded mitigation, appropriate drainage design and good practice water management measures implemented (as outlined in the oOEMP and Appendix 14.2 of the PEIR), it is considered that the impacts to groundwater quantity can be minimised by maintaining natural groundwater behaviour in line with their baseline condition, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.2.40 Given the negligible magnitude of impact for receptors of very high and high importance, the overall effect of changes in groundwater quantity during operation is considered to be Slight Adverse, and **Not Significant**. For receptors of lower importance, the overall effect is considered to be Neutral, and **Not Significant**.

Environmental Designations and Water Dependent Terrestrial Ecosystems

- 14.8.2.41 Within the study area, there are four SSSIs, as described in Section 14.8.1.48 to 14.8.1.51.

Impact

- 14.8.2.42 Three of the four SSSIs have limited dependence on water, with only Holly Farm Meadow SSSI being considered a GWDTE.
- 14.8.2.43 With embedded mitigation (shallow infrastructure), compliance with regulatory requirements and good practice water management measures implemented, it is considered that the impacts to any of the designated sites will be limited by maintaining natural surface water catchments and groundwater levels/flows in line with their baseline condition, resulting in a negligible magnitude of impact.

Significance of Effect

- 14.8.2.44 Given the negligible magnitude of impact for receptors of very high importance, the overall effect of any changes in water quantity or quality during operation is considered to be Slight Adverse, and **Not Significant**.
- 14.8.2.45 For the ES, a review will be undertaken of habitat survey data to identify potential non-designated water dependent terrestrial ecosystems that could be impacted by the Proposed Development. Although being of lower importance and by implementing the mitigation outlined above, impacts to the site are likely to be Negligible, so effects are considered to be **Not Significant**.

Flood Risk

Fluvial Flood Risk

- 14.8.2.46 The draft Order Limits include areas within Flood Zones 2 and 3 which indicates a medium to high risk of flooding from rivers. The sources of flooding risk are:
- Wendling Beck and a tributary of Wendling Beck;
 - Upper Wissey and tributaries
- 14.8.2.47 Breckland Council have differentiated between Flood Zone 3a and 3b for the study area. No areas of Flood Zone 3b (functional floodplain) fall within the draft Order Limits.
- 14.8.2.48 In most cases, the Flood Zones are relatively limited in extent around the watercourses in question. However, not all of the smaller watercourses are included in the Flood map for planning, and there may also be areas of high flood risk from such watercourses reflected in the surface water flood mapping as a proxy. It is also noted that the flood map for planning does not consider the effect of any flood defences, nor does it account for future climate change.
- 14.8.2.49 In consultation with the Environment Agency details of existing hydraulic models in the area were obtained (Product 5 model reports). The models available for the surrounding catchments and downstream sections of watercourses located within the draft Order Limits include the Upper Wensum, Lower and Upper Nar, Middle and Upper Wissey, as well as Eastern Rivers (Thet, Little Ouse) further south. Model output data (Product 6) and model input files (Product 7) for the six models have also been received. See Appendix 14.1 for further details.
- 14.8.2.50 Only the Upper Wissey and Upper Wensum models interact with the draft Order Limits with only the uppermost reaches of these models reaching the study area. Furthermore, the full upstream extents of the tributary watercourses mapped on the draft Order Limits are not fully represented in the modelling, which focuses primarily on the main channels. Therefore, the models do not provide definitive detail about the realistic current and future flood levels and flood extents associated with the watercourses (particularly the smaller ones) within the draft Order Limits.
- 14.8.2.51 Certain elements of the Proposed Development are considered sensitive to flooding, such as BESS and substations. No such elements have therefore been located within fluvial Flood Zone 2 or 3 (medium or high fluvial flood risk), based on the information available at the time of the assessment. The Environment Agency published new national information for flooding and coastal erosion on 25 March 2025 [46], which has not been incorporated into the preliminary assessment at this stage, which may identify additional areas at risk of flooding both now and in the future. The data will be reviewed for the ES. Should sensitive elements be identified to occupy areas of high or medium flood risk (from any source), then the siting of sensitive elements, as part of the overall sequential approach to site layout, will be revised taking into account the latest available information. This also applies to flood design levels and temporary bridge or culvert sizes at watercourse crossings, to demonstrate that the Proposed Development is safe from flooding, and that it does not cause any increase in flood

risk to nearby receptors. The Applicant is engaging with key stakeholders on the flood risk assessment, and approach to siting of sensitive elements.

- 14.8.2.52 With embedded mitigation implemented (following the principles noted above), together with good practice flood management measures as outlined in the oOEMP, it is considered there will be a negligible magnitude of impact from fluvial flooding on the Proposed Development or to nearby receptors as a result of the Proposed Development.
- 14.8.2.53 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of fluvial flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Pluvial Flood Risk

- 14.8.2.54 The risk of flooding from surface water represents overland flow routes and ponding in depressions in the landscape. It consequently also picks up some of the same flood risks as depicted in fluvial flood mapping. For several smaller upstream tributaries of Wendling Beck, the River Wissey, Gadder and Watton Brook which are not explicitly shown in the fluvial flood maps, the surface water flood maps can be used as a proxy (noting that they do not represent the effects of future climate change). Areas adjacent to these smaller tributaries have a flood risk of a 3.33% AEP (annual exceedance probability) surface water event and are found in all Panel Areas except the Western Panel Area.
- 14.8.2.55 Certain elements of the Proposed Development are considered sensitive to flooding, such as BESS and substations. A number of these are currently located in areas of medium to high pluvial flood risk. As part of the sequential approach to site layout, the design will continue to be refined for the ES. Where this is not feasible, the elements will be designed with appropriate mitigation (raised) to protect them in the event of a pluvial flood event. The Applicant is engaging with key stakeholders on the flood risk assessment, and approach to siting of sensitive elements.
- 14.8.2.56 With embedded mitigation implemented, together with good practice flood management measures as outlined in the oOEMP, it is considered there will be a negligible magnitude of impact from pluvial flooding on the Proposed Development or to nearby receptors as a result of the Proposed Development.
- 14.8.2.57 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of pluvial flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Groundwater Flood Risk

- 14.8.2.58 The majority of the study area has limited susceptibility to groundwater flooding. Generally, areas with high susceptibility occur in the valley bottoms of the River Wissey and the Wendling Beck (which are chalk rivers), where fluvial and pluvial

flood risk is also medium to high. These higher risk areas will not have elements sensitive to flooding located within them.

- 14.8.2.59 The Proposed Development will include sub-surface features such as buried cables. Where the cables are located below the water table, there is the potential for the cable bedding to act as a preferential flow pathway, locally altering groundwater flows and levels. The Proposed Development will look to mitigate this potential impact through measures embedded in the cable bedding design.
- 14.8.2.60 The design includes embedded measures to protect the Proposed Development from flood risk and prevent an increase in flood risk to nearby receptors. These measures will be refined as the Flood Risk Assessment is developed further but will include not placing sensitive infrastructure in areas at risk of flooding (or implementing appropriate mitigation, as required).
- 14.8.2.61 With embedded mitigation implemented, together with good practice flood management measures as outlined in the oOEMP, it is considered there will be a negligible magnitude of impact from groundwater flooding on the Proposed Development or to nearby receptors as a result of the Proposed Development.
- 14.8.2.62 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of groundwater flood risk on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

Flood Risk from other sources

- 14.8.2.63 Reservoir flood maps indicate areas at risk of flooding in the unlikely event that a reservoir should fail. Although there are several small reservoirs near the draft Order Limits, all but one are downstream of areas within the draft Order Limits and therefore pose negligible risk. Hangour Hill (grid reference TF 75589 08230) is a raised reservoir on the boundary on the Western Panel Area. In the event of the reservoir failing, water would flow south, including through a portion of the Western Panel Area.
- 14.8.2.64 Flood risk from other sources such as Anglian Water infrastructure may be apparent. This will be reviewed as utilities data becomes available, however where identified appropriate design and control measures will be implemented to mitigate the risk.
- 14.8.2.65 The design includes embedded measures (primarily siting) to protect the Proposed Development from flood risk and prevent an increase in flood risk to nearby receptors. These measures will be refined as the Flood Risk Assessment is developed further but will include not placing essential infrastructure in areas at risk of flooding (or implementing appropriate mitigation, as required).
- 14.8.2.66 With embedded mitigation implemented, together with good practice flood management measures as outlined in the oOEMP, it is considered there will be a negligible magnitude of impact from flooding from other sources on the Proposed Development or to nearby receptors as a result of the Proposed Development.

- 14.8.2.67 Given the negligible magnitude of impact for receptors up to very high importance, the overall effect of flood risk from other sources on the Proposed Development or to surrounding receptors as a result of the Proposed Development is considered to be Slight Adverse, and **Not Significant**.

14.8.3 Decommissioning

- 14.8.3.1 During the decommissioning phase, the following potential risks to the water environment have been identified:

- Changes to surface runoff patterns and land drainage as a result of decommissioning activities, resulting in altered surface water flows and water levels within the draft Order Limits and downstream, including flood risk. Assume return to similar to baseline conditions.
- Reductions in water quality and aquatic habitat quality of surface water bodies present within the draft Order Limits, or downstream waterbodies, as a result of ground disturbance and associated sediment releases during decommissioning activities.
- Subsoil compaction and reduced infiltration, resulting in increases in localised overland flooding and reduced recharge to groundwater.
- Impacts on local hydrogeology and groundwater resources including any private water supplies and abstractions. Changes to groundwater levels, flows and quality arising from decommissioning activities.
- Reductions in water quality and increased turbidity of groundwater, resulting from the groundwork and associated sediment releases during decommissioning activities.
- Reductions in water quality of surface water bodies or groundwater bodies present within the draft Order Limits, as a result of accidental release of contaminants (fuel oils and lubricants from construction plant and vehicles – accidental spillage during refuelling and/or leakage from storage; waste removal and storage, wheel washing).
- Other flooding related impacts may potentially arise from the decommissioning of any flood risk infrastructure introduced in the design or mitigation, such as culverts for access routes or compensation floodplain storage.

- 14.8.3.2 In the absence of detailed information regarding decommissioning works, it is assumed that all above ground infrastructure (except the substations and access tracks) will be removed and all in ground infrastructure will be left in situ. Therefore, the impacts during the decommissioning are considered comparable with, or likely less than, those of the construction stage.

- 14.8.3.3 The most appropriate method of decommissioning and the handling and disposal of materials will be undertaken in agreement with the relevant authorities at the time in the DEMP, a draft oDEMP is provided as part of the documentation published for consultation. Any applicable new legislation or guidelines published prior to decommissioning will be taken into account in relation to any design of mitigation prior to decommissioning occurring.

14.9 Additional mitigation

- 14.9.1.1 No significant effects have been identified through assessment and therefore no further mitigation has been identified as required.

14.10 Residual effects

- 14.10.1.1 The assessment presented in Section 14.8 concludes no significant effects on the water environment, after embedded and essential mitigation has been taken into account. No additional mitigation is proposed or required, therefore the residual effects are the same as reported in Section 14.8 and summarised in Table 14-13.

14.11 Monitoring

- 14.11.1.1 Monitoring and maintenance of the Proposed Development will occur throughout the construction and operational phases to ensure that the Proposed Development operates as designed. This includes:
- Water usage during construction and operation
 - The monitoring and maintenance of vegetation beneath the solar PV panels to ensure that erosion and sediment mobilisation is not increased
 - Litter and debris will be removed from gravel aprons surrounding buildings
 - The monitoring and maintenance of the drainage network, including removal of silt accumulation, to ensure no blockages

14.12 Opportunities for enhancement

- 14.12.1.1 Opportunities for enhancement to the water environment are currently being explored and will be included in the ES.

14.13 Summary

- 14.13.1.1 Table 14-13 presents a summary of the Water Resources and Flood Risk assessment, detailing further mitigation requirements and residual effects.

Table 14-13 Water Resources and Flood Risk - Preliminary assessment summary

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
Construction					
Wendling Beck and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Wissey and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Tud and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
Ordinary watercourses not having a WFD classification shown in a RBMP, Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse Minor, adverse where physically impacted	Neutral, not significant Slight adverse, not significant where physically impacted	None required	Neutral, Not Significant Slight Adverse, Not Significant where

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
					physically impacted
Minor agricultural drains, Low	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse Minor, adverse where physically impacted	Neutral, not significant Slight adverse, not significant where physically impacted	None required	Neutral, Not Significant Slight Adverse, Not Significant where physically impacted
White Chalk Bedrock, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Alluvium, Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
River Terrace Deposits, Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Lowestoft Formation – Clay and Silt, Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
Lowestoft Formation – Diamicton, Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Springs (identified and unidentified), Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Licensed Abstractions, High (PWS – Very High)	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Private Water Supplies (identified and unidentified), Medium	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Consented Discharge, Low	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Breckland Forest SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
	prevention measures as secured by the oCEMP				
Holly Farm Meadow SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Narborough Railway Embankment SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Honeypot Wood SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Non-designated WDTE, High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Flood Risk to Project, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
Flood Risk to third parties as a result of the Project, Very High	Embedded mitigation as outlined in Section 14.7.2 and pollution prevention measures as secured by the oCEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Operation					
Wendling Beck and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Wissey and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Yare and/or Blackwater River and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
River Tud and tributaries having a WFD classification shown in a RBMP, High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight Adverse, not significant	None required	Slight Adverse, Not Significant
Ordinary watercourses not having a WFD	Embedded mitigation as outlined in Section	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
classification shown in a RBMP, Medium	14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Minor, adverse where physically impacted	Slight adverse, not significant where physically impacted		Slight Adverse, Not Significant where physically impacted
Minor agricultural drains, Low	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse Minor, adverse where physically impacted	Neutral, not significant Slight adverse, not significant where physically impacted	None required	Neutral, Not Significant Slight Adverse, Not Significant where physically impacted
White Chalk Bedrock, Very High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Alluvium, Medium	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
River Terrace Deposits, Medium	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Lowestoft Formation – Clay and Silt, Medium	Embedded mitigation as outlined in Section	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
	14.7.2 and mitigation measures as secured by the oOEMP and oBSMP				
Lowestoft Formation – Diamicton, Medium	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Springs (identified and unidentified), Medium	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Licensed Abstractions, High (PWS – Very High)	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Private Water Supplies (identified and unidentified), Medium	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant
Consented Discharge, Low	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Neutral, not significant	None required	Neutral, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
Breckland Forest SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Holly Farm Meadow SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Narborough Railway Embankment SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Honeypot Wood SSSI, Very High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Non-designated WDTE, High	Embedded mitigation as outlined in Section 14.7.2 and mitigation measures as secured by the oOEMP and oBSMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Flood Risk to Project, Very High	Embedded mitigation as outlined in Section 14.7.2 and Appendix	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant

Receptor and importance	Embedded and good practice measures	Description of impact and magnitude	Significance of effect	Additional mitigation	Residual effect
	14.1. Measures as secured by the oOEMP				
Flood Risk to third parties as a result of the Project, Very High	Embedded mitigation as outlined in Section 14.7.2 and Appendix 14.1. Measures as secured by the oOEMP	Negligible, adverse	Slight adverse, not significant	None required	Slight Adverse, Not Significant
Decommissioning					
As per construction.					

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