~~-~~**Cambridge Waste Water Treatment Plant Relocation Project**
Anglian Water Services Limited

Appendix 8.16: Habitats Regulations Assessment Report

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Abbreviations and key terms

Abbreviation	
AA	Appropriate Assessment

AEOI	Adverse Effects on Integrity of Site
AADT	Annual Average Daily Traffic
AD	Anaerobic Digestion
BOD	Biochemical Oxygen Demand
CEMP	Construction Environment Management Plan
CHP	Combined Heat and Power
CIEEM	Chartered Institute of Ecology and Environmental Management
CoCP	Code of Construction Practice
cSAC	candidate Special Area of Conservation
CSO	Combined Sewer Overflow
CTMP	Construction Traffic Management Plan
CWWTPR	Cambridge Waste Water Treatment Plant Relocation
DCO	Development Consent Order
DWF	Dry Weather Flow
EIA	Environmental Impact Assessment
EPR	Environmental Permitting Regulations
ES	Environmental Statement
ExA	Examining Authority
G2G	Gas-to-Grid
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
IDB	Internal Drainage Board
IED	Industrial Emissions Directive
IEMA	Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
LLFA	Lead Local Flood Authority
LSE	Likely Significant Effect
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSER	No Significant Effects Report
NSIP	Nationally Significant Infrastructure Project
PINS	Planning Inspectorate

pSPA	potential Special Protection Area
Ramsar Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat, as amended in 1982 and 1987

Abbreviation

RIES	Report on the Implications for European sites
RPS	Regulatory Position Statement
SAC	Special Area for Conservation
SCI	Site of Community Importance
SMP	Soil Management Plan
SNCB	Statutory Nature Conservation Body
SoCC	Statement of Community Consultation
SoS	Secretary of State
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TSS	Total Suspended Solids
WFD	Water Framework Directive
ZoI	Zone of Influence

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Key terms

Applicant	The party applying for development consent. Responsible for carrying out the necessary preparatory work in support of the application to enable the competent authority to carry out its duties
APFP	The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)
Wild Birds Directive	Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (as amended)
Competent Authority	In the case of NSIPs the competent authority, the decision-maker, is the relevant secretary of state
European site/European marine site (in accordance with the statutory definition in the Habitat Regulations)	Refer to "Natura 2000" as the network of SACs and SPAs in Europe. Refer to the "National Site Network" for the network in the UK of: • NSN sites in the UK • European marine sites in the UK • European offshore sites in the UK
Habitats Directive	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended).
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017
Integrity Matrices	Method for summarising the AA stage (HRA Stage 2) within the application information. A separate matrix should be produced for each European site considered within the AA.
Qualifying features	The features for which the European site is designated and to be protected and managed for conservation.
Ramsar Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat, as amended in 1982 and 1987
Screening Matrices	Method for summarising the screening stage (HRA Stage 1) within the application information. A separate matrix should be produced for each European site considered at the screening stage
Secretary of state	Secretary of state The role of the secretary of state as competent authority is to determine if there are LSE and carry out the AA, if required, before a decision is made. Also required to consult with the relevant Statutory Nature Conservation Body (SNCBs) (and the public, if considered appropriate) before deciding whether to authorise the NSIP, and where adverse effects remain, they must undertake further assessments on alternatives and prepare a justification statement for IROPI if consent is to be granted.
SoCG	Statement of Common Ground Applicants are advised to make use of a SoCG to identify matters which have been agreed with the nature conservation bodies and to flag areas which remain in dispute. The Screening and Integrity Matrices can also be used for this purpose. If the application is accepted, the SoCG will help the ExA to assess the issues and to decide how to carry out the examination

Works Area	The areas within which all works associated with the construction, operation and decommissioning of the Proposed Development are undertaken, including access, drainage and landscaping.

Summary

This document provides information to enable the Secretary of State (SoS) to undertake a Habitats Regulations Assessment (HRA) of the potential effects of the Development Consent Order (DCO) application for the Cambridge Waste Water Treatment Plant Relocation (CWWTPR) Project, hereafter referred to as the 'Proposed Development' or CWWTPR, on European sites referred to in the UK as the National Site Network (NSN).

The Proposed Development involves construction of a new Waste Water Treatment Plant (WWTP) together with the associated wastewater transfer infrastructure (comprising a wastewater transfer tunnel and treated effluent transfer pipelines), a treated effluent discharge outfall to the River Cam (the Outfall), a transfer pipeline corridor from a pumping station off Bannold Drive, Waterbeach (the Waterbeach Pipeline) and a new access road.

At the screening stage Fenland SAC, Wicken Fen Ramsar site and Eversden and Wimpole Woods SAC were not taken to stage 2 in consideration of the distance separating the zone of influence (ZoI) and the habitats site and considering the absence of hydrological connectivity (See section 4 of the Screening Report, Application Document Reference 5.4.8.15).

The screening stage identified Likely Significant Effects (LSE) on the qualifying features of Devils Dyke Special Area of Conservation (SAC) from construction vehicle emissions and changes to air quality/air-borne pollutants and on the qualifying features of The Wash and North Norfolk Coast SAC, The Wash Special Protection Area (SPA), The Wash Ramsar site, Ouse Washes SAC, Ouse Washes SPA and Ouse Washes Ramsar site through changes to groundwater and surface water quality and quantity and hydrological impacts as a result of consented discharges to the River Cam under normal operation of the Proposed WWTP and through possible impacts from intermittent storm discharges. These LSE have been taken through to Stage 2: Appropriate Assessment (AA).

The HRA Report provides information with regard to the implications of identified LSE from the screening stage on the conservation objectives of European sites identified as being connected to the project to ascertain if the proposal will adversely affect the integrity of any European site, in line with criteria provided in Advice Note Ten 'Habitats Regulations Assessment relevant to nationally significant infrastructure projects' (version 8, November 2017). The AA stage involves a detailed consideration of the proposal's effect on the integrity of the European site(s), either alone or in combination with other plans or projects, with respect to the conservation objectives of the site and its structure and function.

The assessments take into account mitigation to be implemented as part of the Proposed Development in the form of embedded measures (design features), obligations to implement management plans as a requirement of the Code of Construction Practice (CoCP) Part A and B (~~Appendix 2.1 &2.2, App Doc Ref~~Application Document Reference: 5.4.2.1 & 5.4.2.2), obligations related to other relevant management plans such as Soil Management Plan (~~Appendix 6.3, App Doc Ref~~Application Document Reference: 5.4.6.3) and Decommissioning Management Plan (~~Appendix 2.3, App Doc Ref~~Application Document Reference: 5.4.2.3) and mitigation afforded by separate environmental permits and licences that will be obtained for the Proposed Development.

With adherence to the proposed mitigation, including regulatory requirements, the construction works associated with the Proposed Development and the operational activity associated with the Proposed WWTP the AA stage assessments do not identify any adverse effects on the overall integrity of the European sites and their features either alone, or incombination with other plans, policies or projects.

1 Introduction

1.1 Background

1.1.0 This document is intended to provide sufficient information to enable the Secretary of State to undertake a Habitats Regulations Assessment (HRA) of the potential effects of the Development Consent Order (DCO) application for the Cambridge Waste Water Treatment Plant Relocation (CWWTPR) Project, hereafter referred to as the 'Proposed Development' or CWWTPR, on the National Site Network.

1.1.1 There is a requirement under the Conservation of Habitats and Species Regulations 2017 (as amended) ("the 2017 Regulations") to determine if a plan or project may have an adverse impact on a site designated under the same (or preceding Regulations) prior to any consent or permission being determined. The process of undertaking this assessment is known as an HRA.

1.1.2 The 2017 Regulations include measures to establish and maintain a network of sites protecting habitats, which in themselves are valuable, and the species they support. These sites form a network that across Europe is known as Natura 2000, and domestically also known collectively (since December 2019) as the National Site Network.

1.1.3 Within the UK, this network consists of Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), proposed SPAs (pSPAs) and candidate SACs (cSACs). This network also extends to marine environments. Ramsar sites are treated equally within this network. Such sites are referred to within the relevant legislation and are known as European sites.

1.1.4 The Regulations are set out in Parts which implement the requirements of the Directives, with Part 2 including provisions for the selection and designation of sites and Part 6 making provisions to ensure that assessments of plans and projects are fully considered before granting consent or permission. They also define the roles of statutory bodies, competent authorities and the appropriate nature conservation body and the requirements for information to be submitted to these bodies to enable them to undertake the required assessments.

1.1.5 Regulation 63 of the Habitats Regulations provides that:

- '….before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, [the competent authority] must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.'
- 'In the light of the conclusions of the assessment, and subject to Regulation 64

[IROPI], the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site.'

1.2 Proposed Development

1.2.1 The Proposed Development involves construction of a new Waste Water Treatment Plant (WWTP) together with the associated waste water transfer infrastructure (comprising a waste water transfer tunnel and treated effluent transfer pipelines), a treated effluent discharge outfall to the River Cam (the Outfall), a transfer pipeline corridor from a pumping station off Bannold Drive, Waterbeach (the Waterbeach Pipeline) and a new access road.

1.2.2 A high-level summary of the Proposed Development, as defined in the Statement of Community Consultation (SoCC) is provided below:

- an integrated waste water and sludge treatment plant;
- a shaft to intercept waste water at the current site on Cowley Road and a tunnel to transfer it to the new site and terminal pumping station;
- a pipeline transferring treated waste water from the Proposed WWTP to a discharge point on the River Cam;
- a pipeline transferring waste water from Waterbeach to the Existing Cambridge WWTP, with the option of a connection directly into the Proposed WWTP when the existing works is decommissioned (an associated pumping station to be located within the Waterbeach New Town development will be consented by the developer of the new town and is outside of the DCO scope);
- ancillary on-site buildings, including work offices, substation building, workshop, Discovery Centre, vehicle parking including electrical vehicle charging points, fencing and lighting;
- renewable energy generation via anaerobic digestion as part of the sludge treatment process which produces biogas that designed to be fed directly into the local gas network heating homes;
- renewable energy generation via solar photovoltaic and battery energy storage system;
- other associated development such as site access, utilities, including gas, electricity and communications, and connection to the site drainage system, landscaping and off-site highway network alteration measures to reduce potential traffic impacts;

- a new vehicle access including for HGV bringing sludge onto the site for treatment; and
- environmental mitigation and enhancements, including improved habitats for wildlife, landscaping, bunds and increased improved recreational access and connectivity.

1.2.3 —A detailed description of the Proposed Development is provided within the Environmental Statement (ES) Chapter 2: Project description (~~App Doc Ref~~Application Document Reference 5.2.2) and within Section 2 of the HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15)

Design progression since screening

1.2.4 —Design changes highlighted in Chapter 2 since initial screening was undertaken for the Proposed Development include:

- Removal of a vent at shaft 4;
- Adjustments to the landscape masterplan;
- ~~Refining~~Refinement of the outfall design;
- Fixing the earth bank height to 5m above finished ground level;
- Lowering the heights of structures ~~in~~within the Proposed ~~Development~~WWTP;
- Refining the Waterbeach pipeline route; and
- Selection of the access route to the Proposed WWTP.


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1.3 Competency statement

1.3.1 The qualifications and experience of the report authors are set out in Table 1-1.

Table 1-1: Competency statement

Name	Role	Qualifications	Experience summary
Nigel Shelton	Technical check	BSc (Hons) Aquatic Biology MSc Environmental Forestry	An ecologist with over 20 years of practical experience in the application of UK wildlife legislation and species management, from advice to enforcement. Worked for over 12 years with Natural England, with eight years of this time spent providing strategic leadership and direction across all aspects of protected species licensing in England. Has a wealth of experience from giving preapplication advice and undertaking assessments of licence applications to undertaking compliance visits as well as development and authoring of operational guidance, both for internal staff and external users.
Tom Bridges	Document author	BSc (Hons) Marine Biology, Biodiversity and Conservation MSc Marine Biology and Ecology	Six years of experience as a marine scientist, specialising in marine, coastal and estuarine ecology, fisheries ecology and management within a regulatory setting, protected area management and environmental policy. Worked with The Association of Inshore Fisheries and Conservation Authorities (IFCA) for five years, with time spent providing environmental assessments/HRA/Commercial fisheries assessments, in line with UK legislative drivers, within the fisheries and conservation sector as a foundation for strategic decision making. Holds a firm understanding of developing mitigation within
[redacted]	Contributor – air quality	BSc (Hons) Environmental Studies MSc Air Pollution Management and Control	10 years of experience on projects requiring the application of quantitative and qualitative assessment methodologies from the Institute of Air Quality Management (IAQM), Environment Agency, Department of Environment, Food and Rural Affairs (Defra) and National Highways as well as international practices. Experience on projects ~~across a range of sectors including water,~~
Celia Figueira	Contributor – aquatic ecology	BSc (Hons) Fauna Resources and Environment – Biology Post-graduate Certificate in Forensics Biology PhD Zooplankton Communities in Tagus River Basin	protected area sites. 25 years of experience as an aquatic ecologist specialising in water quality and plankton. Wide expertise in freshwater studies including water quality, eutrophication, chemical and thermal pollution, phytoplankton and zooplankton data analysis (including algae blooms studies). Particular relevant experience in water resources studies such as low flows, NEP studies and environmental impact assessment dealing with the effects from abstraction and sewage discharges as well as Ecological Impact Assessments (EcIA), Water Framework Directive (WFD) assessments (both freshwater and coastal waterbodies) and HRA.

Name	Role	Qualifications	Experience summary
		Member of Institution of Environmental Sciences Member of Institute of Air Quality Management	across a range of sectors including water, transportation, power and infrastructure both domestically and internationally.

1.4 Document purpose

1.4.1 This document provides information and assessments to support Stage 1 and 2 of the HRA process to enable the Secretary of State to undertake an HRA.

1.4.2 It summarises the findings from the HRA Screening Report and presents information to inform the HRA Stage Two: Appropriate Assessment which assesses the implications of identified likely significant effects (LSE) on the conservation objectives of European sites identified as being connected to the project to ascertain if the proposal will adversely affect the integrity of any European site.

Description of mitigation measures proposed which avoid or reduce each effect, and any remaining residual effects	Section 6 HRA Report, Stage 2: Appropriate Assessment

A schedule indicating the timing of mitigation measures in relation to the progress of the development	Section 6 HRA Report, Stage 2: Appropriate Assessment

1.4.3 The HRA Screening Report including screening matrices, are provided within the HRA Screening report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15).

1.4.4 The reporting takes into account criteria provided in Advice Note Ten 'Habitats Regulations Assessment relevant to nationally significant infrastructure projects' (version 8, November 2017). Table 1-2 identifies the location of information presented at HRA Stage 2: AA.

Table 1-2: HRA Stage 2: AA information location

Planning Inspectorate (PINS) Advice Note 10 Content Requirements	Location
Information identifying the qualifying features, conservation objectives and conservation status of each of the qualifying features that might be affected	HRA Screening report (Section 3.3)
Evidence to demonstrate that the Applicant has fully consulted and had regard to comments received by the relevant Statutory Nature Conservation Body SNCB during pre-application consultation.	Section 3 HRA Report, Consultation Table 3-1: Consultation record relevant to HRA
Evidence about the project's effects on the integrity matrices of protected sites	HRA Report Appendix C: Integrity

Planning Inspectorate (PINS) Advice Note 10 Content Requirements	Location
Mechanisms to secure mitigation measures, and identification of any factors that might affect the certainty of their implementation	Section 6 HRA Report, Stage 2: Appropriate Assessment
A statement as to which (if any) residual effects constitute an adverse effect on the integrity (AEOI) alone or in combination with other plans or projects and therefore need to be included within the AA	HRA Screening report (Section 4, Screening Statement) of European sites either
Evidence to demonstrate that the Applicant has fully consulted and had regard to comments received by the relevant SNCB during preapplication consultation.	Section 3 HRA Report, Consultation Table 3-1: Consultation record relevant to HRA HRA Screening report (showing Natural England comments)

1.5 Relationship of HRA to other permits

1.5.1 The Proposed Development will require a number of separate consents in relation to regulatory regimes. Activities requiring consent not included, or capable of being included, in an application for development consent under the PA2008, may also have a significant effect on a European site and may also require AA by a different

decision maker (competent authority) under other regulatory regimes before it can be authorised.

1.5.2 Table 1-3 summarises other consents and permits required for the Proposed Development. The Environment Agency has confirmed that an HRA Report is needed to support their AA in relation to the application for the discharge consent. The expected timing of the consent application is indicated.

Table 1-3: Summary of other consents or licences required for the Proposed Development subject to HRA

Consent or licence	Regulatory regime	Competent Authority	HRA Report / information to inform HRA required	Application	Permit issued (expected)
Modification to the Existing Cambridge WWTP consent	Environmental Permitting (England and Wales) Regulations 2016 (as amended).	Environment Agency	Yes*	Application made in 2022	Determination period of a minimum of 12 months expected
Consent to discharge Final effluent / storm water	Environmental Permitting (England and Wales) Regulations 2016 (as amended).	Environment Agency	Yes	Application made in 2022	Determination period of a minimum of 12 months expected
Interim permit	Environmental Permitting (England and Wales) Regulations 2016 (as amended).	Environment Agency	Uncertain, not cited as a requirement in consultation discussions held so far, but to be confirmed with the EA. Assumed HRA Report will be provided to support the application preparation	Application made in 2022	Determination period of a minimum of 12 months expected
~~Interim permit~~	~~Environmental Permitting (England and Wales) Regulations 2016 (as amended).~~	~~Environment Agency~~	~~Uncertain, not cited as a requirement in consultation discussions held so far, but to be confirmed with the EA. Assumed HRA Report~~	~~Application made in 2022~~	~~Determination period of a minimum of 12 months expected~~

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			~~will be provided to support the application preparation~~		
Phased permit modification	Environmental Permitting (England and Wales) Regulations 2016 (as amended).	Environment Agency	Yes – to support future application to vary permit condition	Phase 1 to 2036 Expected to be subject to HRA with the application to enable the Environment Agency to make decisions on revisions to the permit	Pre-consent but depends on Environment Agency progress with application

Consent or licence	**Regulatory regime**	**Competent Authority**	**HRA Report / information to inform HRA required**	**Application**	**~~—~~Permit issued (expected)**
Flood risk activities permit (permanent structure)	Environmental Permitting (England and Wales) Regulations 2016 (as amended).	Environment Agency	Unlikely Not cited as a requirement in consultation discussions to date but to be confirmed with the Environment Agency	Application to be made in 2024 once detailed design and risk assessment and method statements (RAMS) developed by the appointed contractor	Determination period of two months expected

~~Consent or licence~~	~~Regulatory regime~~	~~Competent Authority~~	~~HRA Report / information to inform HRA required~~	~~Application~~	~~Permit issued (expected)~~

Industrial Emissions Directive (IED) Permit	Environment Agency	Uncertain, not cited as a requirement in consultation discussions held so far, but to be confirmed with the Environment Agency. Assumed HRA Report will be provided to support the application preparation	Application to be made in 2026	Determination period of a minimum of 12 months expected

* The HRA Report provided within the permit application and the responses in relation to this document will be referred to in the final HRA report for the Proposed Development. Documentation submitted as part of the application for DCO will be finalised so that the HRA Report for the Proposed Development takes into account the findings of the HRA report provided in relation to the other environmental permit applications.

1.5.3 In relation to permit applications for the treated effluent and storm discharge consent the Environment Agency that confirms the intent to authorise consent.

1.5.4 In relation to the Environmental Permitting Regulations (EPR) applications for the Proposed WWTP (Sludge Treatment Centre). Discussions with the Environment Agency are on-going and a permit application has been submitted to the national permitting team for review.

2 Assessment Methodology

2.1 Habitats Regulations Assessment stages

2.1.0 The HRA process consists of four stages, each stage being informed by the one preceding, to ensure an iterative and objective assessment. If the conclusion of Stage 1 Screening is that there will be no LSE on any features of a European site, there is no requirement to undertake further stages. Similarly, if the Stage 2 AA concludes there will be no AEOI of a European site, then the assessment is concluded.

2.1.1 The HRA stages are summarised within Table 2-1.

Table 2-1: HRA Stages

Stage	Description
Screening	This stage identifies potential effects upon the European sites and considers if **(Stage 1)** these are likely to be significant (see definitions below). Screening is an iterative process and before moving to Stage 2 it can be repeated if required. Proposals to mitigate any LSE cannot be considered at the screening stage. If the Screening (Stage 1) identifies that the project or plan, alone or in combination, may have LSE on a European site and/or its features of interest, or if there is uncertainty, the competent authority must undertake an AA (Stage 2) of the implications for that site in view of that site's conservation objectives.
Appropriate Assessment (Stage 2)	This stage involves the consideration of the predicted adverse effects of the project or plan either alone, or in combination with other projects or plans, on the integrity of a European site with respect to the site's structure, function and conservation objectives. Additionally, where mitigation has been proposed to avoid or minimise LSE, this stage includes assessment of the likely effectiveness of any mitigation applied. A key outcome of the AA is to identify whether the integrity of the European site(s) is likely to be adversely affected by the plan/project.
Assessment of Alternative Solutions (Stage 3)	If the mitigation measures applied and assessed during AA cannot avoid AEOI of a European site, this stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site.
Assessment where no alternative solutions exist and where adverse impacts remain (Stage 4)	If no suitable alternative solutions are available, Stage 4 requires an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is considered that the project or plan should proceed. In making this assessment, it is important to recognise that it will be appropriate to the likely scale, importance and impact of the proposed project. If it is impossible to avoid or mitigate the adverse impact, it must be demonstrated that there are IROPI.

Source: www.gov.uk ~~: www.gov.uk~~

Screening

2.1.2 This stage is completed to screen out those aspects of the plan or project which would not be likely to give rise to significant effects to European sites, and to screen out features of each relevant site that are not likely to be significantly affected.

2.1.3 It is completed by the identification of European habitat sites and their associated qualifying features that could potentially be affected by the plan or project. This considers proximity as well as identification of sites potentially connected by other, less distance-constrained pathways, i.e., hydrological pathways.

2.1.4 SPA/SAC/Ramsar sites are classified for "qualifying features" reported in the citation for the designation. The qualifying features and conservation objectives of each identified site are determined through a review of the citation and other published documentation including the 2001 SPA review by the Joint Nature Conservation Committee (JNCC) and the Conservation Objectives published by Natural England. Other documents that sit underneath the Conservation Objectives for specific sites to be considered in the HRA are:

- Natural England 'Supplementary Advice on conserving and restoring features'; and
- Natural England 'Site Improvement Plan'

2.1.5 Assessments are then completed, without the consideration of mitigation, to determine if the plan or project might have an LSE on a protected site either alone or in combination with other plans or projects.

Appropriate Assessment

2.1.6 Guidance issued by Defra (Defra, 2021) states that the purpose of an AA is to assess the implications of the plan or project in respect of the conservation objectives of a site, either individually or in combination with other plans or projects, and that the conclusions should enable the competent authority, in this case the Secretary of State, to determine whether the plan or project will adversely affect the integrity of the site concerned. The focus is therefore specifically on the species and/or habitats for which the protected site is designated.

2.1.7 Where a plan or project will give rise to an LSE upon a European Site(s) (referred to as 'Habitat Site(s)'), an assessment must be made of the implications on the integrity of that site in view of that site's structure, function and conservation objectives.

2.1.8 The purpose of this AA is to determine whether AEOI of the features of the sites identified can be ruled out for the Application alone or in combination with other plans of projects in view of the Habitat Sites conservation objectives[1] and using the

[1] In England conservation objectives for designated sites are published by Natural England. These objectives describe the desired state for Habitats Site, in terms of the specific interest features for which the site has been designated. When interest features are being managed so that the nature conservation value is maintained,

best scientific evidence available. Generic conservation objectives are issued by Natural England and applied to each interest feature of the Habitats Site. Supplementary advice for each designation underpins these generic objectives to provide site-specific information and give greater clarity to what might constitute an adverse effect on a site interest feature. Where supplementary advice is not yet available for a site, Natural England advises that assessments apply the generic conservation objectives to the site-specific situation.

2.1.9 The AA aims to:

- consider the impact of the plan or project on the integrity of the Habitat Site with respect to its structure and function; and
- assess potential mitigation strategies where AEOI of a Habitat Site are identified.

2.1.10 The Habitat Sites identified through screening are reviewed and the impacts of the plan or proposal are considered, taking into account mitigation. The conservation objectives for each site are checked.

2.1.11 This stage includes assessment of detailed and comprehensive mitigation measures in relation to the LSE identified. The assessment needs to consider the effectiveness of the mitigation including taking into account how mitigation will be delivered, confidence in the efficacy of the measures, and monitoring of the measures.

2.1.12 Impacts are assessed using information available and/or specific studies to enable consideration of the magnitude, duration and nature of impacts.

2.1.13 The potential impacts may be direct or indirect and are dependent on the relationship or pathway between the source (the plan or project) and the receptor (the qualifying features of the Habitats Site). The significance of an impact is relative to the sensitivity, existing condition and conservation status of the qualifying features of the Habitat Site, and the scale of the impact in space and time.

2.1.14 Potential effects on the qualifying features of the European Sites are evaluated with respect to the scale, extent and nature of the impact, for example the extent of habitat that may be affected, changes in hydrogeological conditions, potential changes in species distribution, and the duration of the impact. A precautionary approach is taken when evaluating the significance of the impact.

they are assessed as being in a 'favourable condition'. An adverse effect on integrity ("AEoI") is ~~likely to be one which prevents the Habitat Site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation.~~

2.1.15 There are no set thresholds at which impacts on site integrity are considered adverse. This is a matter for interpretation on a site-by-site basis, depending on the designated feature and nature, scale and significance of the impact.

2.1.16 Once the assessment is complete the outcome should be discussed with the SNCB, after which the report may be updated to account for advice received. If no LSEs are concluded at this stage, the HRA process ends.

likely to be one which prevents the Habitat Site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation.

Consideration of alternatives and Imperative Reasons of Overriding Public Interest

2.1.17 If it is concluded that significant effects are likely to remain after mitigation, there must be an examination of alternative ways to complete the plan or project that avoids significant effects on the integrity of the Habitats Site (Stage 3: Consideration of alternatives). Where alternatives exist, these should be subjected to Stage 1 and Stage 2 assessments if required. Where no alternatives exist, it is necessary under Article 6(4) of the Habitats Directive to identify if there are IROPI for progressing with the plan or proposal. If there are IROPI, compensatory measures must be assessed (Stage 4).

3 Consultation

3.1.1 The SNCB in England is Natural England. Natural England and the Environment Agency have been consulted in order to understand the potential effects to be considered with the HRA.

3.1.2 The Environment Agency has also been separately consulted in relation to the required permits for the Proposed WWTP. Natural England has also been made aware of the required permits and has been involved in discussion in relation to the assessments and supporting information required as part of the permit application. This has included information to support the completion of an HRA.

3.1.3 The Environment Agency has confirmed the requirement for discharge consent applications to be supported by an HRA Report to the Environment Agency as competent authority in relation to the granting of new permits.

3.1.4 The HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15) includes advice from Natural England in relation to the sites identified and potential effects that the HRA Report should consider.

3.1.5 The ongoing consultation and engagement programme includes specific focus on future permitting of the Proposed WWTP. Through discussions with Natural England (and the Environment Agency) about potential impacts of the Proposed Development on designated sites located downstream along the River Cam, the following sites have been identified as requiring assessment for impacts[2]:

- Devil's Dyke SAC;
- The Wash and North Norfolk Coast SAC;
- The Wash SPA;
- The Wash Ramsar;
- The Ouse Washes SPA; ~~•~~ The Ouse Washes SAC; and ~~•~~
- The Ouse Washes Ramsar.

3.1.6 There are on-going discussions with Natural England and the Environment Agency on a one-to-one basis and ~~the Water resources~~to application the Technical Working Groups ~~is~~were on-going.

3.2 Consultation record

3.2.1 A record of consultation activities in relation to HRA is provided in Table 3-1.

[2] The Cam Washes Site of Special Scientific Interest (SSSI) also referred to by NE which will be assessed as part of the Environmental Impact Assessment (EIA).


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Table 3-1: Consultation record relevant to HRA

~~November 2021~~	~~Technical Working~~	~~Comments regarding Scoping Report, update on PEI structure and~~	~~Mitigation options were discussed and~~

	~~Group consultees~~	~~mitigation options.~~	~~addressed within the outline Code of Construction Practice (CoCP) document Part A included at PEI/Consultation 3. These have now been updated and are included within~~

Date	Consultation	Issues raised	Action/Outcome	mechanism
August 2020	Consultation response – Natural England	Comments relating to the quantity and quality of the treated effluent that can be discharged to the River Cam and permitting by the Environment Agency and that Natural England would expect to be involved in any discussions on this aspect, particularly in relation to downstream statutorily designated sites such as the Cam Washes, Wicken Fen and the Ouse Washes. Natural England and Environment Agency represented within the Biodiversity Technical Working Group~~.~~ (TWG).	Programme of consultation to cover issues relating to ecology, water quality, designation and approach to ongoing studies.	
~~August 2020~~	~~Consultation response – Natural England~~	~~Comments relating to the quantity and quality of the treated effluent that can be discharged to the River Cam and permitting by the Environment Agency and that Natural England would expect to be involved in any discussions on this aspect, particularly in relation to downstream statutorily designated sites such as the Cam Washes, Wicken Fen and the Ouse Washes.~~	~~Natural England and Envir represented within the Bi Technical Working Group.~~ ~~Programme of consultatio relating to ecology, water quality, designation and approach to ongoing studies.~~	

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September 2020	Bilateral meeting with the Environment Agency/Preapplication advice (interim permit for Existing Cambridge WWTP)	Material required in relation to interim permit application Natural England advice to consider Cam Washes. Advice provided that supporting studies relating to interim permit for the Existing Cambridge WWTP and ongoing studies for the Proposed Development consider: • the Cam Washes SSSI; • the Wash SPA; • North Norfolk Coast SAC; • the Ouse Washes SPA, SAC, Ramsar site and SSSI; and • any other legally protected sites that are hydrologically connected to the flow from the water recycling centre.	Studies to inform application to include consideration of baseline condition, interim permit and Proposed WWTP. Studies have included the listed sites (and others). HRA will cover European designated sites/Ramsar sites (not SSSI, e.g., Cam Washes).
March 2021	Biodiversity Technical Working Group	Scope of surveys	Aquatic surveys include checking for presence of invasive non-native species (INNS).
November 2021	Technical Working Group consultees	Comments regarding Scoping Report, update on PEI structure and mitigation options.	Mitigation options were discussed and addressed within the outline Code of Construction Practice (CoCP) document Part A included at PEI/Consultation 3. These have now been updated and are included within the CoCP Part A and B (Appendix 5.4.1.2).

Date	Consultation	Issues raised	Action/Outcome	mechanism
March 2022	Bilateral meetings – Natural England	Natural England meeting regarding review of HRA screening: • Natural England identified that the HRA should consider the effect of increase in total suspended solids (TSS) on downstream features; and		

		• Natural England agreed with the features scoped into the assessment.	from sediment build up transported to downstream sites by the River Cam system.
April 2022	Consultation 3 – PEI	Natural England comments received as part of Consultation 3: • agreement on sites screened in and pathways; • reiteration that the HRA report should be updated to consider the effects of the Proposed Development on the Ouse Washes SAC, SPA, Ramsar site through any changes in flows and sediment load in the River Great Ouse system associated with the final effluent discharges. • HRA screening stage should then be concluded, and further assessment progressed through the Appropriate Assessment; and • the need for further assessment to consider: ~~1.~~ air quality effects for Devil's Dyke SAC associated with emissions to air from vehicles, construction plant and onsite combustion (Natural England is generally satisfied with the preliminary findings of the air quality assessment subject to detailed modelling and assessment confirming ~~the CoCP Part A and B (Appendix 2.1 App Doc Ref 5.4.2.1).~~ These mitigation measures will be referred to when considering any LSE identified at HRA screening. Update HRA ~~s~~Screening ~~r~~Report (Appendix A, Application Document Reference 5.4.8.15) to include reference to the issue of harm to sites	HRA Screening (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15) has been updated to consider the effects of the Proposed Development on the Ouse Washes SAC, SPA and Ramsar site through any changes in flows and sediment load in the River Great Ouse system associated with the final effluent discharges. Any LSE identified at the screening stage ~~has~~have been addressed in this HRA Report. Air quality effects will be included in the assessment following the receipt of the air quality modelling. Current conclusions are based on professional judgement; however, these will be updated if needed once the modelling results are available. The conclusions are based on 'no deterioration' as per the licensing requirements by the Environment Agency for DCO consent.

April 2022	National Trust Consultation 3 – PEI	The Ecological PEI makes limited mention of Wicken Fen. It states that potential significant effects on ecological features associated with internationally designated sites will be examined in detail in the ES and the HRA. The PEI HRA Screening Report by Mott MacDonald Ltd 2022 identifies potential LSE on Wicken Fen Ramsar and Fenland SAC (alone and in combination) in relation to air emissions, hydrology/water quality and will be considered within an AA step of the HRA. This will consider impacts from the project alone and in combination with other plans or projects. We welcome the precautionary approach taken within the screening and note that risk is considered low but cannot be ruled out based on the available information.	~~We note your~~The comments on ecology ~~and can~~were noted and it was confirmed that a Habitats Regulations Assessment (HRA) to inform appropriate assessment ~~has been~~would be prepared and ~~has been~~ reviewed with Natural England as the ~~s~~Statutory Nature Conservation Body. The HRA forms part of the ES and deals with these concerns in its assessment of significant effects on European or internationally important sites for conservation. The HRA is included as a supporting document within

					the DCO application and is referred to within the ES Chapter for Biodiversity.
Date	**Consultation**	**Issues raised**	**Action/Outcome**	**mechanism**	
					~~modelling and assessment confirming~~ the initial findings through the ES and detailed mitigation measures being agreed and secured through DCO requirements); Hydrological effects through changes in water quantity or quality for The Wash and North Norfolk Coast SAC, The Wash SPA and The Wash Ramsar site, in addition to the Ouse Washes SAC, SPA, Ramsar site, in addition to the Ouse Washes SAC, SPA, Ramsar site.
30 June 2022	Natural England	Bilateral meeting – ~~HRA Report to be updated with air quality~~ • Natural England meeting to agree approach to review for AA stage within the HRA report; ~~review for AA stage within the HRA report;~~	HRA Report to be updated with air quality elements before providing to Natural		

- ~~England.~~ Natural England advised that the review should be on the England.

  completed document; i.e., with the air quality elements; and
- Natural England welcomed approach to tag specific areas in the HRA for focus.

Date	Consultation mechanism	Issues raised	Action/Outcome
		~~screening and note that risk is considered low but cannot be ruled out based on the available information.~~	~~supporting document within the DCO application and is referred to within the ES Chapter for Biodiversity.~~

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30 September 2022	Save Honey Hill Consultation 3 – PEI	The future Habitats Assessment should examine the impact of invasive species being introduced from the Bannold Ditch catchment to the River Cam above Bottisham Lock when untreated storm water effluent is pumped upstream for discharge at the existing and proposed future outfalls next to the A14. This mechanism for an effect does not appear to be included in the PEIR.	We note the comments made regarding the Habitats Assessment and confirm that the HRA process is to consider likely significant effects to European sites (SACs, SPA and in the UK Ramsar sites). This considers credible pathways for an effect to occur i.e., a change upstream of a designated site, which could be affected by the change. As part of the Proposed Development there is no direct link (currently or proposed) from Bannold Drain to the Proposed WWTP. The Waterbeach pipeline will transfer waste water currently treated at the Waterbeach Water Recycling Centre (WRC) for treatment in the Proposed Waste Water Treatment Plant (WWTP). This would pass through the treatment works and treated effluent returned to the River Cam. There would be very infrequent storm events. These would occur under the limits of the operational environmental permit. In instances where storm events occur dilute waste water mixed with rain water would be screened before being discharged to the river. In terms of transfer from different drainage catchments it is not considered likely that either catchment presents a different risk profile in terms of the presence of INNS. Notwithstanding, the various pathways and likely significant effects which may result will be part of the consultation process that we will have with Natural England in their role as the Statutory Nature Conservation Body in relation to completion of assessments for the purpose of HRA.

Date	Consultation	Issues raised	Action/Outcome	mechanism
			~~England in their role as the Statutory Nature Conservation Body in relation to completion of assessments for the purpose of HRA.~~	

09 January 2023	Consultation response – Natural England	Natural England comments received: • 'Overall, we agree with the conclusions of the HRA and find the mitigation measures in the Appropriate Assessment sufficient to enable a conclusion of no adverse effect on the integrity of the relevant European designated sites.' • 'We welcome that the HRA has largely addressed Natural England's comments on the earlier iteration of the HRA in our response to the section 42 consultation (27 April 2022, ref. 376215).' • 'Natural England concurs with this conclusion and is satisfied that no additional mitigation measures for impacts to protected sites to address air quality are required.' • 'To conclude, subject to proposed mitigation measures being secured through appropriate DCO requirements, we are satisfied that the construction works associated with the Proposed Development and the operational activity associated with the proposed WWTP will not have any adverse effect on the integrity of the designated sites and their features either alone or in-combination with other plans, policies or projects.' Further advice: • 'We are generally satisfied with the screening out of Eversden and Wimpole Woods SAC, based on the assumption that findings of the bat surveys, requested in our previous advice, conclude that SAC barbastelles will not be impacted by the proposed scheme. If this is the case, we recommend that a section is included in the HRA to provide clarification on this matter.' • 'Although Natural England generally agree with the no adverse effect on integrity conclusions of the HRA for the Ouse Washes SPA, SAC, Ramsar site, our advice is that this section of the AA and HRA would benefit from re-wording to	The bat surveys carried out to date have recorded some low level barbastelle activity along the Low Fen Drove Way Grasslands and Hedges CWS towards and beyond the east of the proposed landscape masterplan area; along with several calls to the south of Red House Close; to the west of Biggin Abbey Cottages; and at Horningsea. No bat roosts for barbastelle have been recorded. Whilst there may be some migration or movement between bats using the Scheme Order Limits area and the Eversden and Wimpole Woods SAC, the population is unlikely to be impacted. There is continued foraging and connectivity for barbastelles to use in the local area and no severances proposed to confirmed habitats of use. The HRA has now been updated to reflect that the Ouse Washes SAC, SPA and Ramsar sites are not located directly downstream of the Proposed Development. These sites are located on a tributary of the River Great Ouse, upstream of the Denver sluice, therefore effluent would not flow directly through these sites. Whilst the hydrological pathway enters the River Great Ouse system downstream of the Ouse Washes SAC, SPA and Ramsar sites, upstream effects contributing to lower flows and/or increased sediment loading can result in silt build up downstream of these sites. These effects have the potential to impede drainage of

Date	Consultation	Issues raised	Action/Outcome	mechanism
		~~case, we recommend that a section is included in the HRA to provide clarification on this matter.'~~ ~~'Although Natural England generally agree with the no adverse effect on integrity conclusions of the HRA for the Ouse Washes SPA, SAC, Ramsar site, our advice is that this section of the AA and HRA would benefit from rewording to~~ clarify that the SPA is not directly downstream of the proposal, and therefore effluent would not flow directly through it. The Ouse Washes are instead located on a tributary, upstream of Denver Sluice, which is the point at which the siltation issue, discussed above, could arise. This siltation issue should be clearly explained in the HRA, along with the potential for impacts on the protected site's notified bird species from impeded drainage of floodwater.' 'Natural England is aware that the Environment Agency has raised a number of matters that need to be addressed in further detail through the DCO application, including protection of groundwater. We trust that these issues will be addressed through the DCO documents, including updates to the HRA where relevant.'	~~sediment loading can result in silt build-up downstream of these sites. These effects have the potential to impede drainage of~~ floodwater from the Ouse Washes, with the potential to impact the spring bird breeding assemblage.	

4 Baseline

4.1 —Information referred to at screening

4.1.1 The data sources used for the HRA screening are provided in Table 4-1.

Table 4-1: Principal data sources collected to inform the HRA screening

Baseline item	Data source
Designated sites	Extent and location of habitats site. The Multi Agency Geographic Information for the Countryside (MAGIC) (DEFRA, 2022)
	Natural England Designated Sites View (Natural England, n.d).
Proposed designations	Extent and location of habitats site. MAGIC (DEFRA, 2022).
Impact risk zones	Extent and location of zone. MAGIC (DEFRA, 2022).
Ramsar sites	Ramsar Sites Information Services (Ramsar, n.d.).
Hydrogeology	CWWTP Hydrogeological Impact Assessment March 2021 (CWWTPR, 2021).
European Sites – SAC	SAC in the United Kingdom Standard Data Forms for designations (JNCC, n.d.).
Threats and pressures	Improvement programme for England's Natura 2000 sites (IPENS) (GOV.UK, 2012).
Conservation objectives	Natural England Conservation objectives for European sites: East of England (Natural England, n.d.).

4.2 —Information from the Environmental Statement

4.2.1 Information referred to from the ES to support the HRA is provided in Table 4-2.

Table 4-2: Information referred to from the Environmental Statement

~~Topic~~	~~Details~~	~~Application refence~~
Topic	Details	Application refence
Air quality	Air quality baseline Air quality effects	ES Chapter 7: Air quality (~~App Doc Ref~~Application Document Reference 5.2.7)
	Air quality impacts	Air quality – Air quality model dispersion outputs (~~Appendix 7.2, App Doc Ref 5.4.7.2~~Application Document Reference 5.2.7)
Biodiversity	Bat baseline	~~Appendix 8.7, App Doc Ref~~Application Document Reference Ref 5.4.8.7
Landscape	Environmental lighting impact assessment	~~Appendix 15.3, App Doc Ref~~Application Document Reference 5.4.15.3
Water quality	Water quality baseline Water quality effects	ES Chapter 20: Water resources ~~(App Doc Ref~~Application Document Reference 5.2.20~~)~~

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Water quality	HRA screening to support interim permit application	~~Appendix 20.11, App Doc Ref~~Application Document Reference 5.4.20.11

Topic		Details	Application refence
Water quality	~~River modelling report (outfall)~~	River modelling report (outfall)	~~Appendix 20.7, App Doc Ref~~Application Document Reference 5.4.20.7
Water quality		Storm model report	~~Appendix 20.10, App Doc Ref~~Application Document Reference 5.4.20.10
Water Quality		Drainage strategy report	Application Document Reference 5.4.20.12
Vehicle movements		Vehicle associated emissions	Traffic and transport Application Document Reference 5.2.19

~~Topic~~ ~~Details~~ ~~Application refence~~

~~Water quality~~	~~Storm model report~~	~~Appendix 20.10, App Doc Ref 5.4.20.10~~
~~Water Quality~~	~~Drainage strategy report~~	~~Appendix 20.12, App Doc Ref 5.4.20.12~~
~~Vehicle movements~~		~~ES Chapter 19: Traffic and transport (App Doc Ref 5.2.19)~~

4.3 Additional data sources

4.3.1 Further information referred to in relation to forming a baseline understanding of European sites considered within the report is summarised in Table 4-3.

Table 4-3: Desktop information sources

Item or feature	Year	Source
South Cambridgeshire District Council and Cambridge City Council	2021	~~https://democracy.cambridge.gov.uk/documents/s57649/Ap~~https://democracy.cambridge.gov.uk/documents/s57649/Ap ~~p.%20C%20~~p.%20C%20-%20Habitats%20Regulations%20Assessment%20Draft%20Report%20LUC.pdf~~h~~%20Habitats%20Regulations%20Assessment%20Draft%20Rep ort%20LUC.pdfh
Greater Cambridge Biodiversity Supplementary Planning Document (SPD) Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) Screening Report	2021	~~https://www.greatercambridgeplanning.org/media/2475/par tially-accessible-sea-hra-screening-report-dec-21.pdf~~https://www.greatercambridgeplanning.org/media/2475/partially-accessible-sea-hra-screening-report-dec-21.pdf

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Northeast Cambridge Area Action Plan HRA Report	2020	~~(Public Pack)Appendix C: Habitats Regulations Assessment Final Report (LUC) Agenda Supplement for Planning and~~ (Public Pack)Appendix C: Habitats Regulations Assessment Final Report (LUC) Agenda Supplement for Planning and ~~Transport Scrutiny Committee, 11/01/2022 17:30 (cambridge.gov.uk)~~Transport Scrutiny Committee, 11/01/2022 17:30 (cambridge.gov.uk)
Greater Cambridge Integrated Water Management Study	2021	~~Other Reports Template (greatercambridgeplanning.org)~~Other Reports Template (greatercambridgeplanning.org)

5 Stage 1: Screening

5.1 Background

5.1.1 The screening stage is documented within the HRA Screening Report (~~Appendix 8.15, App Doc Ref 5.4.8.15~~Application Document Reference 5.4.20.11).

5.1.2 Section 3.3 of the Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15) identifies the European Sites for consideration and Section 3.5 of the Screening Report details the qualifying features of each of the sites.

5.1.3 The screening stage identified all habitat sites within 10km of the Proposed Development (or 30km for SAC for which bats are a qualifying feature) as the zone of influence (ZoI) of potential impacts, based on the most recent guidance on ecological impact assessment (CIEEM, 2018) and all European Sites potentially connected by other, non-distance-constrained pathways as well as sites identified through discussions with Natural England.

5.1.4 The environmental pathways identified at screening that could lead to a significant effect were:

- physical damage – habitat degradation as a result of water quality changes through pollution events;
- biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas, including functionally linked land;
- toxic contamination – water pollution / changes to water quality (degradation) as a result of the discharge of treated effluent to the River Cam and through intermittent storm flow discharges and use of the Combined Sewer Overflow (CSO) during more extreme rainfall events;

- non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked habitats and impendence of flood water affecting qualifying species;
- increase in water levels in the River Cam resulting from the discharge of treated effluent;
- air quality changes through emissions which may affect Habitat Site(s); and ~~¤~~
- ~~—~~introduction and spread of INNS.

5.1.5 ~~—~~Screening matrices for all the sites identified in the HRA Screening Report are provided in Appendix B of the HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15).

5.1.0 ~~—~~Of the identified sites, ~~nine~~seven were taken forward into assessments to support Stage 2: AA. These are:

- Devil's Dyke SAC,
- The Wash and North Norfolk Coast SAC,
- Wash SPA, Wash Ramsar site,
- Ouse Washes SAC,
- Ouse Washes SPA and
- Ouse Washes Ramsar site.

5.2 ~~—~~Qualifying Interest Features

5.2.1 ~~—~~Section ~~3.5~~4.2 of the HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15), Table 4~~-~~ 3 to Table 4~~-8~~.9, detail~~s~~ the European sites for which LSE could not be excluded and the qualifying features of each.

5.2.2 ~~—~~Section ~~3.10~~4.3 of the HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15), Table 4~~-10~~.7 to Table 4~~-15~~.14 details the European sites for which LSE related to incombination impacts could not be excluded and the qualifying features of each.

5.3 ~~—~~Likely Significant Effects

5.3.1 The screening stage identified potential risk to the qualifying features as a result of alone effects and in-combination effects. The findings are summarised below.

Alone assessment

5.3.2 ~~—~~The HRA Screening stage identified potential risk to:

- the qualifying features of Devil's Dyke SAC from construction vehicle emissions and changes to air quality/air-borne pollutants; and
- the qualifying features of The Wash and North Norfolk Coast SAC, Wash Ramsar site, Wash SPA, Ouse Washes SAC, Ouse Washes SPA and Ouse Washes Ramsar site through changes to groundwater and surface water quality and quantity and hydrological impacts, both via normal discharges into the River Cam and through possible impacts from intermittent storm discharges.

In combination assessment

5.3.3 The in-combination assessment at the HRA Screening stage identified potential risks to:

- the qualifying features of Devil's Dyke SAC from combined construction vehicle emissions and changes to air quality/air-borne pollutants with identified plans or projects; and
- the qualifying features of The Wash and North Norfolk Coast SAC, Wash Ramsar site, Wash SPA, Ouse Washes SAC, Ouse Washes SPA and Ouse Washes Ramsar through combined changes to groundwater and surface water quality and quantity and hydrological impacts with identified plans or projects.

5.3.4 In-combination effects have been considered within Section ~~6~~ 7 'In combination assessment' of this document.

6 Stage 2: Appropriate Assessment

6.1 Background

6.1.1 The purpose of the HRA Stage 2: AA is to provide information to support the determination of whether AEOI of the features of the sites identified can be ruled out for the Application alone or in combination with other plans or projects in view of the site's conservation objectives and using the best scientific evidence available.

6.1.2 Information identifying the qualifying features, conservation objectives and conservation status of each of the qualifying features that might be affected by the Proposed Development are provided in the HRA Screening Report (~~Appendix 8.15, App Doc Ref~~Application Document Reference 5.4.8.15).

6.2 Air emissions and changes to air quality/air-borne pollutants

6.2.1 During the construction phase of the Proposed Development there is a risk of increased gaseous and particulate emissions resulting in air-borne pollutants/air pollution with a risk of increased atmospheric nitrogen deposition on the habitats/species within Devil's Dyke SAC from construction traffic passing within 200m on the adjacent A14 and from the operation of construction plant within the Scheme Order Limits. No other sites are considered in relation to emissions to air.

6.2.2 During the operational phase there is a risk of increased emissions resulting in airborne pollutants/air pollution from air emissions associated with on-site combustion which will be authorised under the IED and subject to a parallel HRA (Application Document Reference: 5.4.8.16). The combined heat and power (CHP) and boiler plant emit pollutants to air, primarily NOx which can affect air quality near to the proposed WWTP, however the CHP is the worst case. The project position is to use gas-to-grid (G2G) as a preference but revert to CHP if G2G is economically unviable.

6.2.3 The assessment of air quality impacts has been assessed qualitatively for construction dust, construction plant and the emergency use of vents, known as 'Whessoe Valves' during operation, and quantitively for on road construction vehicle movements, on road operational vehicle movements and operational energy plant. Both the quantitative and qualitative approaches considered the maximum design envelope parameters and the design and mitigation measures adopted as part of the Proposed Development.

6.2.4 The quantitative assessment has been undertaken using best practice methods to assess the impact of the Proposed Development on air quality during construction and operation. The quantitative approach uses the atmospheric dispersion model ADMS 5 to model emissions from energy plant and ADMS-Roads 5 to model

emissions from traffic sources. To determine effects on the site's qualifying features of the identified European Sites an assessment has been made that considers:

- The change in emissions of pollutants associated with traffic on the local road network, where there is an increase of 100 heavy duty vehicles and/or 500
- light duty vehicles per day (as an annual average daily total), during the construction and operational phases of the Proposed Development following best practice methods.
- Emissions of pollutants associated with the operation of the energy plant at the proposed WWTP in isolation following best practice methods.
- The combined impacts and effects of the operational phase emissions from traffic on the local road network and the energy plant following best practice methods.

6.3 Changes to groundwater and surface water quality and hydrological impacts

6.3.1 To determine effects on the site's qualifying features of the identified European Sites an assessment has been made that considers:

- short term changes to water quality in the River Cam during construction;
- hydrogeological assessments completed to understand transmissivity of groundwater;
- the outputs from fluvial modelling completed to understand the changes to flow levels in the River Cam as a result of the treated effluent discharge (~~Appendix 20.5, App Doc Ref~~Application Document Reference 5.4.20.5);
- the outputs from predictive modelling completed to understand the operation of the outfall and mixing of the treated effluent discharge
- (~~Appendix 20.7, App Doc Ref~~Application Document Reference 5.4.20.7);
- the application of mitigation measures (see Section 6.4) and the CoCP Part A and B (~~Appendix 2.1 & 2.2, App Doc Refs~~Application Document References 5.4.2.1 & 5.4.2.2);
- the application of design measures (see Section 6.4) and the effect of separate consents and licences required for the Proposed WWTP; and
- potential changes to water quality and volume in the River Cam during operation, including discussions with the Environment Agency in relation to the consenting of discharges into the River Cam, 'no deterioration' (as determined

by Environment Agency modelling in determining permit conditions) and studies supporting the permit application.

6.4 Mitigation measures

6.4.1 A number of assumed and established mitigation measures have been considered in relation to the assessments to support Stage 2.

6.4.2 The measures to be applied to the construction and operation of the Proposed Development, including decommissioning of the Existing Cambridge WWTP in order to surrender the existing permit, are presented in the following text.

6.4.3 Three types of mitigation are referred to (as described in the Institute of Environmental Management and Assessment's (IEMA) guidance, Delivering Quality Development (IEMA, 2015):

- Primary (inherent) – measures which are an intrinsic part of the project design, for example reducing the height of a development to reduce visual impact;
- Secondary (foreseeable) – measures which require management and activity in order to achieve the anticipated outcome, typically presented in the form of a series of management plans to be secured through DCO requirements; these measures comprise industry-wide best practice measures to address common risks in the construction and development sectors and thus are proven to reduce the risk of the identified impacts in so far as is reasonably possible; and
- Tertiary (inexorable) – measures that are required regardless of any environmental impact assessment (EIA), as they are imposed, for example, as a result of legislative requirements and/or standard sectoral practices, for instance, applying emission controls to an industrial stack to meet the requirements of the Industrial Emissions Directive (Directive 2010/75/EU).

6.4.4 Schedule 2 of the Order sets out all the requirements that the Proposed Development must comply with in relation to the construction, operation and maintenance.

6.4.5 The requirements in Schedule 2 are as follows:

- project-wide requirements – overarching requirements applicable to all ~~construction activities~~works packages, such as time limits for commencement and overall phasing of the Proposed Development; and
- works-specific requirements – these apply to a specific ~~construction activities~~works package(s) within the Proposed Development (for example, requirements relating only to construction of the outfall or shaft 4). Works-specific requirements relate to compliance with:

- ~~-~~ – preparation of Construction Environmental Management Plan (CEMP) relevant to works plans/groups of works plans;
- ~~-~~ – the relevant management plans required by Part A of the CoCP;
- ~~-~~ – phasing / timing of construction;
- ~~-~~ – the requirement to submit detailed environmental management plans and design details for approval; and ~~-~~ – operational requirements.

6.4.6 The remainder of this section sets out the mitigation measures to be applied during construction and operation and as related to decommissioning of the Existing Cambridge WWTP. These measures are referred to in consideration of LSE to European Sites taken forward from the HRA Screening stage for Stage 2 assessment.

Construction

Primary measures

6.4.7 During construction a range of primary mitigation measures are included with the Proposed Development which include:

- pipe-jack micro-tunnelling or horizontal directional drilling (HDD) are proposed for crossing of the River Cam, larger drainage ditches, the A14 and railway. Pipe-jacking will be used for the transfer tunnel. Sealing of all boreholes constructed as permanent installations will be undertaken so that the seal is around casing tubes in soil and sub-soil deposits close to the surface. The seal would prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table.
- the use of deep shaft construction techniques that involve segmental shaft lining, contiguous bored shafts, or similar techniques, to minimise groundwater impacts.
- construction of the outfall within a temporary sheet pile cofferdam to minimise short-term disturbance to water quality in the River Cam. ***Secondary measures***

6.4.8 During the construction phase, the CoCP Part A (~~Appendix 2.1, App Doc Ref~~Application Document Reference 5.4.2.1) and associated management plans specify the range of general measures to avoid and minimise impacts that may occur during construction.

6.4.9 Section 5.7 of the CoCP Part A, Pollution Incident Control Plan, requires the preparation of a plan that details procedures to deal with any pollution incident that may occur, including response procedures (including appropriate equipment, materials and resources), timescales and notification procedures that would be

implemented to minimise the effects. It will complement and be consistent with the Emergency Preparedness Plan(s).

6.4.10 Section 7.2 of the CoCP Part A, Ecology, contains a series of control measures relating to the safeguarding of habitats and wildlife. Section 6.3, Invasive Species, requires pre-construction surveys to check for the presence of invasive species and in the event that any are identified, that controls are put in place. Biosecurity measures are also a requirement of construction method statements.

6.4.11 Section 7.5 of the CoCP Part A, Water Resources and Flood Risk, contains a series of control measures relating to the protection of surface water, groundwater and aquifers. Section 6.6 of the CoCP Part A includes measures to ensure that the risk of uncontrolled discharges from construction is reduced (including sediment management) and detailing an Emergency Response Plan in the event of a pollution incident. This plan must be prepared for all works.

6.4.12 Section 7.5 of the CoCP Part A also includes measures in relation to the control of dewatering activities and works affecting watercourses, including the requirement to obtain permits.

6.4.13 The measures outlined under Sections 5.4 of the CoCP Part A in respect of the storage of materials and the management of dust will be implemented to avoid the pollution of designated sites and the local water environment during construction

6.4.14 Section 2 of the CoCP requires that the Principal Contractor(s) appointed by the Applicant will be required to produce a CEMP before works associated with each part of the Proposed Development commence. This will contain the detailed commitments derived from the measures set out in the CoCP and approved as part of the requirements of the DCO.

6.4.15 Each CEMP will be supported by a series of topical construction management plans as set out below. These will be appended or incorporated into the CEMP(s) and will secure additional mitigation during the construction phase:

- Emergency Preparedness Plan;
- Pollution Incident Control Plan;
- Soils Management Plan;
- Decommissioning Plan;
- Commissioning Plan;
- Construction Water Quality Management Plan;
- Noise and Vibration Management Plan;
- Air Quality/Dust Management Plan; and

- ~~–~~Site Waste Management Plan.

6.4.16 The Construction Traffic Management Plan (CTMP) (~~Appendix 19.7, App Doc Ref~~Application Document Reference 5.4.19.7) contains measures pertaining to controls of vehicle movements during construction.

6.4.17 The Outline Soil Management Plan (SMP) (~~Appendix 6.3, App Doc Ref~~Application Document Reference 5.4.6.3) contains measures pertaining to controls to protect soils including preventing run off.

6.4.18 The Applicant will require the Principal Contractor(s) to undertake and report monitoring as is necessary to assure and demonstrate compliance with all commitments within the CoCP, CTMP and SMP.

Tertiary measures

6.4.19 In addition to project-wide secondary measures, several additional permits are required for the Proposed Development during construction. These permits also serve to secure a range of mitigation measures. The CoCP requires that the appointed contractor has in place all required permits and licenses and completes works in accordance with any measures secured by the permit. The consenting body

would set limits and separate permit conditions which would serve to protect environmental features such as water quality. During construction the Proposed Development would require:

- Environmental Permit (Flood Risk Activities~~ permits~~) (for construction of the outfall structure);
- Environmental Permit (Water Quality) which will consider interim arrangements associated with testing and commissioning. Waterbeach Pipeline will be wet tested with clean (chlorinated) water, in small sections, with testing water reused where possible. Wet testing of tanks etc could use any water, including final effluent. Discharge permits will be required in both cases; and
- compliance with the Regulatory Position Statement (RPS) in relation to dewatering or obtaining relevant permits for dewatering and disposal of water if the RPS cannot be met.

Decommissioning

6.4.20 Decommissioning of the Existing Cambridge WWTP would be subject to a Decommissioning Management Plan which is to be agreed with the Environment Agency. An ~~o~~Outline ~~strategy~~Decommissioning Plan is provided in ~~Appendix 2.3 (App Doc Ref~~Application Document Reference 5.4.2.3~~)~~.

6.4.21 This plan has been developed in consultation with the Environment Agency and the detailed plan will be agreed with the Environment Agency and the local authority.

Operation

Primary measures

6.4.22 A range of design measures (primary mitigation) are planned for the Proposed Development and include:

- segregated drainage within the ~~P~~proposed WWTP to capture and treat any contaminated surface water; surface water runoff from uncontaminated hard surfaces will be managed through a surface water drainage system; the WWTP is split into areas where surface water has potential to be contaminated, and areas where it doesn't; in areas where there is potential for contamination, the drainage system is isolated and runoff from these areas is returned to the head of the works; in uncontaminated areas, runoff will be attenuated in a storage pond and discharged to a drain (leading to Black Ditch) at greenfield runoff rate; climate change allowances for peak rainfall intensity have been factored into surface water drainage design;
- storage structures to capture stormwater for treatment (the volume required is by agreement with the Environment Agency);
- drainage features to trap and attenuate surface water, i.e., swales along the access road;
- selection of processes that are modular to allow for future flexibility and increase to treatment capacity;
- the sealing of shafts to prevent minor inflows of groundwater or waste water outflow; and
- use of impermeable material for the pipe for the Waterbeach pipeline and the completion of pipeline pressure testing to ensure integrity of the pipe before operation.

Secondary measures

- The design and operation of the Proposed WWTP will include rigorous mitigation measures, set out in the CoCP, to prevent major pollution incidents and, more generally, to minimise the generation and mobilisation of contamination.
- Following implementation of best practice design of the outfall structure to reduce scour risks associated with discharges from the outfall, there remains a low residual risk in the event of an infrequent stormwater discharge which is expected to occur less than once every ten years. This low risk will be mitigated through routine visual inspection of both riverbanks downstream of the proposed outfall following a storm discharge event, with maintenance or repair of eroded sections of riverbank as necessary. ***Tertiary measures***

6.4.23 In addition to the above measures, several additional permits are required for the Proposed Development to be able to operate. The consenting body would set limits and separate permit conditions which would serve to protect environmental features such as air or water quality. Specifically, the operation of the Proposed WWTP would require:

- Industrial Emissions Directive (IED) Permit in relation to the CHP and
- Anaerobic Digestion (AD) features of the Proposed WWTP;
- Environmental permit to discharge treated effluent to a water course;
- Environmental permits for storm overflows and emergency overflows; and
- Environmental permits (flood risk activities) for the permanent outfall structure.

6.4.24 The separate legal requirements infer a high level of confidence that monitoring of compliance would occur over the lifetime of the development, and that the monitoring and reporting obligations will be adhered to.

6.4.25 Table 6-1 sets out the mitigation measures that will be adopted during the construction, decommissioning and operation of the Proposed Development and how these would be secured.

Table 6-1: Mitigation considered for Stage 2: AA

Mitigation measures Timing	Applied to Responsible	Justification	Mitigation type	Secured by	Responsible party
Water quality	Measures to prevent increased risk of elevated suspended solids reaching the River Cam from dewatering activities:	Dewatering activities	Bespoke permit will contain conditions pertaining to quality,	Tertiary	Compliance with all the conditions in the RPS.	Dewatering arrangements and permits to be in place prior to the	Contractor(s)

Mitigation measures Timing	Applied to Responsible	Justification	Mitigation type	Secured by	Timing party	Responsible
• The conditions under which dewatering can discharge water to the River Cam will be agreed with the Environment Agency.					commencement of shaft and tunnel dewatering activities.	

Mitigation measures	Applied to	Justification	Mitigation type	Secured by	Timing	Responsible party
Construction						
Habitats Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations: • Access routes and haul routes within the workings area will be kept free from mud and dust to minimise silty runoff. • Use of cofferdam to construct in the dry and minimise release of particles into the water course. Development and application of Water Quality • Management Plan • Dewatering to be by agreement with the Environment Agency or compliant with the RPS.	Proposed Development – construction of the outfall	Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features.	Secondary	Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated CEMP and detailed management plans.	CEMP and associated management plan to be prepared prior to the commencement of construction.	Contractor(s)
Habitats Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from dewatering activities: • The conditions under which water, used in testing the Waterbeach waste water transfer pipelines, can be discharged to local drains or watercourses will be agreed with the Environment Agency. • A permit will be obtained for this discharge. For excavations any groundwater or surface water intercepted will be pumped out and passed through an appropriate form of treatment (such as a silt buster) before being discharged to an approved location. The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.	Proposed Development – installation of the Waterbeach Pipeline	Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features. ~~Secondary~~	Tertiary	Regulatory requirement. Requirement within the CoCP Part A for contractors to obtain relevant permits	Prior to the commencement of construction	Contractor(s)
Water quality Measures to avoid disturbance to the River Cam that could result in releases of fine particles: • Use of HDD for crossing of the River Cam and larger drainage ditches. • Pipe-jacking will be used for the transfer tunnel. • Development and application of water quality management plan. • Dewatering to be by agreement with the Environment Agency or compliant with the RPS.	Proposed Development – construction interfacing with water courses	Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features.	Primary	Schedule 1 – Authorised Development, Schedule 2 – Requirements		Contractor(s)

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Mitigation measures Timing			Applied to Responsible	Justification	Mitigation type	Secured by	party	
Habitats	~~Habitats~~	Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from ~~dewatering activities:~~ connected watercourses: • Physical measures such as trenches, and sandbags will be used to divert silty water from sensitive receptors. Vegetation corridors or other stabilisation measures will be used to act as buffer strips. • Stockpiles will be located on level ground and materials appropriately stored. • Development and application of Water Quality Management Plan. • ~~The conditions under which water, used in testing the Waterbeach waste water transfer pipelines, can be discharged to local drains or watercourses will be~~Dewatering to be by agree~~d~~ment with the Environment Agency~~.~~ or compliant with the RPS.	Proposed Development – installation of the Waterbeach Pipeline	Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features.	~~Tertiary~~Secondary	~~Regulatory requirement.~~ Requirement ~~of the CoCP for contractors to obtain relevant permits~~ in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans.	CEMP and associated management plan to be prepared ~~P~~prior to the commencement of construction.	Contractor(s)
		• The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.		flow rates, and monitoring.		Temporary dewatering from excavations to surface water Or Bespoke permit if the conditions in this RPS cannot be met.		
	Water Quality	Measures to prevent increased risk of elevated suspended solids reaching the River Cam from activities to hydrologically linked surface water features: • Construction activities that impact on ordinary watercourses within the Internal Drainage Board (IDB) administrative areas such as ditches will require consent from Waterbeach Level IDB or Swaffham IDB. For those outside of this area consent will be sought from the Lead Local Flood Authority (LLFA). • The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.	Waterbeach pipeline installation, excavation of final effluent trench. Earthworks to complete the landscape management plan.	Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features.	Secondary Tertiary	Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans. Land drainage consent	CEMP and associated management plan to be prepared prior to the commencement of construction.	Contractor(s)

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Mitigation measures Timing	Applied to Responsible	Justification	Mitigation type	Secured by	party	~~Responsible~~
Groundwater	Measures to prevent increased risk to groundwater quality (and subsequently to hydrologically linked sites): • All boreholes constructed as permanent installations would be sealed around casing tubes in soil and sub-soil deposits close to the surface. The seal would prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table. • Measures to prevent increased risk to groundwater flows (and subsequently to hydrologically linked sites). • Risk of long-term impact to groundwater levels or flow would be eliminated by robust design and construction of all subsurface structures. • Sealing of shafts. • Impermeable pipe material for Waterbeach pipeline. • Leak detection and monitoring.	Section 6.6 of the CoCP Part A, Water Resources and Flood Risk, contains a series of control measures relating to the protection of surface water, groundwater and aquifers.	Surface water runoff from uncontaminated hard surfaces will be managed through a surface water drainage system. Sustainable drainage features included for the access. Provision to prevent potentially contaminated run-off affecting groundwater and surface water.	Primary	Schedule 2 – Requirements	CEMP and associated management plan to be prepared prior to the commencement of construction.	Contractor(s)
~~A permit will be obtained for this discharge. For excavations any groundwater or surface water intercepted will be pumped out and passed through an appropriate form of treatment (such as a silt buster) before being discharged to an approved location.~~ ~~The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.~~						
~~Habitats~~	~~Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from connected watercourses:~~ ~~Physical measures such as trenches, and sandbags will be used to divert silty water from sensitive receptors. Vegetation corridors or other stabilisation measures will be used to act as buffer strips.~~ ~~Stockpiles will be located on level ground and materials appropriately stored.~~ ~~Development and application of Water Quality Management Plan.~~ ~~Dewatering to be by agreement with the Environment Agency or compliant with the RPS.~~	~~Proposed Development – installation of the Waterbeach Pipeline~~	~~Provision to prevent increased sediment loading of water column in the river Cam upstream from designated sites and qualifying features.~~	~~Secondary~~	~~Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans.~~	~~CEMP and associated management plan to be prepared prior to the commencement of construction.~~	
~~Water~~Air quality – Measures to ~~avoid disturbance to the River Cam that~~control emissions to air from temporary vehicle ~~releases of fine particles: construction interfacing with drainage ditches. Cam upstream from will be used for the transfer tunnel. qualifying features.~~ ~~Development and application of water quality management plan.~~ ~~Dewatering to be by agreement with the Environment Agency or compliant with the RPS.~~	Proposed ~~Development –~~ Provision to ~~prevent~~ control ~~increased sediment loading of water column in the river designated sites and Pipe-jacking~~	~~Primary~~	~~Schedule 1 – Authorised Development, Schedule 2 – Use of HDD for crossing of the River Cam and larger water courses Requirements~~	~~Contractor(s) could result in water column in the river~~		

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Mitigation measures Timing		Applied to Responsible	Justification	Mitigation type	Secured by	party	~~Responsible~~
~~Water quality~~	~~Measures to prevent increased risk of elevated suspended solids reaching the River Cam from dewatering activities.~~ ~~The conditions under which dewatering can discharge water to the River Cam will be agreed with the Environment Agency.~~ ~~The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.~~	~~Dewatering activities~~	~~Bespoke permit will contain conditions pertaining to quality, flow rates, and monitoring.~~	~~Tertiary~~	~~Compliance with all the conditions in the RPS.~~ ~~Temporary dewatering from excavations to surface water~~ ~~Or~~ ~~Bespoke permit if the conditions in this RPS cannot be met.~~	~~Dewatering arrangements and permits to be in place prior to the commencement of shaft and tunnel dewatering activities.~~	~~Contractor(s)~~

Mitigation measures	Applied to	Justification	Mitigation type	Secured by	Timing	Responsible party
Water Quality — Measures to prevent increased risk of elevated suspended solids reaching the River Cam from activities to hydrologically linked surface water features: Construction activities that impact on ordinary watercourses within the Internal Drainage Board (IDB) administrative areas such as ditches will require consent from Waterbeach Level IDB or Swaffham IDB. For those outside of this area consent will be sought from the Lead Local Flood Authority (LLFA). The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.						
Waterbeach pipeline — Provision to prevent			Secondary			
Groundwater	Measures to prevent increased risk to groundwater quality (and subsequently to hydrologically linked sites): All boreholes constructed as permanent installations would be sealed around casing tubes in soil and subsoil deposits close to the surface. The seal would prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table. Measures to prevent increased risk to groundwater flows (and subsequently to hydrologically linked sites). Risk of long-term impact to groundwater levels or flow would be eliminated by robust design and construction of all subsurface structures. Sealing of shafts. Impermeable pipe material for Waterbeach pipeline. Leak detection and monitoring.	Section 6.6 of the CoCP Part A, Water Resources and Flood Risk, contains a series of control measures relating to the protection of surface water, groundwater and aquifers.	Surface water runoff from uncontaminated hard surfaces will be managed through a surface water drainage system. Sustainable drainage features included for the access. Provision to prevent potentially contaminated runoff affecting groundwater and surface water.	Primary	Schedule 2 – Requirements	CEMP and associated management plan to be prepared prior to the commencement of construction.	
Air quality – traffic	Measures to control emissions to air from temporary vehicle movements.	Proposed Development – construction access routes	Provision to control emissions to air within acceptable limits as described in DMRB.	Secondary	Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans.	CEMP and associated management plan to be prepared prior to the commencement of construction	Contractor(s)
installation, excavation of	increased sediment loading of final effluent trench. water column in the river Earthworks to complete the qualifying features.	Cam upstream from.	landscape management plan.			designated sites and	
Requirement in Schedule 2 to	CEMP and associated			Tertiary			Contractor(s)
Flood risk activities permit	Measures to control water quality during works affecting watercourses (main river): • The conditions under which the works can proceed will be agreed with the Environment Agency. • The permit conditions will include a duty to carry out the works in accordance with permit limits/conditions and to monitor performance.	Proposed Development – construction of the outfall	Environmental permit (flood risk activities) will contain obligation pertaining to how the works are completed.	Tertiary	Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans and the requirement to obtain required consents for works affecting main river and ordinary watercourses.	Consents to be in place prior to construction activity. Application to consider a two-month determination period.	Contractor(s)
traffic	movements.	Development –	emissions to air		implement the CoCP Part A and B	management plan to be prepared	

Mitigation measures	Applied to	Justification	Mitigation type	Secured by	Timing	Responsible party
~~Land drainage consent CEMP and associated prepared~~ prior to the commencement of construction access routes ~~Contractor(s) management plan to be~~ including the preparation of ~~associated plans.~~ within acceptable limits as described in DMRB.						
~~Flood risk activities permit~~	~~Measures to control water quality during works affecting watercourses (main river):~~ ~~The conditions under which the works can proceed will be agreed with the Environment Agency.~~ ~~The permit conditions will include a duty to carry out the works in accordance with permit limits/conditions and to monitor performance.~~	~~Proposed Development construction of the outfall~~	~~Environmental permit (flood risk activities) will contain obligation pertaining to how the works are completed.~~	~~Tertiary~~	~~Requirement in Schedule 2 to implement the CoCP Part A and B including the preparation of associated plans and the requirement to obtain required consents for works affecting main river and ordinary watercourses.~~	~~Consents to be in place prior to construction activity.~~ ~~Application to consider a two-month determination period.~~	~~Contractor(s)~~
~~INNS~~	~~Measures to control risk of INNS during works affecting water courses:~~ ~~The conditions under which the works can proceed will be agreed with the Environment Agency.~~ ~~The permit conditions will include a duty to carry out the works in accordance with permit limits/conditions and to monitor performance.~~ ~~Preparation and application of CEMP that includes biosecurity measures.~~	~~Proposed Development construction of the outfall~~	~~Commitment to manage invasive species encountered.~~ ~~Commitment for biosecurity protocols to be applied by contractors~~	~~Tertiary~~ ~~Secondary~~	~~Requirement in Schedule 2 to implement the COCP Part A and B including the preparation of associated plans and the requirement to obtain required consents for works affecting main river and ordinary watercourses.~~	~~Consents to be in place prior to construction activity~~ ~~Application to consider a two-month determination period.~~ ~~CEMP and associated management plan to be prepared prior to the commencement of construction.~~	~~Contractor(s)~~
~~**Operation**~~							
	• Preparation and application of CEMP that includes biosecurity measures.					CEMP and associated management plan to be prepared prior to the commencement of construction.	
Operation							
Water quality	Measures to prevent deterioration in water quality of the River Cam (and subsequently to hydrologically linked sites): • Consent conditions relating to final treated effluent quality for discharge of prevent a discharge of biochemical oxygen demand (BOD), ammoniacal treated effluent to	Proposed Development –	Includes the emission limits that are set to		d e t e r i	r a t i o n	
INNS	Measures to control risk of INNS during works affecting water courses: • The conditions under which the works can proceed will be agreed with the Environment Agency. • The permit conditions will include a duty to carry out the works in accordance with permit limits/conditions and to monitor performance.	Proposed Development – construction of the outfall	Commitment to manage invasive species encountered. Commitment for biosecurity protocols to be applied by contractors	Tertiary Secondary	Requirement in Schedule 2 to implement the COCP Part A and B including the preparation of associated plans and the requirement to obtain required consents for works affecting main river and ordinary watercourses.	Consents to be in place prior to construction activity Application to consider a two-month determination period.	Contractor(s)

Mitigation measures	Applied to	Justification	Mitigation type	Secured by	Timing	Responsible party
in water nitrogen as N, total phosphorus and TSS from the proposed the River Cam quality. WWTP to the River Cam will be agreed with the Environment Agency. • The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Consent conditions relating to Dry Weather Flow (DWF) discharge from the proposed WWTP to the • River Cam will be agreed with the Environment Agency. The consent conditions place a duty to operate in accordance with permit limits and to monitor performance.			Proposed Development – Includes the emission limits Tertiary Compliance with the Environmental Permitting discharge of treated effluent that are set to prevent a (England and Wales) to the River Cam deterioration in water quality. (Amendment) Regulations 2018 In place prior to operation.	Operator	Application to consider a 12month determination period.	
Treated effluent quality	Design allows for modification/expansion of treatment processes to manage future flows.	Proposed WWTP	Provision to make physical changes to the proposed WWTP to meet future revisions of the consent limits.	Primary	Schedule 1 – Authorised Development, Schedule 2 – Requirements	Feature present from operation	Applicant
Water quality	• Inclusion of storm storage within the proposed WWTP that meets the requirements set by the Environment Agency. • Storage embedded in the design by virtue of the waste water transfer tunnel. • Regulatory compliance monitoring under the period. Environment Act (UK Government, 2021) will be used to assess the impact of stormwater spills to River Cam water quality.	Proposed WWTP	The Environment Agency applies water quality design standards when it issues permits for all new, improved or altered storm overflows.	Tertiary	Compliance with environmental permits for storm overflows and emergency overflows.	Consent in place at operation. Application to consider a 12month determination period. Application to be made in 2022	Applicant
~~Treated effluent quality~~	~~Design allows for modification/expansion of treatment processes to manage future flows.~~	~~Proposed WWTP~~	~~Provision to make physical changes to the proposed WWTP to meet future revisions of the consent limits.~~	~~Primary~~	~~Schedule 1 – Authorised Development, Schedule 2 – Requirements~~	~~Feature present from operation~~	~~Applicant~~
~~Water quality~~	~~Inclusion of storm storage within the proposed WWTP set by the Environment Agency. standards when it issues~~ ~~Storage embedded in the design by virtue of the permits for all new, improved~~ ~~Regulatory compliance monitoring under the~~ ~~Environment Act (UK Government, 2021) will be used~~ ~~to assess the impact of stormwater spills to River Cam~~ ~~water quality. 2022~~	~~Proposed WWTP~~	~~The Environment Agency applies water quality design overflows and emergency overflows.~~	~~Tertiary~~	~~Environmental permits for storm Application to consider a 12waste water transfer tunnel. or altered storm overflows. Application to be made in~~	~~Consent in place at operation.~~	~~Applicant that meets the requirements~~

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Mitigation measures		Applied to	Justification	Mitigation type	Secured by	Timing	Responsible party
Water quality	Design includes: • Surface water runoff from uncontaminated hard surfaces will be managed through a surface water drainage system. • Sustainable drainage features included for the access road. Proposed developments (sustainable drainage systems – SuDS) will be included in the design of the proposed WWTP where appropriate and feasible. • Requirement to agree surface water drainage proposals with the LLFA.	Proposed WWTP	Provision to prevent potentially contaminated run-off affecting groundwater and surface water.	Primary	Schedule 1 – Authorised Development, Schedule 2 – Requirements Requirement in Schedule 2 to prepare a detailed Surface Wate Drainage Design to be approved by the local authority.	Feature present from operation	Applicant
Groundwater	Measures to protect hydrologically linked habitats: • Risk of long-term impact to groundwater levels or flow would be eliminated by robust design and ~~off affecting groundwater and~~ construction of all subsurface structures. affecting groundwater • Sustainable drainage features included for the access road. • Surface water runoff from uncontaminated hard surfaces will be managed through a surface water drainage system. Standard measures for sustainable drainage. Proposed developments (SuDS) will be included in the design of Proposed WWTP where appropriate and feasible.	Proposed WWTP	Provision to prevent potentially ~~contaminated run-~~ ~~Requirements~~ contaminated run-off and surface water.	Primary	Schedule 1 – Authorised Development, Schedule 2 – ~~operation flow would be~~ Requirements	Feature present from operation	Applicant
Air quality – operation of WWTP	Measures to control emissions to air: • Any facility requiring an IED permit will have to comply with prescribed best available technique (BAT) outlined in the EC BAT Reference Document (BREF) for Waste Treatment. Examples of this include BAT 19 – secondary containment and BAT 14 – odour and leak detection.	Proposed Development – CHP /AD	Includes the emission limits that are set to provide event a deterioration in air quality.	Tertiary	Compliance with Environmental Permitting (England and Wales) (Amendment) Regulations 2018 - IED Permit	Environmental permit in place at operation. ~~A~~Environmental permit application ~~to be~~ made in 202~~2~~3. Application to consider a 12month determination period.	Applicant
Decommissioning							
Water quality	Measures to control emissions to the River Cam as set out within the Decommissioning Management Plan. Requirement to collect and treat residual waste water offsite. Compliance with relevant permit conditions as applied to the Existing Cambridge WWTP, including a duty to carry out the works in accordance with permit limits/conditions and to monitor performance.	Proposed Development – ceasing use of the existing outfall	Includes controls on decommissioning activities to reduce risks to ground and surface water features.	Secondary Tertiary	Requirement in Schedule 2 to prepare a detailed Decommissioning Management Plan including the preparation of associated plans, to be approved by the local authority. Existing EPR	Prior to commencement of decommissioning (drainage and cleaning of tanks)	Contractor(s) / Operator

6.5 Appropriate assessment

6.5.1 This stage seeks to determine whether implementation of the CWWTP will result in an AEOI of any European site identified at the screening stage as having the potential for LSE. It also considers the potential for in-combination effects from other plans and projects identified at Stage 1. Consideration of mitigation measures that may reduce the likelihood and significance of effects on the identified European sites are also included within this AA.

6.5.2 A European site's integrity depends on it being able to sustain its 'qualifying features' (i.e., those Annex 1 habitats, Annex II species, and Annex 1 bird populations for which it has been designated) and to ensure their continued viability. Therefore, this Stage 2: Appropriate Assessment focuses on those impacts judged likely to have an effect on the qualifying features of European sites, or where insufficient certainty regarding this remained at the Screening stage.

6.5.3 LSE arising from the Proposed WWTP were identified for the following sites and impact types:

- Devil's Dyke SAC – in relation to air pollution;
- The Wash and North Norfolk Coast SAC – in relation to water quality and quantity;
- The Wash SPA – in relation to water quality and quantity;
- The Wash Ramsar site – in relation to water quality and quantity;
- Ouse Washes SAC – in relation to water quality and quantity;
- Ouse Washes SPA – in relation to water quality and quantity; and
- Ouse Washes Ramsar site – in relation to water quality and quantity.

6.5.4 AA has been undertaken for these European sites to determine whether the Proposed Development will result in AEOI.

6.5.5 To reach a conclusion, consideration was given to whether the predicted impacts of the proposals (either alone or in combination) have the potential to:

- delay the achievement of conservation objectives for the site;
- interrupt progress towards the achievement of conservation objectives for the site;
- disrupt factors that help to maintain the favourable conditions of the site; and
- interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.

The conservation objectives for the above European sites are to ensure that the integrity of the site is maintained or restored as appropriate and to ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- extent and distribution of qualifying natural habitats;
- structure and function (including typical species) of qualifying natural habitats;
- supporting processes on which qualifying natural habitats rely;
- structure and function of the habitats of qualifying species;
- populations of qualifying species; and
- distribution of qualifying species within the site.

Air pollution

Devil's Dyke SAC

6.5.6 The site is designated for semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia).

6.5.7 During the construction phase, the Proposed Development has the potential to alter air quality due to toxic and non-toxic pollution events and this is likely to result in the following effects on the habitats for which the site is designated:

- physical damage – habitat degradation as a result of air quality changes;
- biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas; and
- toxic contamination – air pollution/changes to air quality (degradation).

6.5.8 This may lead to temporary and permanent effects on this site and its qualifying features.

6.5.9 The standard data form for the SAC and Natural England's Site Improvement Plan for Devil's Dyke SAC identify air pollution as a key threat and Natural England's 2015 Atmospheric Nitrogen Theme Plan identifies the site as being of sensitive to nitrogen and to have moderate levels of critical loads exceedance for nitrogen.

6.5.10 The SAC lies immediately adjacent to the A14 and A1304. These roads are key strategic roads between Cambridge and several market towns to the east, including Newmarket and Bury St Edmunds. In particular, the A14 is already subject to high levels of traffic from long-distance HGV and is known to be a key commuting corridor for people travelling to and from Cambridge. An increase in traffic due to the Proposed Development has potential to result in further high levels of traffic on the A14, which is likely to filter out onto nearby A roads, including the A1304, which lies adjacent to the SAC in the south.

6.5.11 A review of the SSSI condition units of habitats within the SAC and within 200m of the A14 and A1304 indicates that the semi-natural dry grassland, for which the SAC is designated, and which is within 200m of the strategic roads, is in favourable condition.

6.5.12 During the construction phase of the Proposed Development there is a risk of increased gaseous and particulate emissions resulting in air-borne pollutants/air pollution with a risk of increased atmospheric nitrogen deposition on the habitats/species within Devil's Dyke SAC from construction traffic passing within 200m on the adjacent A14 and from the operation of construction plant within the works site. Control measures will be implemented as set out in the CoCP Part A and B to control pollutants in order to minimise the potential for, and likely impacts of, airborne pollutants on sensitive habitats.

6.5.13 The identified effects have the potential to reduce the extent and distribution of functional habitat which supports the qualifying species' populations. Disturbance to qualifying species may impact upon survival. Potential construction pollution events are likely to be localised and of short duration and may result in temporary and permanent effects on this site and its qualifying features.

6.5.14 During the construction phase, the CoCP Part A and B (~~Appendix 2.1 & 2.2, App Doc Ref~~Application Document Reference 5.4.2.1 & 5.4.2.2) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. *Construction*

6.5.15 During construction of the Proposed Development there will be additional vehicle movements on the public highway network. Where additional vehicle movements are more than 100 heavy duty vehicles and/or 500 light duty vehicles per day for more than six months, the Base, Do-Minimum (no Proposed Development) and DoConstruction (with construction of the Proposed Development) traffic scenarios have been modelled at relevant worst case receptor locations using ADMS-Roads 5 to predict concentrations of NOx concentrations, nitrogen deposition and acid deposition at ecological designations. Overall, the Proposed Development's effect on air quality from construction vehicle movements on the public highway network is concluded to be not significant and no secondary mitigation measures are requiredTherefore, the construction phase is not anticipated to lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interests.

Air quality – operation of the Proposed WWTP

6.5.16 During the operational phase there is a risk of increased emissions resulting in airborne pollutants/air pollution with a risk of increased atmospheric nitrogen deposition on the habitats/species within Devil's Dyke SAC from air emissions associated with on-site combustion from the potential CHP plant, intermittent venting, fugitive emissions and from operational vehicle movements.

6.5.17 The Proposed WWTP will include combustion of natural gas and biogas within two boilers (one active, one standby), one CHP and one flare (emergency use only). The

CHP and boiler plant emit pollutants to air, primarily NO_x, which can affect air quality near the Proposed WWTP. The CHP and boilers would have a maximum combined thermal input of less than 10MW and therefore overall, emissions will be small. The

CHP and boilers will meet stringent emission requirements and be designed in such a way that effects on air quality are minimised.

6.5.18 Measures to control emissions to air: any facility requiring an IED permit will have to comply with prescribed BAT outlined in the EC BAT Reference Document (BREF) for Waste Treatment, examples of which include BAT 19 – secondary containment and BAT 14 – odour and leak detection.

6.5.19 Operation of the Proposed WWTP will lead to additional vehicle movements along roads leading to the Proposed WWTP. Although the operational traffic flows associated with the Proposed WWTP are similar to those at the Existing Cambridge WWTP, the traffic would be redistributed on local roads as the workforce and deliveries take new routes to the Proposed WWTP. There would be no change to AADT from those associated with the Existing Cambridge WWTP.

6.5.20 During operation, Whessoe Valves may open in an emergency situation and vent biogas, containing part methane, part carbon dioxide and other trace gases, directly to air from the highest point of a pressurised tank or container. The methane component of the biogas is much less dense than air and would rise and disperse quickly. Methane and carbon dioxide exist in low levels in the natural environment and are generally considered non-toxic gases at the levels of exposure that could possibly occur from the operation of a Whessoe valve. Whessoe valves are not expected to cause a new significant effect and are an intrinsic part of the Proposed WWTP's operational safety.

6.5.21 The operation of the Proposed WWTP will produce biogas. Biogas would be combusted within one of two boilers (one duty and one standby) to generate heat for the process. Additional biogas will either be exported to the national gas network following appropriate treatment, this is the preferred option, or combusted within a Combined Heat and Power (CHP) plant if exporting to the national gas network becomes infeasible or exported to the national gas network following appropriate treatment. There are no emissions to air from exporting the biogas to the national gas network and therefore this option has not been considered further in this chapter. This assessment has therefore conservatively considered emissions from the combined operation of boilers and CHPs.

6.5.22 Overall, the Proposed Development's effect on air quality from the operational energy plant at the Proposed WWTP is concluded to be not significant and no secondary mitigation are required.

6.5.23 Both energy plant and road traffic will have operational impacts on air quality. Therefore, the impact of both sources has been combined to demonstrate the predicted inter-related effect on air quality at modelled receptor locations. The outputs of the ADMS 5 and ADMS Roads models at sensitive receptors were combined to demonstrate the overall combined effects. The combined operation of energy plant and road vehicles during operation has a 'negligible' effect on air quality is therefore not significant and no secondary mitigation or enhancement measures are required.

6.5.24 The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site.

6.5.25 The supplementary advice on conserving and restoring site features provides detailed targets for the overarching Conservation Objectives provided above. The mitigation measures provided within this assessment will aim to maintain these targets by appropriately mitigating for construction phase impacts with regard to the outlined risks. Mitigation aims to ensure that the designated features of the site are afforded an appropriate level of protection, with regard to each features conservation objectives, any specific conservation supplementary advice and current conservation status.

6.5.26 Therefore, the operational phase is not anticipated to lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interest.

Water quality

Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar site.

6.5.27 Due to the geographical location and overlap of these protected sites, they have been considered together in the following assessment.

6.5.28 The Wash and North Norfolk Coast SAC is designated for sandbanks which are slightly covered by sea water all the time, mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, reefs, salicornia and other annuals colonising mud and sand, Atlantic salt meadows (Glauco-Puccinellietalia maritimae), Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticose), coastal lagoons, harbour seal and otter.

6.5.29 The Wash SPA is designated for bar-tailed godwit, *Limosa lapponica,* bewick's swan, *Cygnus columbianus bewickii,* black-tailed godwit, *Limosa limosa islandica,* common scoter, *Melanitta nigra,* common tern, *Sterna hirundo,* curlew, *Numenius arquata,* dark-bellied Brent goose, *Branta bernicla bernicla,* dunlin, *Calidris alpina alpina,* gadwall, *Anas strepera,* goldeneye, *Bucephala clangula,* grey plover, *Pluvialis squatarola,* knot, *Calidris canutus,* little tern, *Sterna albifrons,* oystercatcher, *Haematopus ostralegus,* pink-footed goose, *Anser brachyrhynchus,* pintail, *Anas*

acuta, redshank, *Tringa totanus,* sanderling, *Calidris alba*, shelduck, *Tadorna tadorna,* turnstone, *Arenaria interpres,* wwigeon, *Anas Penelope* and waterbird assemblage.

6.5.30 The Wash Ramsar site is designated for:

- Ramsar Criterion 1 – The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels;
- Ramsar Criterion 3 – the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters;
- Ramsar Criterion 5 – a range of species with peak counts in spring/autumn, and with peak counts in winter;
- Ramsar Criterion 6 – a range of species for possible future consideration, with peak counts in spring/autumn and in winter;
- Ramsar Criterion 6 – species with peak counts in spring/autumn and in winter and;
- Ramsar Criterion 6 for future consideration – species with peak counts in spring/autumn and winter. *Construction*

6.5.31 The Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar site are located approximately 70km downstream of the Proposed Development, and therefore a considerable distance from the 10km EZoI for which impacts on water quality have been determined as being potentially negative. However, these sites are distantly hydrologically connected to the Proposed Development via the River Cam and thus there is a potential pathway for effects due to construction, including from toxic and non-toxic pollution events which could lead to deterioration of qualifying habitats and supporting habitats of Annex I and II species for which these sites are designated. As a consequence, there could be biological disturbance to these species through deterioration of, or reduction in, water quality and qualifying/supporting habitats and therefore temporary and/or permanent effects on the qualifying features of these sites.

6.5.32 During the construction of the Proposed Development, there is a risk of pollution events from spillages of potentially contaminating materials through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), which may give rise to contamination of surface water.

6.5.33 Changes in water quality due to pollution events as a result of construction could lead to changes in turbidity and increased sedimentation, which can have negative effects on the life cycle of the qualifying species. Construction works adjacent to the River Cam have the potential to impact downstream water quality, siltation and/or hydrological regime, which could result in non-toxic contamination and smothering of SPA supporting habitats. In addition, silt may build up at the Denver Sluice which

could impede drainage of floodwater that would impact the qualifying features of the designated sites. There is also potential that water pollution events could occur, which are likely to result in toxic contamination and are usually linked to direct mortality of qualifying species. Construction activities can affect vegetation as a result of habitat loss and degradation caused by changes in water quality and turbidity, increased sedimentation, and changes in habitat availability for the qualifying species of these sites.

6.5.34 Discharge of silt-laden water from excavations, silt screens or construction area runoff may also affect surface water quality. As a result, it is possible for pollution or non-toxic substances to enter the waterway, resulting in potential nutrient enrichment and degradation of vegetation communities, reducing the suitability of

the habitat for associated species. Potential construction pollution events are likely to be localised and of short duration and may result in temporary and/or permanent effects on these sites and their qualifying features. The identified effects have the potential to reduce the extent and distribution of functional habitat which supports the qualifying species' populations. This may result in the loss or damage of qualifying vegetation as a direct result of physical damage to habitats, habitat degradation and/ or fragmentation. These could be within the Habitat Sites itself and/or in adjacent areas functioning as supporting habitats. Birds are likely to avoid areas of qualifying habitat within the vicinity of the works due to physical damage.

6.5.35 There are known INNS within the River Cam catchment including Himalayan balsam, *Impatiens glandulifera* and floating pennywort, *Hydrocotyle ranunculoides*. Construction activities have the potential to disperse INNS, e.g., through disturbance of the bed and banks of rivers, thus allowing INNS to move elsewhere downstream, or through the transfer from equipment moved from different geographical locations. Altering presence of INNS can result in changes to species assemblages.

6.5.36 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events. This is likely to result in the following effects on habitats and species for which these sites are designated:

- physical damage – habitat degradation as a result of water quality changes in case of pollution events;
- biological disturbance – changes in habitat availability and potential for qualifying species to be displaced from current areas;
- toxic contamination – water pollution / changes to water quality (degradation);
- non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition, which may lead to smothering of qualifying habitats; and
- introduction and spread of invasive non-native species.

6.5.37 The mitigation measures described in the following paragraphs are proposed with regard to potential impacts from toxic and non-toxic contamination of water quality as a result of construction works associated with the Proposed Development and are relevant to all of the qualifying features of The Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar.

6.5.38 During the construction phase, there will be a requirement to implement the CoCP Part A and B (~~Appendix 2.1 & 2.2, App Doc Ref~~Application Document Reference 5.4.2.1. & 5.4.2.2) and associated management plans. These will specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction work for

which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1).

6.5.39 Measures to prevent increased risk of elevated suspended solids reaching the River

Cam and downstream locations which could result in non-toxic contamination of

surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA and Ramsar species are as follows:

- access routes and haul routes within the workings area will be kept free from mud and dust to minimise silty runoff.
- surface water management plans will be prepared and applied and these plans will comply with the requirements of the CoCP.
- the appointed contractor will be required to obtain separate consents and permits for works affecting watercourses. This will include agreeing works methods as well as any monitoring requirements. The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.

6.5.40 Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from dewatering activities which could result in nontoxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species are as follows:

- the conditions under which water, used in testing the Waterbeach waste water transfer pipelines, can be discharged to local drains or watercourses will be agreed with the Environment Agency;
- A permit will be obtained for this discharge. For excavations any groundwater or surface water intercepted will be pumped out and passed through an appropriate form of treatment (such as a silt buster) before being discharged to an approved location.

- the consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.

6.5.41 Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from connected watercourses which could result in non-toxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species are as follows:

- Physical measures such as trenches and sandbags will be used to divert silty water from sensitive receptors. Vegetation corridors or other stabilisation measures will be used to act as buffer strips.
- Stockpiles will be located on level ground and materials appropriately stored.
- Measures to avoid disturbance to the River Cam which could result in releases of fine particles are as follows:
- use of horizontal directional drilling (HDD) for crossing of the River Cam and larger drainage ditches and;
- pipe-jacking for the waste water transfer tunnel.

6.5.42 Measures to prevent increased risk of elevated suspended solids reaching the River Cam from activities to hydrologically linked surface water features which could result in non-toxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species re as follows:

- Construction activities that impact on ordinary watercourses within the IDB administrative area such as ditches will require consent from Waterbeach Level IDB or Swaffham IDB. For those outside of this area consent will be sought from the LLFA.
- The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance

6.5.43 The measures to prevent increased risk to groundwater quality (and subsequently to hydrologically linked sites) which could result in non-toxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species is described here.

- All boreholes constructed as permanent installations would be sealed around casing tubes in soil and sub-soil deposits close to the surface. The seal would prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table.

6.5.44 The measures to prevent the dispersal of INNS (and subsequently to hydrologically linked sites) is as described in

- The CoCP. This has a requirement for the implementation of biosecurity controls including measures to control risk of INNS during works affecting water courses.

6.5.45 The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The supplementary advice on conserving and restoring site features provides detailed targets for the overarching Conservation Objectives provided above. The mitigation measures provided within this assessment will aim to maintain these targets by appropriately mitigating construction phase impacts with regard to the outlined risks. Mitigation aims to ensure that the designated features of the site are afforded an appropriate level of protection, with regard to each feature's conservation objectives, any specific conservation supplementary advice and current conservation status. Therefore, the construction phase is not anticipated to lead to a

decline in the quality or status of the habitats or distribution and abundance of feature(s) of interests.

Operation of the proposed WWTP

6.5.46 During the operational phase of the Proposed WWTP there are no predicted changes in water quality due to pollution events from spillages of potentially contaminating

materials which may give rise to contamination of surface water species associated with The Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar site. A contaminant transport study (~~Appendix 20.8, App Doc Ref~~Application Document Reference 5.4.20.8) demonstrates the limited transmissivity of the local hydrogeological conditions and does not identify any significant risk to hydrologically linked locations. Also, there is no predicted discharge of silt-laden water or runoff, therefore, as a result, there is no pathway for pollution or toxic substances to enter the waterway, resulting in potential nutrient enrichment and degradation of vegetation communities, reducing the suitability of the habitat for associated faunal/floral species.

6.5.47 During the operational phase there is a risk of change in water chemistry occurring from changes in final effluent quality discharged to the River Cam from the Proposed WWTP. The River Cam currently receives treated effluent and intermittent storm flows, depending on available storage capacity at the time of any given storm and storm frequency. Storm discharges have the potential to cause periodic worsening of water quality.

6.5.48 Cambridge WWTP River and Outfall Modelling (Mike 3) (~~Appendix 20.6, App Doc Ref~~

Application document reference 00001-100006-ZZZZZZ-ZZZ-RPT-Y-3111~~5.4.20.6~~) assesses velocities and mixing of the effluent as it enters the River Cam. The assessment demonstrates that the tested new outfall layout gives a good performance in terms of location/alignment on the river and flow spreading for each flow case. The outfall

jet gets turned by the river flow and does not impact directly on the opposite bank. Velocities in the outfall plume are high close to the outfall but quickly reduce and are not exceptional compared to fluvial flood flows in the river. Therefore, given there is an apron in front of the outfall, there is no cause for concern from these model results that the new outfall would lead to erosion in the river. There is good energy dissipation and flow spreading in the vicinity of the outfall. The effluent quickly mixes in with the ambient river flow. The new Outfall alignment appears to give better initial mixing and less flow disturbance compared to the existing outfall. The rapid initial mixing apparent from the velocity results should minimise impacts on water quality and the environment. As above, the new outfall appears to offer improved performance compared to the existing outfall despite higher storm flows being considered. The effluent plume quickly mixes with the river flows for all the cases tested.

6.5.49 CFD modelling of the outfall (~~Appendix 20.7, App Doc Ref 5.4.20.7~~Application document 00001-100006-ZZZZZZ-ZZZ-RPTY-3112) demonstrates that except in the immediate vicinity of the outfall (where scour protection is intended) the velocities at the riverbed are well below 1m/s and excessive scour is not expected; this applies to all three flow cases presented in the study. The flows from the final effluent outfall compartment indicate velocities of approximately 0.5m/s or less in the vicinity of the riverbanks, and this is considered to present a low risk to both the protected banks and natural (vegetated) riverbanks.

6.5.50 The environmental permit for the Proposed Development will require an Environmental Management System (EMS) which will cover general management of the Proposed Development, equipment maintenance, contingency plans, accident prevention and emergency response (including pollution response) as well as defining monitoring activities. Storm water models indicate that improved storm water management resulting from increased treated flows, will reduce the number of settled storm water discharges (storm spill) to the River Cam. The storm water management approach will be finalised and agreed with the Environment Agency. Reduction in frequency of storm water discharges to the River Cam would have a beneficial impact on downstream water quality. There will be a beneficial impact on river water quality close to the location of the outfall at the time the Proposed WWTP comes into operation, when compared to current river water quality.

6.5.51 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment (~~Appendix 20.11, App Doc Ref~~Application Document Reference 5.4.20.11) prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027-2028, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions

for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements.

6.5.52 Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the River Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (Reach 334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6% at the end of reach 336. It is likely that the removal of the Waterbeach WRC under the new works permit scenario will sustain a predicted reduction in ortho-p concentrations to the downstream limit of the River Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving water body. Discharge limits for physico-chemical Supporting Elements including BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body.

6.5.53 This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the Proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment, including increase in flows to the Proposed WWTP.

6.5.54 Operation of the Proposed WWTP has the potential to affect the site through the following pathways:

- changes to surface water quality as a result of the discharge of treated effluent to the River Cam may affect aquatic species; and
- impacts on water quality in the river through intermittent storm flow discharges and use of the CSO during more extreme rainfall events.

6.5.55 Proposed mitigation measures with regard to potential impacts from changes in water quality as a result of operation of the Proposed Development which could

result in toxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species are described below.

6.5.56 As described within Section 5 (Table 5.1) of this document, the following mitigation measures are to be applied in the operation phase of the Proposed Development.

6.5.57 Measures to prevent deterioration in water quality of the River Cam (and subsequently to hydrologically linked sites) are as follows:

- Consent conditions relating to final treated effluent quality for discharge of BOD, ammoniacal nitrogen as N, total phosphorus and TSS from the Proposed WWTP to the River Cam will be agreed with the Environment Agency.
- The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body.
- Consent conditions relating to DWF discharge from the Proposed WWTP to the River Cam will be agreed with the Environment Agency. The consent conditions place a duty to operate in accordance with permit limits and to monitor performance.
- Regulatory compliance monitoring under the Environment Act (UK Government, 2021) will be used to assess the impact of stormwater spills to the River Cam water quality.

6.5.58 The design allows for modification/expansion of treatment processes to manage future flows:

- Provision to make physical changes to the Proposed WWTP to meet future revisions of the consent limits; and
- The Environment Agency applies water quality design standards when it issues permits for all new, improved or altered storm overflows.

6.5.59 The design includes the following drainage aspects:

- management of surface water runoff from uncontaminated hard surfaces through a surface water drainage system;
- inclusion of sustainable drainage features included for the access; and
- provision to prevent potentially contaminated runoff affecting groundwater and surface water.

6.5.60 The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site.

Therefore, the operational phase is not anticipated to lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interest. ***The Ouse Washes SAC, SPA and Ramsar site***

6.5.61 Due to the geographical location and overlap of these protected sites, they have been considered together in the following assessment.

6.5.62 Ouse Washes SAC is designated for spined loach (*Cobitis taenia*).

6.5.63 Ouse Washes SPA is designated for bewick's swan, black-tailed godwit, *Limosa limosa limosa,* breeding bird assemblage, gadwall, garganey, *Anas querquedula,* hen harrier, *Circus cyaneus,* mallard, *Anas platyrhynchos,* pintail, ruff, *Philomachus pugnax,* shoveler, *Anas clypeata*, teal, *Anas crecca*, waterbird assemblage, whooper swan, *Cygnus cygnus* and wigeon.

6.5.64 Ouse Washes Ramsar site is designated for:

- Ramsar Criterion 1 – the site is one of the most extensive areas of seasonallyflooding washland of its type in Britain;
- Ramsar Criterion 2 – the site supports several nationally scarce plants; invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species large darter dragonfly *Libellula fulva* and the rifle beetle *Oulimnius major* and that it also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally flooding wet grassland;
- Ramsar Criterion 5 – assemblages of international importance: Species with peak counts in winter: 59,133 waterfowl (five-year peak mean 1998/1999 – 2002/2003); and
- Ramsar Criterion 6 – species/populations identified subsequent to designation for possible future consideration.
- *Construction*

6.5.65 The Ouse Washes SAC, SPA and Ramsar sites are not located directly downstream of the Proposed Development. These sites are located on a tributary of the River Great Ouse, upstream of the Denver sluice, therefore effluent would not flow directly through these sites. Whilst the hydrological pathway enters the River Great Ouse system downstream of the Ouse Washes SAC, SPA and Ramsar sites, upstream effects contributing to lower flows and/or increased sediment loading can result in silt build up downstream of these sites, particularly of concern at the Denver Sluice. These effects have the potential to impede drainage of floodwater from the Ouse Washes, with the potential to impact the spring bird breeding assemblage. This may lead to temporary and/or permanent effects on this site and its qualifying features. When supporting mobile species, such as birds, activities during construction which cause pollution events and biological disturbances could result in permanent and

temporary habitat loss of the Habitat Site itself and/or in functionally linked land used by its qualifying species. Physical damage during construction, as result of pollution events, may include habitat degradation and changes to habitat availability. These impacts can have a direct effect on feeding or roosting behaviours, increased energy expenditure due to more frequent flights, abandonment of nests, disrupted incubation of eggs and desertion of the supporting habitat by the bird species this site is designated for.

6.5.66 There is potential for the loss or damage of the Ramsar qualifying vegetation and SPA supporting habitat as a direct result of physical habitat loss, habitat degradation and/or fragmentation. These could be within the Habitat Site itself and/or in adjacent areas functioning as supporting habitats. Disturbance to qualifying species when they are foraging may jeopardise adult fitness, survival, and breeding success by displacing birds from preferred feeding grounds. Effects of displacement may be temporary or long-lasting and may result in redistribution within or from a site. Changes in natural succession may be observed within the Ramsar qualifying plant species. Direct mortality may be observed within all qualifying species but are most likely to affect plant and invertebrate species due to their absent/low mobility. Changes in water quality due to pollution events as result of construction could lead to changes in turbidity and increased sedimentation, which can have negative effects on the life cycle of the qualifying species. Construction activities adjacent to the River Cam have the potential to impact downstream water quality, siltation and/or hydrological regime, which could result in non-toxic contamination or impede drainage of floodwater.

6.5.67 Invertebrate fauna are highly vulnerable to biological disturbances, such as changes in habitat availability due to water quality degradation. Water quality changes could occur during construction as a result of pollution events or increased sedimentation from disturbed sediments. During the construction of the Proposed Development there is a risk of pollution events from spillages of potentially contaminating materials occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways) which may give rise to contamination of surface water species associated with these sites.

6.5.68 Discharge of silt-laden water from excavations, silt screens or construction area runoff may also affect surface water quality. It is therefore possible for pollution or toxic substances to enter the waterway, resulting in potential nutrient enrichment and degradation of vegetation communities, reducing the suitability of the habitat for associated faunal/floral species. Potential construction pollution events are likely to be localised and of short duration and may result in temporary and permanent effects on this site and its qualifying features. The identified effects have the potential to reduce the extent and distribution of functional habitat which supports the qualifying species' populations.

6.5.69 There are known INNS within the River Cam catchment including Himalayan Balsam and Floating Pennywort. Construction activities have the potential to disperse INNS

such as through disturbance of the bed and banks of rivers, allowing INNS to move elsewhere downstream, or through the transfer from equipment moved from different geographical locations. INNS can result in changes to species assemblages.

6.5.70 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in the following effects on the habitats for which the site is designated:

- physical damage – habitat degradation as a result of water quality changes in case of pollution events;
- biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas;
- toxic contamination – water pollution/changes to water quality (degradation);
- non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked habitats; and
- introduction and spread of INNS.

6.5.71 Proposed mitigation measures with regard to potential impacts from toxic and nontoxic contamination on water quality as a result of construction works associated with the Proposed Development are as described below.

6.5.72 During the construction phase, there will be a requirement to implement the CoCP Part A and B (~~Appendix 2.1 & 2.2, App Doc Refs~~Application Document References 5.4.2.1 & 5.4.2.2) and associated management plans. These will specify the range of measures taken to avoid and minimise impacts that may occur in construction. Specific aspects of construction work for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1).

6.5.73 There is an increased risk of elevated suspended solids reaching the River Cam and downstream locations. This could result in non-toxic contamination of surface water, cause sediments to build up at the Denver sluice and lead to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA and Ramsar species. Measure to prevent this risk are as follows:

- Access routes and haul routes within the workings area will be kept free from mud and dust to minimise silty runoff.
- Surface water management plans will be prepared and applied, and these plans will comply with the requirements of the CoCP.

The appointed contractor will be required to obtain separate consents and permits for works affecting watercourses. This will include agreeing works methods as well as any

monitoring requirements. The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance

6.5.74 Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from dewatering activities which could result in nontoxic contamination of surface water and cause sediments to build up at the Denver sluice, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species are as follows:

- The conditions under which water, used in testing the Waterbeach waste water transfer pipelines, can be discharged to local drains or watercourses will be agreed with the Environment Agency.
- A permit will be obtained for this discharge. For excavations any groundwater or surface water intercepted will be pumped out and passed through an appropriate form of treatment (such as a silt buster) before being discharged to an approved location.
- The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.

6.5.75 Measures to prevent increased risk of elevated suspended solids reaching the River Cam and downstream locations from connected watercourses which could result in non-toxic contamination of surface water and cause sediments to build up at the Denver sluice (leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species) are as follows:

- Physical measures such as trenches and sandbags will be used to divert silty water from sensitive receptors. Vegetation corridors or other stabilisation measures will be used to act as buffer strips.
- Stockpiles will be located on level ground and materials appropriately stored.

6.5.76 Measures to avoid disturbance to the River Cam that could result in releases of fine particles are as follows:

- HDD for crossing of the River Cam and larger drainage ditches; and
- pipe-jacking for the waste water transfer tunnel.

6.5.77 Measures to prevent increased risk of elevated suspended solids reaching the River Cam from activities to hydrologically linked surface water features which could result in non-toxic contamination of surface water and cause sediments to build up at the Denver sluice (leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species) are as follows:

- Construction activities that impact on ordinary watercourses, such as ditches, within the IDB administrative area will require consent from Waterbeach Level

IDB or Swaffham IDB. For those outside of this area consent will be sought from the LLFA.

- The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance.

6.5.78 The measure to prevent increased risk to groundwater quality (and subsequently to hydrologically linked sites) which could result in non-toxic contamination of surface water, leading to potential physical damage to qualifying and supporting SPA habitats and impacts on qualifying SAC/SPA Ramsar species is as follows:

- All boreholes constructed as permanent installations would be sealed around casing tubes in soil and sub-soil deposits close to the surface. The seal would prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table.

6.5.79 Measures to prevent the dispersal of INNS (and subsequently to hydrologically linked sites) are included in the CoCP, which has a requirement for the implementation of biosecurity controls including measures to control risk of INNS during works affecting water courses.

6.5.80 The significance of any effect has been considered objectively against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The supplementary advice on conserving and restoring site features provides detailed targets for the overarching Conservation Objectives provided above. The mitigation measures provided within this assessment will aim to maintain these targets by appropriately mitigating for construction phase impacts with regard to the outlined risks. Mitigation aims to ensure that the designated features of the site are afforded an appropriate level of protection, with regard to each feature's conservation objectives, any specific conservation supplementary advice and current conservation status. Therefore, the construction phase is not anticipated to lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interests.

Operation of the proposed WWTP

6.5.81 Operation of the Proposed WWTP has the potential to affect the site through the following pathways:

- changes to surface water quality as a result of the discharge of treated effluent to the River Cam affecting aquatic species; and
- impacts on water quality in the river through intermittent storm flow discharges and use of the CSO during more extreme rainfall events.

6.5.82 During the operational phase of the Proposed WWTP, there are no predicted changes in water quality due to pollution events from spillages of potentially contaminating

materials which may give rise to contamination of surface water species associated with the Ouse Washes SAC, SPA and Ramsar site. A contaminant transport study (~~Appendix 20.8, App Doc Ref~~Application Document Reference 5.4.20.8) demonstrates the limited transmissivity of the local hydrogeological conditions and does not identify any significant risk to hydrologically linked locations. Also, there is no predicted discharge of silt-laden water or runoff, therefore, as a result, there is no pathway for pollution or toxic substances to enter the waterway, resulting in potential nutrient enrichment and degradation of vegetation communities, reducing the suitability of the habitat for associated faunal/floral species.

6.5.83 During the operational phase there is a risk of change in water chemistry occurring from changes in final effluent quality discharged to the River Cam from the Proposed WWTP. The River Cam currently receives treated effluent and intermittent storm flows, depending on storage capacity and storm frequency. Storm discharges have the potential to cause periodic worsening of water quality.

6.5.84 Cambridge WWTP River and Outfall Modelling (Mike 3) (~~App Doc Ref~~Application document reference 00001-100006-ZZZZZZ-ZZZ-RPT-Y-3111) assesses velocities and mixing of the effluent as it enters the River Cam. The assessment demonstrates that the tested new outfall layout gives a good performance in terms of location/alignment on the river and flow spreading for each flow case. The outfall jet gets turned by the river flow and does not impact directly on the opposite bank. Velocities in the outfall plume are high close to the outfall but quickly reduce and are not exceptional compared to fluvial flood flows in the river. Therefore, given there is an apron in front of the outfall, there is no cause for concern from these model results that the new outfall would lead to erosion in the river. There is good energy dissipation and flow spreading in the vicinity of the outfall. The effluent quickly mixes in with the ambient river flow. The new outfall alignment appears to give better initial mixing and less flow disturbance compared to the existing outfall. The rapid initial mixing apparent from the velocity results should minimise impacts on water quality and the environment. As above, the new outfall appears to offer improved performance compared to the existing outfall despite higher storm flows being considered. The effluent plume quickly mixes with the river flows for all the cases tested.

6.5.85 CFD modelling of outfall (Application document 00001-100006-ZZZZZZ-ZZZ-RPT-Y3112) demonstrates that except in the immediate vicinity of the outfall (where scour protection is intended) the velocities at the river bed are well below 1m/s and excessive scour is not expected; this applies to all three flow cases presented in the study. The flows from the final effluent outfall compartment indicate velocities of approximately 0.5m/s or less in the vicinity of the riverbanks, and this is considered to present a low risk to both the protected banks and natural (vegetated) riverbanks.

6.5.86 The environmental permit for the Proposed Development will require an EMS which will cover general management of the Proposed Development, equipment maintenance, contingency plans, accident prevention and emergency response

(including pollution response) as well as defining monitoring activities. Storm water models indicate that improved storm water management resulting from increased treated flows, will reduce the number of settled storm water discharges (storm spill)

to the River Cam. The storm water management approach will be finalised and agreed with the Environment Agency. Reduction in frequency of storm water discharges to the River Cam would have a beneficial impact on downstream water quality. There will be a beneficial impact on river water quality close to the location of the outfall at the time the Proposed WWTP comes into operation, when compared to current river water quality.

6.5.87 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment (~~App Doc Ref~~Application Document Reference 7.1), prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027 – 2028, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l.

6.5.88 The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the River Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (Reach 334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6% at the end of reach 336. It is likely that the removal of Waterbeach WRC under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the River Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario, there will be no adverse impacts upon biological quality elements of the receiving water body. Discharge limits for physico-chemical Supporting Elements including BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency.

6.5.89 The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site

will be affected. Furthermore, a phased permit approach will be adopted for the Proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment, including increase in flows to the Proposed WWTP.

6.5.90 Operation of the Proposed WWTP has the potential to affect the site through the following pathways:

- changes to surface water quality as a result of the discharge of treated effluent to the River Cam affecting aquatic species; and
- impacts on water quality in the river through intermittent storm flow discharges and use of the CSO during more extreme rainfall events.

6.5.91 As described within Section 5 (Table 5.1) of this document, the following mitigation measures are to be applied during the operation phase of the Proposed Development.

Measures to prevent deterioration in water quality of the River Cam (and subsequently to hydrologically linked sites) are:

- Consent conditions relating to final treated effluent quality for discharge of BOD, ammoniacal nitrogen as N, total phosphorus and TSS from the Proposed WWTP to the River Cam will be agreed with the Environment Agency.
- The consent conditions will include a duty to operate in accordance with permit limits and to monitor performance. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body.
- Consent conditions relating to DWF discharge from the Proposed WWTP to the River Cam will be agreed with the Environment Agency. The consent conditions place a duty to operate in accordance with permit limits and to monitor performance.
- Regulatory compliance monitoring under the Environment Act (UK Government, 2021) will be used to assess the impact of storm water spills to the River Cam water quality.

6.5.92 The design allows for modification/expansion of treatment processes to manage future flows:

- Provision to make physical changes to the Proposed WWTP to meet future revisions of the consent limits; and

- The Environment Agency applies water quality design standards when it issues permits for all new, improved or altered storm overflows.

6.5.93 The design includes the following drainage aspects:

- management of surface water runoff from uncontaminated hard surfaces through a surface water drainage system;
- inclusion of sustainable drainage features for the access; and
- Provision to prevent potentially contaminated runoff affecting groundwater and surface water.

6.5.94 The significance of any effect has been considered objectively against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. Therefore, the operational phase is not anticipated to lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interest.

Water quantity

Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar site

6.5.95 Water quantity relates only to the operational phase of the Proposed Development and has been addressed as such in this assessment.

6.5.96 Due to the geographical location and overlap of these protected sites, they have been considered together in the following assessment. See sections 6.4.26 – 6.2.48 for a description of the qualifying features of Wash and North Norfolk Coast SAC, Wash SPA and Wash Ramsar.

Operation

6.5.97 During the operational phase there is a risk of changes in final effluent quantity discharged to the River Cam from the Proposed WWTP. The River Cam currently receives treated effluent and intermittent storm flows, depending on available storage capacity and storm frequency.

6.5.98 Operation of the Proposed WWTP has the potential to affect these sites through the following pathways:

- increase in water levels in the River Cam resulting from the discharge of treated effluent; and

6.5.99 Increases in the final effluent quantity discharged into the River Cam has the potential to affect flow regimes, which can lead to changes in water velocity and the benthic structure of the riverbed downstream of the Proposed Development. Modified flow regime also has the potential to modify the channel form of the river, leading to scouring and breakdown of riverbanks. Cambridge WWTP River and Outfall Modelling (Mike 3) (~~App Doc Ref~~Application document reference 00001-100006-

ZZZZZZ-ZZZ-RPT-Y-3111) assesses velocities and mixing of the effluent as it enters the River
Cam. The assessment demonstrates that the tested new outfall layout gives a good performance in terms of location/alignment on the river and flow spreading for each flow case. The outfall jet gets turned by the river flow and does not impact directly on the opposite bank. Velocities in the outfall plume are high close to the outfall but quickly reduce and are not exceptional compared to fluvial flood flows in the river. Therefore, given there is an apron in front of the outfall, there is no cause for concern from these model results that the new outfall would lead to erosion in the river. There is good energy dissipation and flow spreading in the vicinity of the outfall. The effluent quickly mixes in with the ambient river flow. The new outfall alignment appears to give better initial mixing and less flow disturbance compared

to the existing outfall. As above, the new outfall appears to offer improved performance compared to the existing outfall despite higher storm flows being considered.

6.5.100 CFD modelling of Outfall (Application document 00001-100006-ZZZZZZ-ZZZ-RPT-Y-3112) demonstrates that except in the immediate vicinity of the outfall (where scour protection is intended) the velocities at the riverbed are well below 1.0m/s and excessive scour is not expected; this applies to all three flow cases presented in the study. The flows from the FE outfall compartment indicate velocities of approximately 0.5m/s or less in the vicinity of the riverbanks, and this is considered to present a low risk to both the protected banks and natural (vegetated) riverbanks.

6.5.101 The fluvial model (~~Appendix 20.5, App Doc Ref~~Application Document Reference 5.4.20.5) demonstrates no appreciable change in water levels as a result of the relocated outfall and changes to effluent volumes. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the Proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the Proposed WWTP.

6.5.102 The significance of any effect has been considered objectively against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. Therefore, the operational phase is not anticipated to lead to changes in water quantity which would lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interest and no secondary mitigation measures are proposed.

The Ouse Washes SAC, SPA and Ramsar site

6.5.103 Water quantity relates only to the operational phase of the Proposed Development and has been addressed as such in this assessment.

6.5.104 Due to the geographical location and overlap of these protected sites, they have been considered together in the following assessment. See sections 6.4.60 – 6.4.62 for descriptions of qualifying features of Ouse Washes SAC, SPA and Ramsar.

Operation

6.5.105 During the operational phase there is a risk of changes in final effluent quantity discharged to the River Cam from the Proposed WWTP. The River Cam currently receives treated effluent and intermittent storm flows, depending on available storage capacity and storm frequency.

6.5.106 Operation of the Proposed WWTP has the potential to affect these sites through the following pathways:

- increase in water levels in the River Cam resulting from the discharge of treated effluent; and

6.5.107 Increases in the final effluent quantity discharged into the River Cam has the potential to affect flow regimes, which can lead to changes in water velocity and the benthic structure of the riverbed downstream of the Proposed Development. Fine particle substrates can smother coarser habitat types which are preferred by spined loach and invertebrate distribution, leading to altered species compositions in the Ouse Washes SAC. Modified flow regime also has the potential to modify the channel form of the river, leading to scouring and breakdown of riverbanks, eventually changing the form of the channel or existing floodplains, associated bankside habitat and wetlands which support Ouse Washes SPA species. There is potential for the loss or damage of the Ramsar qualifying vegetation and SPA supporting habitat as a direct result of physical habitat loss, habitat degradation and/ or fragmentation. These could be within the Habitat Sites itself and/or in adjacent areas functioning as supporting habitats. Disturbance to qualifying species when they are foraging may jeopardise adult fitness, survival, and breeding success by displacing birds from preferred feeding grounds. Effects of displacement may be temporary or long-lasting and may result in redistribution within or from a site. Changes in natural succession may be observed within the Ramsar qualifying plant species. Direct mortality may be observed within all qualifying species but are most likely to affect plant and invertebrate species due to their absent/low mobility.

6.5.108 Cambridge WWTP River and Outfall Modelling (Mike 3) (~~Appendix 20.2, App Doc Ref~~Application Document Reference 5.4.20.5) assesses velocities and mixing of the effluent as it enters the River Cam. The assessment demonstrates that the tested new outfall layout gives a good performance in terms of location/alignment on the river and flow spreading for each flow case. The outfall jet gets turned by the river flow and does not impact directly on the opposite bank. Velocities in the outfall plume are high close to the outfall but quickly reduce and are not exceptional compared to fluvial flood flows in the river. Therefore, given there is an apron in front of the outfall, there is no cause for concern from these model results that the new

outfall would lead to erosion in the river. There is good energy dissipation and flow spreading in the vicinity of the outfall. The effluent quickly mixes in with the ambient river flow. The new outfall alignment appears to give better initial mixing and less flow disturbance compared to the existing outfall. As above, the new outfall appears to offer improved performance compared to the existing outfall despite higher storm flows being considered. The effluent plume quickly mixes with the river flow for all the cases tested.

6.5.109 CFD modelling of Outfall (~~Appendix 20.7, App Doc Ref~~Application Document Reference 5.4.20.7) demonstrates that except in the immediate vicinity of the outfall (where scour protection is intended) the velocities at the river bed are well below 1.0m/s and excessive scour is not expected; this applies to all three flow cases presented in the study. The flows from the FE outfall compartment indicate velocities of approximately 0.5m/s or less in the vicinity of the riverbanks, and this is considered to present a low risk to both the protected banks and natural (vegetated) riverbanks.

6.5.110 The fluvial model (~~Appendix 20.5, App Doc Ref~~Application document reference 5.4.20.5) demonstrates no appreciable change in water levels as a result of the relocated outfall and changes to effluent volumes. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the

Proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the Proposed WWTP.

6.5.111 The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. Therefore, the operation phase is not anticipated to lead to changes in water quantity that would lead to a decline in the quality or status of the habitats or distribution and abundance of feature(s) of interest and no secondary mitigation measures are proposed.

7 In combination assessment

7.1.1 Under the Habitats Regulations, it is a requirement to consider any other projects or plans that could present a significant effect on a designated site or feature when considered alone or in combination with the Proposed Development. Whilst there is no legal definition of what constitutes a plan or project for the purposes of the Habitats Regulations, Projects on the National Infrastructure's (PINS) Advice Note Ten (National Infrastructure Planning, 2022) advises that the following plans/projects should be taken into account:

- projects under consultation;
- permitted application(s) not yet implemented;
- submitted application(s) not yet determined;
- PINS programme of projects; and
- projects identified in the relevant development plan (and any emerging development plans – with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited and the degree of uncertainty which may be present.

7.1.2 Following a search using the above criteria, 20 projects were identified for consideration for in-combination effects in this HRA Report. The projects identified as having the potential to result in in-combination effects have been screened in or out with justifications provided in Table 7-1-.

7.1.3 The in-combination assessment does not go to individual site or qualifying feature level as for the Proposed WWTP, therefore, the conclusion for each Plan or Project identified in Table 7-1- is applicable to all sites and qualifying features addressed within the AA.

7.1.4 No offshore plans or projects have been identified as being relevant to the Proposed WWTP for the sites located downstream of it as the contribution to change from the resulting Proposed WWTP has been determined as 'not appreciable' with regard to these sites.

Table 7-1-: In combination assessment

Plan or Project	Description	Justification for screening decision
Planning application reference S/2075/18/OL	Up to 4500 dwellings, business, retail, community, education and leisure uses, Waterbeach New Town East; This proposal, as amended, seeks permission for development of up to 4,500 dwellings, business, retail, community, leisure and sports uses; new primary and secondary schools and sixth form centre; public open spaces including parks and ecological areas; points of access; associated drainage and other infrastructure, groundworks, landscaping and highway works. The proposal is part of the strategic allocation for a new town as set out in Policy SS/6 of the adopted South Cambridgeshire Local Plan 2018. The western half of the proposed new town was subject to a separate outline planning application by Urban and Civic (U&C) for up to 6,500 dwellings which was approved in September 2019. The cumulative total for the two separate proposals adds up to a development of up to 11,000 dwellings.	This development is currently in the Tier 1 - construction phase. The development proposals have been assessed as falling within the remit of the Town and Country Planning (Environmental Impact Assessment) (EIA) Regulations 2011 (as amended) (the EIA Regulations) because of the characteristics, location, and potential impacts of the Proposed Development. The EIA process ensures that any potentially significant effects of the development are considered and, where appropriate, mitigated by measures to prevent/avoid, reduce and where possible offset. The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a Water Quality Management Plan (WQMP), throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. ~~• changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ ~~• emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a Water Quality Management Plan (WQMP), throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development.

~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

Cambridge Waste Water Treatment Plant Relocation Project
Habitats Regulations Assessment Report

Plan or Project	Description	Justification for screening decision
Planning application reference S/0791/18/FL	Relocated railway station comprising platforms, pedestrian bridges, access route, cycle routes, Waterbeach New Town The application site is located to the northeast of the village of Waterbeach and extends to approximately 10ha. It comprises land broadly between Bannold Drove and the 'Fen Line' railway that links Cambridge and King's Lynn, as shown on the Site Location Plan. The site includes land along Cody Road, Bannold Drove and a corridor of land between these two roads, immediately to the north of Capper Road, in addition to land within the existing railway corridor itself. A narrow strip of land is also included on the eastern side of the railway line, running from Bannold Road in the south to the northern limits of the site.	~~Relocated railway station comprising platforms, pedestrian bridges, access route, cycle routes, Waterbeach New Town~~ ~~The application site is located to the northeast of the village of Waterbeach and extends to approximately 10ha. It comprises land broadly between Bannold Drove and the 'Fen Line' railway that links Cambridge and King's Lynn, as shown on the Site Location Plan. The site includes land along Cody Road, Bannold Drove and a corridor of~~

Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency.
It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.

Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.

The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.

Potential effects at the construction phase could include:

- changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;
- emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and
- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.

As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.

As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.

Potential effects at the operational phase may include:

- ~~emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~
- ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~

~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.~~

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Plan or Project	Description	Justification for screening decision	
		~~land between these two roads, immediately to the north of Capper Road, in addition to land within the existing railway corridor itself. A narrow strip of land is also included on the eastern side of the railway line, running from Bannold Road in the south to the northern limits of the site.~~	
		• emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.	
Planning application reference S/0559/17/OL	Up to 6500 dwellings, business, retail, community, leisure, education and sports use, Waterbeach New Town This proposal, as amended, seeks permission for development of up to 6,500 dwellings, business, retail, community, leisure and sports uses; new primary and secondary schools and sixth form centre; public open spaces including parks and ecological areas; points of access; associated drainage and other infrastructure, groundworks, landscaping and highway works. The proposal is part of the strategic allocation for a new town as set out in Policy SS/6 of the adopted South Cambridgeshire Local Plan 2018. The western half of the proposed new town was subject to a separate outline planning application by Urban and Civic (U&C) for up to 4,500 dwellings which was approved in September 2019. The cumulative total for the two separate proposals adds up to a development of up to 11,000 dwellings.	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ ~~• changes in ground and surface water quality arising from~~	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include:	

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~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

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~~unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run-off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~

- ~~emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition— specifically, from~~

Plan or Project	Description	Justification for screening decision
		~~construction traffic; and~~
		air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants~~.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~ • ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants~~; and • changes in final effluent quality discharged to the River Cam from the Proposed Development.

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		Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
~~Planning application reference S/2682/13/OL~~	~~Up to 1300 dwellings, school, food store, community and open spaces, Marleigh.~~ ~~This site is part of the wider development known as 'Wing' and forms part of the wider Cambridge East development as covered by the Cambridge East Area Action Plan (CEAAP) adopted in 2008. Outline planning permissions were granted for the Wing development for up to 1,300 dwellings and associated infrastructure in November 2016; S/2682/13/OL South Cambridgeshire District Council (SCDC) and 13/1837/OUT, Cambridge City Council. The outline applications required Environmental Impact Assessment (EIA). The resulting Reserved Matters application for Phase 1 of the Wing masterplan (S/1004/18/RM and 18/0459/REM) were granted in September 2018 at the Joint Development Control Committee.~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ ~~• changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ ~~• emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in~~
Planning application reference S/2682/13/OL	Up to 1300 dwellings, school, food store, community and open spaces, Marleigh. This site is part of the wider development known as 'Wing' and forms part of the wider Cambridge East development as covered by the Cambridge East Area Action Plan (CEAAP) adopted in 2008. Outline planning permissions were granted for the Wing development for up to 1,300 dwellings and associated infrastructure in November 2016; S/2682/13/OL South Cambridgeshire District Council (SCDC) and 13/1837/OUT, Cambridge City Council. The outline applications required Environmental Impact Assessment (EIA). The resulting Reserved Matters application for Phase 1 of the Wing masterplan (S/1004/18/RM and 18/0459/REM) were granted in September 2018 at the Joint Development Control Committee.	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include:

Plan or Project	Description	Justification for screening decision
		~~groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be~~

~~subject to an environmental permit from the Environment Agency which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~

~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~

~~Potential effects at the operational phase may include:~~

- ~~emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic;~~
- ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and~~
- ~~changes in final effluent quality discharged to the River Cam from the Proposed Development.~~

~~Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.~~

~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.~~

Plan or Project	Description	Justification for screening decision
Planning application	Outline application for up to 1200 dwellings, retail, reference 18/0481/OUT education and community facilities on land north of Cherry Hinton, Cambridge.	• emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.

The start date for construction of this project has not yet been confirmed, however, it can be

~~reference land north of Cherry Hinton, Cambridge.~~ assumed that there will be potential for construction and operational impacts during both of

~~18/0481/OUT~~ these phases.

Potential effects at the construction phase may include:

- changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;
- emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and
- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.

As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process

As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.

Potential effects at the operational phase may include:

- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and
- changes in final effluent quality discharged to the River Cam from the Proposed Development.

Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements.

Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the proposed development in combination with this project.

Planning application reference 20/05396/FUL	Full application for erection of four commercial mid-tech buildings comprising Use Class E (commercial, business and service) to provide flexible office, research and development and light industrial uses, and Use Class B8 (storage and distribution) limited to a maximum of 20% GEFA; together with car parking, cycle parking, landscaping, substation and associated infrastructure (following demolition of the existing buildings). Trinity Hall Farm Industrial Estate, Nuffield Road, Cambridge, CB4 1TG	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • Changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • Emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • Air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from

Plan or Project	Description	Justification for screening decision
~~Planning application reference 20/05396/FUL~~	~~Full application for erection of four commercial mid-tech buildings comprising Use Class E (commercial, business and service) to provide flexible office, research and development and light industrial uses, and Use Class B8 (storage and distribution) limited to a maximum of 20% GEFA; together with car parking, cycle parking, landscaping, substation and associated infrastructure (following demolition of the existing buildings). Trinity Hall Farm Industrial Estate, Nuffield Road, Cambridge, CB4 1TG~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ ~~• Changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water run off for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ ~~• Emissions resulting in air borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• Air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~
Planning application reference S/4629/18/FL ~~reference~~ S/4629/18/FL	Hybrid Planning Application comprising in Detail the demolition of the gym, Trinity Centre and Innovation Centre and the construction of hotel with gym, restaurant, café and business suite; and a building comprising multi-storey car park and three storey commercial floorspace (B1 floorspace to the first and second floor; flexible accommodation to the ground floor (A1, A2, A3, A4, A5, B1, D1 and/or D2)) along with associated access, infrastructure and landscaping, and the change of use of the Trinity Centre to B1 as part of a phased development; in Outline the construction of a building up to seven stories to provide B1floorspace, with all matters reserved. 24, Cambridge Science Park, Milton, Cambridge, Cambridgeshire, CB4 0FN	

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		The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
Planning application reference 20/04010/FUL	One and two storey building containing offices, custody suite and associated facilities. Land South West Of Milton Park And Ride Butt Lane Milton Cambridgeshire.	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and

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		Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
Planning application reference 20/03523/FUL	Erection of 5 storey and 6 storey building for commercial/business use, transport hub and carpark with demolition of existing building. St Johns Innovation Park, Cambridge.	• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project. The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment. • emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.

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		Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
~~Planning application reference 20/04010/FUL~~	~~One and two storey building containing offices, custody suite and associated facilities. Land South West Of Milton Park And Ride Butt Lane Milton Cambridgeshire.~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ ~~• changes in ground and surface water quality arising from unplanned events including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ ~~• emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and~~ ~~• changes in final effluent quality discharged to the River Cam from the Proposed Development.~~ ~~Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that~~

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			~~environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.~~

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~~Planning application reference 20/03523/FUL~~	~~Erection of 5-storey and 6-storey building for commercial/business use, transport hub and carpark with demolition of existing building. St Johns Innovation Park, Cambridge.~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ ~~• changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment.~~ ~~• emissions resulting in air borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and~~ ~~• changes in final effluent quality discharged to the River Cam from the Proposed Development.~~ ~~Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.~~ ~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.~~

Plan or Project	Description	Justification for screening decision
Planning application reference 20/03524/FUL	Upgrade to existing access roads and Cowley Road (as part of a wider proposal for the erection of a 5 storey building and a 6 storey building for commercial/business purposes, erection of a transport hub, gymnasium, surface parking, landscaping and ~~associated~~	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include:

~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

Plan or Project	Description	Justification for screening decision
	associated infrastructure including demolition of the existing building (St John's House) and associated structures).	~~Potential effects at the construction phase may include:~~ • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
Planning application reference 20/03802/FUL	Residential development of 75 dwellings along with access, car parking, landscaping and all associated infrastructure | Development Parcel L2 Topper Street Orchard Park, Cambridge.	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the

~~Planning application reference 20/03802/FUL~~ ~~Residential development of 75 dwellings along with access, car parking, landscaping and all associated infrastructure | Development Parcel L2 Topper Street Orchard Park, Cambridge.~~ ~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~

~~Potential effects at the construction phase may include:~~

~~• changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~
~~• emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~
~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~

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~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

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Plan or Project	Description	Justification for screening decision
		Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. **Potential effects at the operational phase may include:** • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
~~Planning application reference S/4191/19/FL~~	~~Erection of new private rented residential block comprising a total of eighty studio one and two bedroom apartments~~ ~~Neal Drive, Orchard Park, Cambridge.~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ • ~~changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ • ~~emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition—specifically, from construction traffic; and~~ • ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction~~

Plan or Project	Description	~~Plan or Project~~	Justification for screening decision	~~Description~~	~~Justification for screening decision~~
~~phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and~~ ~~• changes in final effluent quality discharged to the River Cam from the Proposed Development.~~ ~~Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements.~~ ~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.~~				
Planning application reference 18/1782/FUL	Four storey office development (B1 use) with associated car and bicycle parking, plant room, sub station and landscaping. William James House 50 - 55 Cowley Road Cambridge.				

~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

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Plan or Project	Description	Justification for screening decision
Planning application reference S/4191/19/FL	Erection of new private rented residential block comprising a total of eighty studio one and two bedroom apartments Neal Drive, Orchard Park, Cambridge.	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
confirmed, however, it can be ~~reference – sub station and landscaping. William James House 50 - 55 Cowley Road Cambridge.~~ assumed that there will be potential for construction and operational impacts during both of ~~18/1782/FUL~~ these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development.	

~~Plan or Project~~ Plan or Project	~~Description~~ Description	~~Justification for screening~~ Justification for screening decision	~~decision~~
		Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.	
~~Planning application reference S/1136/18/FL~~	~~Erection of building totalling 5120sqm gross internal floorspace (including plant at ground and first floors) for a mix of class B1 (business) and class B2 (general industrial) and class B8 (storage and distribution) uses demolition of existing ancillary outbuildings and erection of replacement outbuildings for a mix of class B1 (business) class B8 (storage and distribution) totalling 293sqm gross internal area and open storage alterations to existing car park service road and vehicular access to the public highway introduction of new landscaping and associated engineering works 191 Cambridge Science Park Milton Cambridge including bund and external lighting.~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~ • ~~changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ • ~~emissions resulting in air borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ • ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ ~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~ ~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~ ~~Potential effects at the operational phase may include:~~	

~~Plan or Project~~	~~Description~~	~~Justification for screening decision~~

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Plan or Project	Description	Justification for screening decision
Planning application reference S/1136/18/FL	Erection of building totalling 5120sqm gross internal floorspace (including plant at ground and first floors) for a mix of class B1 (business) and class B2 (general industrial) and class B8 (storage and distribution) uses demolition of existing ancillary outbuildings and erection of replacement outbuildings for a mix of class B1 (business) class B8 (storage and distribution) totalling 293sqm gross internal area and open storage alterations to existing car park service road and vehicular access to the public highway introduction of new landscaping and associated engineering works 191 Cambridge Science Park Milton Cambridge including bund and external lighting.	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
South Cambridgeshire ~~Local Plan~~	The area, shown on the Policies Map, and illustrated in ~~Figure 6, is allocated for high quality mixed use development, primarily for employment within Use Classes B1, B2 and B8 as well Policy SS/4 as a range of supporting uses, commercial, retail, leisure and residential uses (subject to acceptable environmental conditions).~~ The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and Local Plan Figure 6, is allocated for high quality mixed-use operational impacts during both of these phases. Policy SS/4 development, primarily for employment within Use Potential effects at the construction phase may include: ~~• changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~ ~~• emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and~~ ~~• air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.~~ Classes B1, B2 and B8 as well ~~Policy SS/4~~ as a range of supporting uses, commercial, retail, leisure and residential uses (subject to acceptable environmental conditions).	• changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;

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- emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and
- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants.

As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.

As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.

Potential effects at the operational phase may include:

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- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and
- changes in final effluent quality discharged to the River Cam from the Proposed Development.

~~Plan or Project~~	~~Description~~	Justification for screening decision	~~Justification for screening decision~~
		Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.	
Cambridge City Local Plan	Relocated railway station comprising platforms pedestrian bridges access road pedestrian and cycle routes car and cycle parking with other associated facilities and infrastructure Land between Cody Road and Railway North of Waterbeach	The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including, spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.	
Cambridge East AAP	Anew urban quarter of Cambridge of approximately 10,000 to 12,000 dwellings with appropriate employment, services, facilities and infrastructure ~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.~~ The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.	Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.	

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		As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the Proposed Development in combination with this project.
~~Emerging North East Cambridge AAP (Policy 1)~~	~~The Councils will work to secure the comprehensive regeneration of North East Cambridge in particular the creation of a new high-quality mixed-use city district, providing approximately 8,350 new homes, 15,000 new jobs, and new physical, social and environmental~~	~~The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases.~~ ~~Potential effects at the construction phase may include:~~

Plan or Project	Description	~~Plan or Project~~	~~Description~~	Justification for screening decision	~~Justification for screening decision~~
Emerging North East Cambridge AAP (Policy 1)	The Councils will work to secure the comprehensive regeneration of North East Cambridge in particular the creation of a new high quality mixed-use city district, providing approximately 8,350 new homes, 15,000 new jobs, and new physical, social and environmental infrastructure that meets the needs of new and existing residents and workers as well as delivering tangible benefits for surrounding communities.			The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process. As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above. Potential effects at the operational phase may include: • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and • changes in final effluent quality discharged to the River Cam from the Proposed Development. Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the River Cam water body for consented quality elements. Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the proposed development in combination with the Proposed Development.	
Emerging Greater Cambridge Local Plan Policy S/NEC	Once developed in full, which will extend beyond the Local Plan period of 2041, North East Cambridge is anticipated to deliver 8,350 new homes, 15,000 additional jobs as well as a wide range of necessary infrastructure to support the development including new schools, community and cultural facilities, open spaces as well as enhanced and new walking and cycling connections into and through the Area Action Plan area. This amount of development is predicated on the relocation of the existing Waste Water Treatment Works, a process being led by Anglian Water. It is also reliant on the successful implementation of the North East Cambridge Trip Budget, which has been calculated ~~to ensure that there are no additional vehicle trips on Milton Road at peak times (from 2017 levels) and subsequently not result in queuing on the A14 at Milton Interchange (Junction 33).~~			The start date for construction of this project has not yet been confirmed, however, it can be assumed that there will be potential for construction and operational impacts during both of these phases. Potential effects at the construction phase may include: • changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment; • emissions resulting in air-borne pollutants/air pollution: risk of atmospheric nitrogen deposition – specifically, from construction traffic; and • air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from	

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~~infrastructure that meets the needs of new and existing residents and workers as well as delivering tangible benefits for surrounding communities~~to ensure that there are no additional vehicle trips on Milton Road at peak times (from 2017 levels) and subsequently not result in queuing on the A14 at Milton Interchange (Junction 33).

- ~~changes in ground and surface water quality arising from unplanned events, including spills or leaks from machinery operating close to waterways, deep excavations, surface water runoff for areas under construction, dewatering activities, and flood events washing substances into waterways which may include suspended sediment;~~
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- ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants. As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from~~ the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.

As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.

Potential effects at the operational phase may include:

- air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and
- changes in final effluent quality discharged to the River Cam from the Proposed Development.

Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the ~~River~~ Cam water body for consented quality elements.

Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the proposed development in combination with the Proposed Development.

Plan or Project	Description	~~Plan or Project~~	~~Description~~	Justification for screening decision	~~Justification for screening decision~~

~~As part of construction best practice, rigorous protection measures to prevent contamination will be used, such as a WQMP, throughout the entirety of the construction phase. The measures would be included in a CEMP and in the event of any accidental spills or leakages, or detection of significant contamination in groundwater, an immediate investigation and clean-up programme would be implemented. All works would also be subject to an environmental permit from the Environment Agency, which also includes the requirement to have in place management measures in relation to environmental risks identified through the application process.~~

~~As a result of the mitigation measures put in place, it is considered that any pollution spill would be minor in nature, temporary due to the clean-up effort that would arise and highly unlikely to occur due to the preventative measures listed above.~~

~~Potential effects at the operational phase may include:~~

- ~~air quality emissions from the operation of construction plant, vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants; and~~
- ~~changes in final effluent quality discharged to the River Cam from the Proposed Development.~~

~~Discharge limits for BOD, ammoniacal nitrogen as N, total phosphorus and TSS, will be agreed with the Environment Agency. It is assumed at this stage that the Environment Agency modelling will set discharge permit limits to follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements.~~

~~Assuming that standard best practice mitigation is adhered to for this project, in line with environmental permitting stipulations, it is concluded that it is unlikely that there will be significant adverse effect from the proposed development in combination with the Proposed Development.~~

8 Conclusions

8.1.1 Following completion of assessments to support Stage 2: Appropriate Assessment, it is considered that with adherence to the proposed mitigation, including regulatory requirements, the construction works associated with the Proposed Development and the operational activity associated with the Proposed WWTP will not have any AEOI of the designated sites and their features either alone or in-combination with other plans, policies or projects.

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References

CIEEM. (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, version 1.2.* Winchester: Chartered Institute of Ecology and Environmental Management. Retrieved from https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf

CWWTPR. (2021). *Hydrogeological Impact Assessment.* Mott Macdonald. Retrieved from https://cwwtpr.com/wp-content/uploads/2021/03/CWWTPR-Stage-4-Final-Site-SelectionHydrogeological-Impact-Assessment.pdf

Defra. (2021, Feb 24). *Habitats regulations assessments: protecting a European site*. Retrieved from How a competent authority must decide if a plan or project proposal that affects a European site can go ahead.: https://www.gov.uk/guidance/habitats-regulations-assessmentsprotecting-a-european-site

DEFRA. (2022). *Magic Maps*. Retrieved from https://magic.defra.gov.uk/magicmap.aspx

GOV.UK. (2012, December 18). *Improvement programme for England's Natura 2000 sites (IPENS)*. Retrieved from Corporate report: https://www.gov.uk/government/publications/improvement-programme-for-englandsnatura-2000-sites-ipens/improvement-programme-for-englands-natura-2000-sites-ipens

Highways England. (2019, Nov). *Standards for Highways.* Retrieved from DMRB LA 105 - Air quality: https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892ec1d5c7a28d90

IEMA. (2015, November). *Delivering Quality Development.* Retrieved from Institute of Environmental Management : https://www.iema.net/download-document/7014

JNCC. (n.d.). *Special Areas of Conservation*. Retrieved from https://sac.jncc.gov.uk/

Natural England. (n.d). *Designated Sites View*. Retrieved from https://designatedsites.naturalengland.org.uk/SiteSearch.aspx

Natural England. (n.d.). *Conservation objectives for European Sites: East of England*. Retrieved from http://publications.naturalengland.org.uk/category/6581547796791296

Ramsar. (n.d.). *Ramsar Sites Information Service*. Retrieved from https://rsis.ramsar.org/ris/752

UK Government. (2021, 09 6). *Environment Bill 2020.* Retrieved from Environment: https://www.gov.uk/government/publications/environment-bill-2020

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Appendices

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Appendix A: Integrity Matrices

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Document Control

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Contents

Abbreviations

Abbreviation	
AA	Appropriate Assessment
AEOI	Adverse Effects on Integrity of Site
BOD	Biochemical oxygen demand
CWWTPR	Cambridge Waste Water Treatment Plant Relocation
cSAC	candidate Special Area of Conservation
CEMP	Construction Environment Management Plan
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
ExA	Examining Authority
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest

LSE	Likely Significant Effect
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSER	No Significant Effects Report
NSIP	Nationally Significant Infrastructure Project
pSPA	potential Special Protection Area
Ramsar Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat, as amended in 1982 and 1987
SAC	Special Area for Conservation
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area

1 Introduction

1.1.1 Likely significant effects have been identified for the following sites:

- Devil's Dyke SAC;
- The Wash and North Norfolk Coast SAC;
- The Wash SPA;
- The Wash Ramsar site;
- Ouse Washes SAC;
- Ouse Washes SPA; and
- Ouse Washes Ramsar site.

1.1.2 These sites have been subject to further assessment in order to establish if the NSIP could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

1.1 Matrix Key

✓ = Adverse effect on integrity **cannot** be excluded

× = Adverse effect on integrity **can** be excluded

C = construction

O = operation

D = decommissioning


love every drop
anglianwater


love every drop
anglianwater

2 HRA Integrity Matrix 1: Devil's Dyke SAC

Name of European site and designation: Devil's Dyke SAC						
EU Code: UK0030037						
Distance to NSIP 8.97km						
European site features	**Adverse effect on integrity**					
Effect	Deposition of nitrogen			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*
6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (important orchid sites).	a ✕	b ✕		c ✕	d ✕	

Evidence supporting conclusions

2.1.1 During the construction phase of the Proposed Development there is a risk of increased gaseous and particulate emissions resulting in air-borne pollutants/air pollution with a risk of increased atmospheric nitrogen deposition on the habitats/species within Devil's Dyke SAC from construction traffic passing within 200m on the adjacent A14 and from the operation of construction plant within the works site. There will be requirement to put in place control measures as set out in the CoCP Part A and B to control pollutants in order to minimise the potential for and likely impacts of airborne pollutants on sensitive habitats. The impact during the construction phase is predicted to be of short-term duration, local spatial extent and intermittent in nature. During construction of the Proposed Development there will be additional vehicle movements on the public highway network. Where additional vehicle movements are more than 100 heavy duty vehicles and/or 500 light duty vehicles per day for more than six months, the Base, DoMinimum (no

Proposed Development) and Do-Construction (with construction of the Proposed Development) traffic scenarios have been modelled at relevant worst case receptor locations using ADMS-Roads 5 to predict concentrations of NOx concentrations,

nitrogen deposition and acid deposition at ecological designations. Overall, the Proposed Development's effect on air quality from construction vehicle movements on the public highway network is concluded to be not significant and no secondary mitigation measures are required. Taking into account the distance from the emissions source and the measures in place it is assessed that there would be a negligible change in air quality experience at the Habitat Site. As a result of this, it is not considered that the integrity of the site will be affected. The resulting temporary impact on air quality is therefore assessed as negligible. It is concluded that there will be **no adverse effect** on the integrity of the site. See *HRA report 6.56 - 5.5.15* and the *Environmental Statement, chapter 7, Air Quality* for full assessment and air quality modelling results.

2.1.2 Operation of the proposed WWTP will lead to additional vehicle movements along roads leading to the proposed WWTP. Although the operational traffic flows associated with the proposed WWTP are similar to those at the existing Cambridge WWTP, the traffic would be redistributed on local roads as the workforce and deliveries take new routes to the proposed WWTP. There would be no change to AADT from those associated with the existing Cambridge WWTP. During operation, Whessoe Valves may open in an emergency situation and vent biogas, containing part methane, part carbon dioxide and other trace gases, directly to air from the highest point of a pressurised tank or container. The methane component of the biogas is much less dense than air and would rise and disperse quickly. Methane and carbon dioxide exist in low levels in the natural environment and are generally considered nontoxic gases at the levels of exposure that could possibly occur from the operation of a Whessoe valve. Whessoe valves are not expected to cause a new significant effect and are an intrinsic part of the proposed WWTP's operational safety. The operation of the proposed WWTP will produce biogas. Biogas would be combusted within one of two boilers (one duty and one standby) to generate heat for the process. Additional biogas will either be exported to the national gas network following appropriate treatment, this is the preferred option, or combusted within a Combined Heat and Power (CHP) plant if exporting to the national gas network becomes infeasible or exported to the national gas network following appropriate treatment. There are no emissions to air from exporting the biogas to the national gas network and therefore this option has not been considered further in this chapter. This assessment has therefore conservatively considered emissions from the combined operation of boilers and CHPs. Overall, the Proposed Development's effect on air quality from the operational energy plant at the proposed WWTP is concluded to be not significant and no secondary mitigation are required. Both energy plant and road traffic will have operational impacts on air quality. Therefore, the impact of both sources has been combined to demonstrate the predicted inter-related effect on air quality at modelled receptor

locations. The outputs of the ADMS 5 and ADMS Roads models at sensitive receptors were combined to demonstrate the overall combined effects. The combined operation of energy plant and road vehicles during operation has a 'negligible' effect on air quality is therefore not significant and no secondary mitigation or enhancement measures are required. It is concluded that there will be **no adverse effect** on the integrity of the site. See *Environmental Statement, chapter 7, Air Quality* for

full assessment and air quality modelling results. See *HRA report 6.5.16 - 6.5.26* and the *Environmental Statement, chapter 7, Air Quality* for full assessment and air quality modelling results.

2.1.3 During construction of the Proposed Development, no in-combination effects are predicted that would cause an adverse effect on the integrity of this habitats site. It is concluded that, with the appropriate mitigation, there will be **no adverse effect** on the integrity of the site.

2.1.4 During operation, no in-combination effects are predicted that would cause an adverse effect on the integrity of this habitats site. It is concluded that, with the appropriate mitigation, there will be **no significant effect** on the integrity of the site.

3 HRA Integrity Matrix 2: The Wash and North Norfolk Coast SAC

Name of European site and designation: The Wash and North Norfolk Coast SAC										
EU Code: UK17075										
Distance to NSIP 70.3km										
European site features	**Adverse effect on integrity**									
Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects			
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	~~*O*~~*D*	~~*D*~~
1110 - Sandbanks which are slightly covered by sea water all the time	a✕	b✕		c✕	d✕		~~e~~✕ e	f✕	~~f✕~~	
1140 - Mudflats and sandflats not covered by seawater at low tide	a✕	b✕		c✕	d✕		e✕	f✕	~~f✕~~	
1160 - Large shallow inlets and bays	a✕	b✕		c✕	d✕		e✕	f✕	~~f✕~~	
1170 - Reefs	a✕	b✕		c✕	d✕		e✕	f✕	~~f✕~~	
1310 - Salicornia and other annuals colonizing mud and sand	a✕	b✕		c✕	d✕		e✕	f✕	~~f✕~~	
1330 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	a✕	b✕		c✕	d✕		e✕	f✕	~~f✕~~	

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1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticose*)	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	~~f ✕~~
1150 - Coastal lagoons	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	~~f ✕~~
1365 - Harbour seal	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	~~f ✕~~

Name of European site and designation: The Wash and North Norfolk Coast SAC										
EU Code: UK17075										
Distance to NSIP 70.3km										
European site features	**Adverse effect on integrity**									
Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects			
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	~~*O*~~ *D*	~~*D*~~
1355 - Otter	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	~~f ✕~~	

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Evidence supporting conclusions

3.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The Wash and North Norfolk Coast SAC is located approximately 70km downstream of the proposed WWTP, and a considerable distance from the 10km EZoI for which impacts on water quality have been determined as

potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites within the Wash which are hydrologically connected to the Proposed Development, however, a *de minimis* effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring.

3.1.2 With regard to the advice provided in Advice Note 10, ten features of interest were identified at the Habitats Site (Natural England, 2019) . The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

3.1.3 —1110 - Sandbanks which are slightly covered by sea water all the time

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.4 —1140 - Mudflats and sandflats not covered by seawater at low tide

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.5 —1160 - Large shallow inlets and bays

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.6 —1170 – Reefs

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events

- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.7 —1310 - *Salicornia* and other annuals colonizing mud and sand

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.8 —1330 - Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.9 —1420 - Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticose*)

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)

- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.10 1150 - Coastal lagoons

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

3.1.11 1365 - Harbour seal

- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.

3.1.12 1355 – Otter

- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.

3.1.13 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence is provided in The HRA Report, Section 6, 6.5.27 - 6.5.46, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

3.1.14 During the operational phase of the Proposed Development, **absence of effect** on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be **no adverse effect** on the integrity of the site.

3.1.15 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.47 - 6.5.61 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

3.1.16 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, four features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

3.1.17 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point permit conditions for the

new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site.

3.1.18 With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of

Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam.

3.1.19 With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. The fluvial model (Application document reference 5.4.20.5) demonstrates no appreciable change in water levels as a result of the relocated outfall and changes to effluent volumes. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

3.1.20 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be

applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

3.1.21 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is provided in

the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

4 HRA Integrity Matrix 3: The Wash SPA

Name of European site and designation: The Wash SPA									
EU Code: UK9008021									
Distance to NSIP 70.3km									
European site features	**Adverse effect on integrity**								
Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Bar-tailed godwit, *Limosa lapponica* - A157, nb	a✕	b✕		c✕	d✕		~~e~~✕ e	f✕	
Bewick's swan, *Cygnus columbianus bewickii* - A037, nb	~~a~~✕ a	b✕		c✕	d✕		~~e~~✕	f✕	
Black-tailed godwit, *Limosa limosa islandica* - A616, nb	~~a~~✕ a	b✕		c✕	d✕		~~e~~✕	f✕	
Common scoter, *Melanitta nigra* - A065, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Common tern, *Sterna hirundo* - A193, b	a✕	b✕		c✕	d✕		e✕	f✕	
Curlew, *Numenius arquata* - A160, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Dark-bellied Brent goose, *Branta bernicla bernicla* - A675, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Dunlin, *Calidris alpina alpina* - A672, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Name of European site and designation: The Wash SPA									
EU Code: UK9008021									
Distance to NSIP 70.3km									
European site features	**Adverse effect on integrity**								
Effect	Alterations to wa :er quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Gadwall, *Anas strepera* - A051, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Goldeneye, *Bucephala clangula* - A067, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Grey plover, *Pluvialis squatarola* - A141, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Knot, *Calidris canutus* - A143, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Little tern, *Sterna albifrons* - A195, b	a✕	b✕		c✕	d✕		e✕	f✕	
Oystercatcher, *Haematopus ostralegus* - A130, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Pink-footed goose, *Anser brachyrhynchus* - A040, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Pintail, *Anas acuta* - A054, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Redshank, *Tringa totanus* - A162, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Name of European site and designation: The Wash SPA									
EU Code: UK9008021									
Distance to NSIP 70.3km									
European site features	**Adverse effect on integrity**								
Effect	Alterations to wa :er quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Sanderling, *Calidris alba* - A144, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Shelduck, *Tadorna tadorna* - A048, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Turnstone, *Arenaria interpres* - A169, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Waterbird assemblage	a✕	b✕		c✕	d✕		e✕	f✕	
Wigeon, *Anas penelope* - A050, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Evidence supporting conclusions

4.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The Wash SPA is located approximately 70km downstream of the proposed WWTP, and a considerable distance from the 10km EZoI for which impacts on water quality have been determined as potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites within the Wash which are hydrologically connected to the Proposed Development, however,

a de minimis effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring.

4.1.2 With regard to the advice provided in Advice Note 10, ten features of interest were identified at the Habitats Site (Natural England, 2019) . The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

4.1.3 It should be noted that supplementary advice for each species of bird identified as having potential adverse effects from the Proposed Development do not have individual supplementary advice notes available, therefore the following list of potential effects applies to all species listed in the matrix table.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events

- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

4.1.4 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence is provided in The HRA Report, Section 6, 6.5.27 - 6.5.46, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

4.1.5 During the operational phase of the Proposed Development, **absence of effect** on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be **no adverse effect** on the integrity of the site.

4.1.6 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.47 - 6.5.61 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

4.1.7 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

4.1.8 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken

to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC

under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP.

4.1.9 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to

avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

4.1.10 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

5 HRA Integrity Matrix 4: The Wash Ramsar site

Name of European site and designation: The Wash Ramsar site	
EU Code: UK11072	
Distance to NSIP 70.3km	
European site features	**Adverse effect on integrity**

Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar Criterion 1 – The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.	a✕	b✕		c✕	d✕		e✕	f✕	
Ramsar Criterion 3 – the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters.	~~a~~✕ a	b✕		c✕	d✕		e✕	f✕	
Ramsar Criterion 5 – a range of species with peak counts in spring/autumn, and with peak counts in winter.	~~a~~✕ a	b✕		c✕	d✕		e✕	f✕	
Ramsar criterion 6 - Species with peak counts in spring/autumn	a✕	b✕		c✕	d✕		e✕	f✕	
Ramsar criterion 6 - Species with peak counts in winter	a✕	b✕		c✕	d✕		e✕	f✕	
Ramsar criterion 6 for future consideration - Species with peak counts in spring/autumn	a✕	b✕		c✕	d✕		e✕	f✕	
Name of European site and designation: The Wash Ramsar site									
EU Code: UK11072									
Distance to NSIP 70.3km									
European site features	**Adverse effect on integrity**								

Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 6 for future consideration - Species with peak counts in winter	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	

Evidence supporting conclusions

5.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The Wash Ramsar is located approximately 70km downstream of the proposed WWTP, and a considerable distance from the 10km EZoI for which impacts on water quality have been determined as potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites within the Wash which are hydrologically connected to the Proposed Development, however, a *de minimis* effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring.

5.1.2 With regard to the advice provided in Advice Note 10, ten features of interest were identified at the Habitats Site (Natural England, 2019) . The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

5.1.3 Ramsar Criterion 1 – The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events

- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

5.1.4 Ramsar Criterion 3 – the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

5.1.5 Ramsar Criterion 5 – a range of species with peak counts in spring/autumn, and with peak counts in winter.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

5.1.6 Ramsar criterion 6 - Species with peak counts in spring/autumn

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events

- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

5.1.7 Ramsar criterion 6 - Species with peak counts in winter

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

5.1.8 Ramsar criterion 6 for future consideration - Species with peak counts in spring/autumn

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

5.1.9 Ramsar criterion 6 for future consideration - Species with peak counts in winter

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

5.1.10 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence is provided in The HRA Report, Section 6, 6.5.27 - 6.5.46, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

5.1.11 During the operational phase of the Proposed Development, **absence of effect** on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be **no adverse effect** on the integrity of the site.

5.1.12 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.47 - 6.5.61 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

5.1.13 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

5.1.14 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of Cambridge WRC,

there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC

under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP.

5.1.15 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including

monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

5.1.16 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

6 HRA Integrity Matrix 5: Ouse Washes SAC

Name of European site and designation: Ouse Washes SAC	
EU Code: UK0013011	
Distance to NSIP 14.1km	
European site features	**Adverse effect on integrity**

Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Annex II species – Spined loach (*Cobitis taenia*)	a✕	b✕		c✕	d✕		e✕	f✕	

Evidence supporting conclusions

6.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The site is located 14.1km downstream of the proposed WWTP, a distance from the 10km EZoI for which impacts on water quality have been determined as potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites which are hydrologically connected to the Proposed Development. However, a de minimis effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring. With regard to the advice provided in Advice Note 10, four features of interest were identified at the Site (Natural England, 2018). With regard to the advice provided in Advice Note 10 (The Planning Inspectorate, 2012), four features of interest were identified at the Site. The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice (England, Ouse Washes SAC Conservation Objectives Supplmentary Advice, 2015; England, 2014), were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site. 6.1.2 Spined loach (*Cobitis taenia*)

- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Toxic contamination – water pollution / changes to water quality (degradation)

- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

6.1.3 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence is provided in The HRA Report, Section 6, 6.62 - 6.5.80, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

6.1.4 During the operational phase of the Proposed Development, absence of effect on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be no adverse effect on the integrity of the site.

6.1.5 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.81 - 6.5.94 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

6.1.6 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'.

Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate

concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP.

6.1.7 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

6.1.8 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result

of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

7 HRA Integrity Matrix 6: Ouse Washes SPA

Name of European site and designation: Ouse Washes SPA									
EU Code: UK9008041									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity**								
Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*

Breeding bird assemblage	a✕	b✕		c✕	d✕		e✕	f✕	
Waterbird assemblage	a✕	b✕		c✕	d✕		e✕	f✕	
Bewick's swan, Cygnus columbianus bewickii - A037, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Gadwall, Anas strepera - A051, b	a✕	b✕		c✕	d✕		e✕	f✕	
Garganey, Anas querquedula - A055, b	a✕	b✕		c✕	d✕		e✕	f✕	
Hen harrier, Circus cyaneus - A082, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Name of European site and designation: Ouse Washes SPA									
EU Code: UK9008041									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity**								
Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*

Mallard, Anas platyrhynchos - A705, b	a✕	b✕		c✕	d✕		e✕	f✕	
Pintail, Anas acuta - A054, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Ruff, Philomachus pugnax - A151, b	a✕	b✕		c✕	d✕		e✕	f✕	
Shoveler, Anas clypeata - A056, b	a✕	b✕		c✕	d✕		e✕	f✕	
Teal, Anas crecca - A704, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Name of European site and designation: Ouse Washes SPA									
EU Code: UK9008041									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity**								
Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Black-tailed godwit, Limosa limosa limosa - A614-A, b	a✕	b✕		c✕	d✕		e✕	f✕	
Whooper swan, Cygnus cygnus - A038-B, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Wigeon, Anas penelope - A050, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Name of European site and designation: Ouse Washes SPA									
EU Code: UK9008041									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity**								
Effect	*Alterations to water quality due to pollution events*			Alterations to water chemistry due to changes in water quality and quantity			*In combination effects*		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Black-tailed godwit, Limosa limosa limosa - A614-A, b	a✕	b✕		c✕	d✕		e✕	f✕	
Whooper swan, Cygnus cygnus - A038-B, nb	a✕	b✕		c✕	d✕		e✕	f✕	
Wigeon, Anas penelope - A050, nb	a✕	b✕		c✕	d✕		e✕	f✕	

Evidence supporting conclusions

7.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The Site is located 14.1km downstream of the proposed WWTP, a distance from the 10km

EZoI for which impacts on water quality have been determined as potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites

which are hydrologically connected to the Proposed Development, however, a de minimis effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring. With regard to the advice provided in Advice Note 10 (The Planning Inspectorate, 2012), four features of interest were identified at the Site. The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature (England, 2019; England, 2019) were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

7.1.2 It should be noted that supplementary advice for each species of bird identified as having potential adverse effects from the Proposed Development do not have individual supplementary advice notes available, therefore the following list of potential effects applies to all species listed in the matrix table.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

7.1.3 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence

is provided in The HRA Report, Section 6, 6.5.62 - 6.5.80, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

7.1.4 During the operational phase of the Proposed Development, **absence of effect** on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be **no adverse effect** on the integrity of the site.

7.1.5 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.81 - 6.5.94 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

7.1.6 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved

localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point

permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site.

7.1.7 With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a 19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam.

7.1.8 With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP.

7.1.9 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

7.1.10 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is

provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

8 HRA Integrity Matrix 7: Ouse Washes Ramsar site

Name of European site and designation: Ouse Washes Ramsar site									
EU Code: UK11051									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity**								
Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	
Ramsar Criterion 2: The site supports several nationally scarce plants. Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species large darter dragonfly *Libellula fulva* and the rifle beetle *Oulimnius major*. The site also supports a diverse assemblage of	~~a~~ ✕ a	b ✕		c ✕	d ✕		e ✕	f ✕	

Deleted Cells

nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.									
Ramsar criterion 5: Assemblages of international importance: Species with peak counts in winter: 59133 waterfowl (5 year peak mean 1998/99-2002/2003)	~~a~~ ✕ a	b ✕		c ✕	d ✕		e ✕	f ✕	
Name of European site and designation: Ouse Washes Ramsar site									
EU Code: UK11051									
Distance to NSIP 14.1km									
European site features	**Adverse effect on integrity** ~~y~~								
Effect	Alterations to water quality due to pollution events			Alterations to water chemistry due to changes in water quality and quantity			In combination effects		
Stage of Development	*C*	*O*	*D*	*C*	*O*	*D*	*C*	*O*	*D*
Ramsar criterion 6: Species/populations identified subsequent to designation for possible future consideration.	a ✕	b ✕		c ✕	d ✕		e ✕	f ✕	

Evidence supporting conclusions

8.1.1 During the construction phase, the Proposed Development has the potential to alter water quality due to toxic and non-toxic pollution events and this is likely to result in potential adverse effects on the habitats and species for which the site is designated and the overall integrity of the Habitats Site. The Site is located 14.1km downstream of the proposed WWTP, a distance from the 10km EZoI for which impacts on water quality have been determined as potentially having a negative impact, however, the site is hydrologically connected with the River Cam. A precautionary approach has been taken within this assessment to include those sites which are hydrologically connected to the Proposed Development, however, a *de minimis* effect is anticipated due to the distance from the works, improvements to water quality from the new plant and the mitigation in place to reduce the likelihood of significant effects occurring. With regard to the advice provided in Advice Note 10, four Ramsar criteria were identified at the Site (Ramsar, 1999). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated site.

8.1.2 Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.

- Physical damage – habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Introduction or spread of invasive non-native species

8.1.3 Ramsar criterion 2: The site supports several nationally scarce plants. Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species large darter dragonfly *Libellula fulva* and the rifle beetle *Oulimnius major*. The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)

- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

8.1.4 Ramsar criterion 5: Assemblages of international importance: Species with peak counts in winter: 59133 waterfowl (5 year peak mean 1998/99-2002/2003)

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

8.1.5 Ramsar criterion 6: Species/populations identified subsequent to designation for possible future consideration.

- Physical damage – supporting habitat degradation as a result of water quality changes in case of pollution events
- Toxic contamination – water pollution / changes to water quality (degradation)
- Non-toxic contamination – changes in turbidity leading to changes in sediment loading and silt deposition which may lead to smothering of functionally linked supporting habitats.
- Biological disturbance – changes in habitat availability and potential for populations to be displaced from current areas.
- Introduction or spread of invasive non-native species

8.1.6 During the construction phase, there will be a requirement to implement the CoCP Part A and B and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. The site is downstream of the location of works to install the outfall which would be subject to the CoCP as well as separate consent to complete the work. The controls coupled with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. Evidence is provided in The HRA Report, Section 6, 6.5.62 - 6.5.80, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features, either alone or in-combination with other plans or projects.

8.1.7 During the operational phase of the Proposed Development, **absence of effect** on the integrity of the site and its qualifying species has been identified as there is no predicted pathway to changes in water quality due to pollution events from spillages of potentially contaminating materials which may give rise to contamination of surface water species associated with the Habitats Site. The proposed WWTP includes a segregated surface water drainage system as well as operational controls to manage any spills or leaks. The EPR will require the operator to develop and environmental management system to include plans and procedures in relation to pollution prevention and spill response. The completion of a ConSim model also demonstrates minimal risk to hydrologically linked areas as a result of a spill or leak from the proposed WWTP. The site is over 50km downstream of the location the outfall whereby discharges to the River Cam would be subject to regulatory consent obtained from the Environment Agency. The controls coupled

with the distance from the site would mean that there would be negligible changes to water quality within the River Cam and therefore no appreciable effect on the Habitats Site. It is concluded that there will be **no adverse effect** on the integrity of the site.

8.1.8 Changes in water chemistry have been addressed in the '*operational*' section of the assessment and are evidenced in HRA Report, Section 6, 6.5.81 - 6.5.94 to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

8.1.9 During the operation phase, the Proposed Development has the potential to alter water chemistry as a result of final effluent discharge and this is likely to result in potential adverse effects on the integrity of habitats and species for which the site is designated. With regard to the advice provided in Advice Note 10, features of interest were identified at Habitats Site (Natural England, 2019). The significance of any effect has been considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire designated

site. The conservation objectives of each feature, including any relevant supplementary advice, were read in conjunction with the identified potential adverse effects on the integrity of each feature of the site.

8.1.10 The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. The Milton Water Recycling Centre Discharge Consent: Water Quality and Ecological Assessment, prepared for an interim permit for the current WRC, will remain in place until the new Cambridge Water Recycling Centre (WRC) goes into operation in 2027/8, at which point permit conditions for the new site will come into effect. As a result, a water quality and ecological investigation has been undertaken to assess the potential impacts of both the proposed interim permit conditions and the permit conditions for the new site. With regard to the New Works Permit and WFD Quality Elements, the report demonstrates that there will be no anticipated impact upon hydromorphological supporting elements. Under the New Works Permit, phosphorous input will be reduced to 0.5mg/l. The report demonstrates the modelled ortho-p concentrations upstream and downstream of the proposed new works outfall under a 0.5mg/l permit scenario compared to the future baseline. At each model node within the Cam water body downstream of Cambridge WRC, there is a predicted reduction in ortho-p concentrations (mg/l) leading to an improvement in status from 'Poor' to 'Moderate'. Substantial improvements are predicted just downstream of the existing Cambridge WRC (334) and at the end of reach 334 with a 16% reduction in ortho-p at both model nodes. This improvement continues at the downstream nodes of the water body with a

19.4% improvement in ortho-p at end of reach 335 and 18.6 at the end of reach 336. It is likely that the removal of Waterbeach WRC under the new works permit scenario is sustaining a predicted reduction in ortho-p concentrations to the downstream limit of the Cam water body, with improvements in water quality evident at Ouse Washes SAC, SPA and Ramsar located 14.1km from the Proposed Development and The Wash and North Norfolk Coast SAC, Wash SPA and Ramsar located 70km at the downstream limit of the Cam. With regard to the New Works Permit and Biological Quality Elements, the report demonstrates that as phosphate concentrations are predicted to improve under this scenario there will be no adverse impacts upon biological quality elements of the receiving waterbody. Discharge limits for physico-chemical Supporting Elements including biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no

deterioration of the Cam water body for consented quality elements. As a result of this, it is not considered that the integrity of the site will be affected. Furthermore, a phased permit approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP.

8.1.11 During construction of the Proposed Development there is a risk of pollution events occurring through construction of the new outfall (e.g., spills or leaks from machinery operating close to waterways), and these have the potential to act in-combination with other plans, policies and projects to introduce toxic and non-toxic contamination, and discharge of silt-laden water or run-off to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or qualifying species, their food source/prey and/or their habitats. The activities to construct the outfall will require a flood risk activity permit which will include a detailed risk assessment and method statement and the provision of specific details on measures in place to prevent the release of poor-quality water to the River Cam. During the construction phase, there will be a requirement to implement the CoCP Part A and B (Application document reference number 7.14) and associated management plans specify the range of measures to avoid and minimise impacts that may occur in construction. Specific aspects of construction works for which each mitigation will be applied, the mitigation type, how it will be secured, and mitigation timing are provided in Section 5 (Table 5.1) of The HRA Report. In addition to the requirements within the CoCP there is also a requirement for relevant permits and licenses to be obtained prior to dewatering activities and works to works to water courses. These permits are also expected to include conditions including monitoring obligations. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or it's qualifying features, either alone or in-combination with other plans or projects.

8.1.12 During the operational phase, there is the potential for in-combination effects with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying species of the qualifying habitats, and/or

qualifying species, their food source/prey and/or their habitats. This will result in increased volumes of effluent being processed by the CWWTP, resulting in increased volumes of treated effluent being discharged from the proposed WWTP into the River Cam. There will be a beneficial (positive) impact on river water quality close to the location of the outfall at the time the proposed WWTP comes into operation, when compared to current river water quality. The final effluent quality standards are expected to improve as a result of the Proposed Development, resulting in improved localised and downstream water quality and reducing the effects of adverse high nutrient levels. Discharge limits for biochemical oxygen demand (BOD), ammoniacal nitrogen as N, total phosphorus and total suspended solids (TSS), will be agreed with the Environment Agency. The Environment Agency has confirmed that modelling to set discharge permit limits will follow 'no deterioration' requirements in the receiving water body. Furthermore, a phased permit

approach will be adopted for the proposed WWTP which allows variation in the permit limits over time in response to changes in the catchment including increase in flows to the proposed WWTP. This assessment therefore assumes that environmental permitting of final effluent discharge will ensure no deterioration of the Cam water body for consented quality elements. Evidence is provided in the HRA Report, Section 7, Table 71, to support the conclusion of **no adverse effect** on the integrity of the site or its qualifying features in-combination with other plans or projects.

References

England, N. (2014, 5 2). *Ouse Washes SAC Citation .* Retrieved from European Site Conservation Objectives for Ouse Washes SAC (UK0013011): http://publications.naturalengland.org.uk/file/5469802726424576

England, N. (2015, May 19). *Ouse Washes SAC Conservation Objectives Supplmentary Advice.* Retrieved from European Site Conservation Objectives for Ouse Washes SAC (UK0013011): http://publications.naturalengland.org.uk/file/5662963216154624

England, N. (2019, 3 23). *European Site Conservation Objectives for Ouse Washes SPA (UK9008041).* Retrieved from Ouse Washes SPA Conservation Objectives Supplematary Advice: http://publications.naturalengland.org.uk/file/6020266073522176

England, N. (2019, 2 14). *European Site Conservation Objectives for Ouse Washes SPA (UK9008041).* Retrieved from Ouse Washes SPA Conservation Objectives: http://publications.naturalengland.org.uk/file/5580340437712896

JNCC. (2007, May). *Ramsar.* Retrieved from Information Sheet on Ramsar Wetlands: https://rsis.ramsar.org/RISapp/files/RISrep/GB752RIS.pdf

Natural Engalnd. (2018, Nova 27). *Fenland SAC Conservation Objectives.* Retrieved from European Site Conservation Objectives for Fenland SAC (UK0014782: European Site Conservation Objectives for Fenland SAC (UK0014782)

Natural England. (2018, Nov 27). *European Site Conservation Objectives for Ouse Washes SAC (UK0013011).* Retrieved from Ouse Washes SAC Conservation Objectives : http://publications.naturalengland.org.uk/file/6571588111826944

Natural England. (2019, March 11). *European Site Conservation Objectives for Fenland SAC (UK0014782).* Retrieved from Fenland SAC Conservation Objectives suppplementary advice: European Site Conservation Objectives for Fenland SAC (UK0014782

Natural England. (2019, Nov 27). *European Site Conservation Objectives for North Norfolk Coast SPA (UK9009031).* Retrieved from North Norfolk Coast SPA Conservation Objectives: http://publications.naturalengland.org.uk/file/4744900111499264

Ramsar. (1999, 1 1). *Ouse Washes.* Retrieved from Ramsar Sites Information Service: https://rsis.ramsar.org/ris/77

Ramsar. (2005, Jan). *Ramsar Sites Information Service (RIS).* Retrieved from tHE wASH:

https://rsis.ramsar.org/ris/395

The Planning Inspectorate. (2012). *Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects*. Retrieved from https://infrastructure.planninginspectorate.gov.uk: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advicenotes/advice-note-ten/

UK Government. (2021, 09 6). *Environment Bill 2020.* Retrieved from Environment: https://www.gov.uk/government/publications/environment-bill-2020

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