

Cambridge Waste Water Treatment Plant Relocation Project  
Anglian Water Services Limited

# Appendix 8.15: Habitats Regulations Assessment Screening Report

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## Executive summary

A Habitats Regulations Assessment (HRA) screening has been completed as part of the EIA Phase 2 works in relation to the relocation of the Cambridge Waste Water Treatment Plant (hereafter referred to as the 'Proposed Development' or CWWTP). A HRA refers to the several distinct stages of assessment undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended). HRA refers to the whole process of assessment, including an Appropriate Assessment (where one is required).

The screening is carried out using the accepted steps (aligned to HRA stages), identifying all those Special Areas of Conservation (SAC), possible Special Areas of Conservation (pSAC), Special Protection Areas (SPA), possible Special Protection Areas (pSPA), Ramsar sites and proposed Ramsar sites that could potentially be affected by the Proposed Development. The screening aligns with 'Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects' published by the Planning Inspectorate (November 2017), both in terms of methodology and report structure. Key to this are the screening matrices in Appendix B, which summarise the screening exercise for likely significant effects (LSE) of the Proposed Development on the NSN sites<sup>1</sup> and their qualifying features.

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

This document sets out the details of the HRA screening exercise undertaken for the Proposed Development. This screening assessment investigates the potential for significant effects arising from the relocation of the existing Cambridge WWTP on the qualifying interests of:

- Wicken Fen Ramsar site/ Fenland SAC,
- Eversden and Wimpole Woods SAC,
- Devil's Dyke SAC,
- The Wash and North Norfolk Coast SAC,
- The Wash SPA and
- The Wash Ramsar site,
- Ouse Washes SAC,
- Ouse Washes SPA,

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<sup>1</sup> NSN sites identified under the Conservation of Habitats and Species Regulations 2017 (as amended) are referred to as 'NSN sites' in the National Planning Policy Framework.

- Ouse Washes Ramsar site.

The screening assessment considers whether the Proposed Development, either alone or in combination with other plans, policies or projects, will have a likely significant effect on the NSN sites. A desk-based assessment has been completed to identify NSN sites potentially affected by the Proposed Development. Identification of NSN sites has been through definition of an Ecological Zone of Influence (EZoI) based on proximity and connectivity to the Proposed Development.

Having regard to the precautionary principle, it is concluded that there is potential for significant effects on all of the above sites from the Proposed Development either alone or in-combination with other plans and/or projects, with the exception of Wicken Fen Ramsar site/ Fenland SAC. Likely significant effects may be due to changes in river water quality of the River Cam as a result of unplanned events in construction (for example a pollution event), change to water quality within the River Cam as a result of effluent quality and quantity (for example changes in nutrients) which could affect downstream SACs, pSACs, SPAs, pSPAs and Ramsar sites, emissions from construction phase vehicles resulting in nitrogen deposition that may affect qualifying habitats and/or species of an adjacent SAC or impacts to foraging and commuting habitat. The findings of this report are summarised in the Screening Statement set out in Chapter 5 of this document.

# 1 Introduction

## 1.1 Background

- 1.1.1 Anglian Water has commissioned a Habitats Regulations Assessment (HRA) screening report in relation to the relocation of the Cambridge Waste Water Treatment Plant (hereafter referred to as the 'Proposed Development' or CWWTP).
- 1.1.2 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) and outfall to the River Cam, a transfer pipeline corridor from a pumping station off Bannold Drive (Waterbeach), and a new access road.
- 1.1.3 This document sets out the details of the HRA screening exercise undertaken for this development.

## 1.2 The purpose of this Habitats Regulations Assessment Screening

- 1.1.4 This report contains all the HRA screening information necessary for the competent authority to identify all Likely Significant Effects (alone or in-combination with other projects or plans) in accordance with Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended) or Habs Regs.

## 1.3 The purpose of the Habitats Regulations Assessment

- 1.1.5 The Habs Regs are the UK government's pieces of legislation that originally transposed aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (both EU, Directives, known as the Nature Directives).
- 1.1.6 To account for the UK having left the European Union, the Habs Regs were amended in 2019, with only relatively minor changes coming into force on 31 December 2020<sup>2</sup>. The HRA regime set out in the Habs Regs will therefore continue to apply in largely the same way after the transition period ends. Examples of the relatively minor changes are that the European Commission's role in the HRA derogation test process will be replaced by the Secretary of State for the Environment, Food and Rural Affairs; and that there will be changes to the procedures for designation /

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<sup>2</sup> A summary of the changes can be found on the following webpages:

Brexit changes to the Habitats Regulations for England and Wales (CIEEM) <https://cieem.net/brexit-changes-to-the-habitats-regulations/>

Habitats Regulations Assessment after 31 December | How will it look? (Freeths) <https://www.freeths.co.uk/2020/10/22/the-habitats-regulations-assessment-regime-after-31-december-2020-how-will-it-look/> (both accessed 04.02.2021)

classification of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

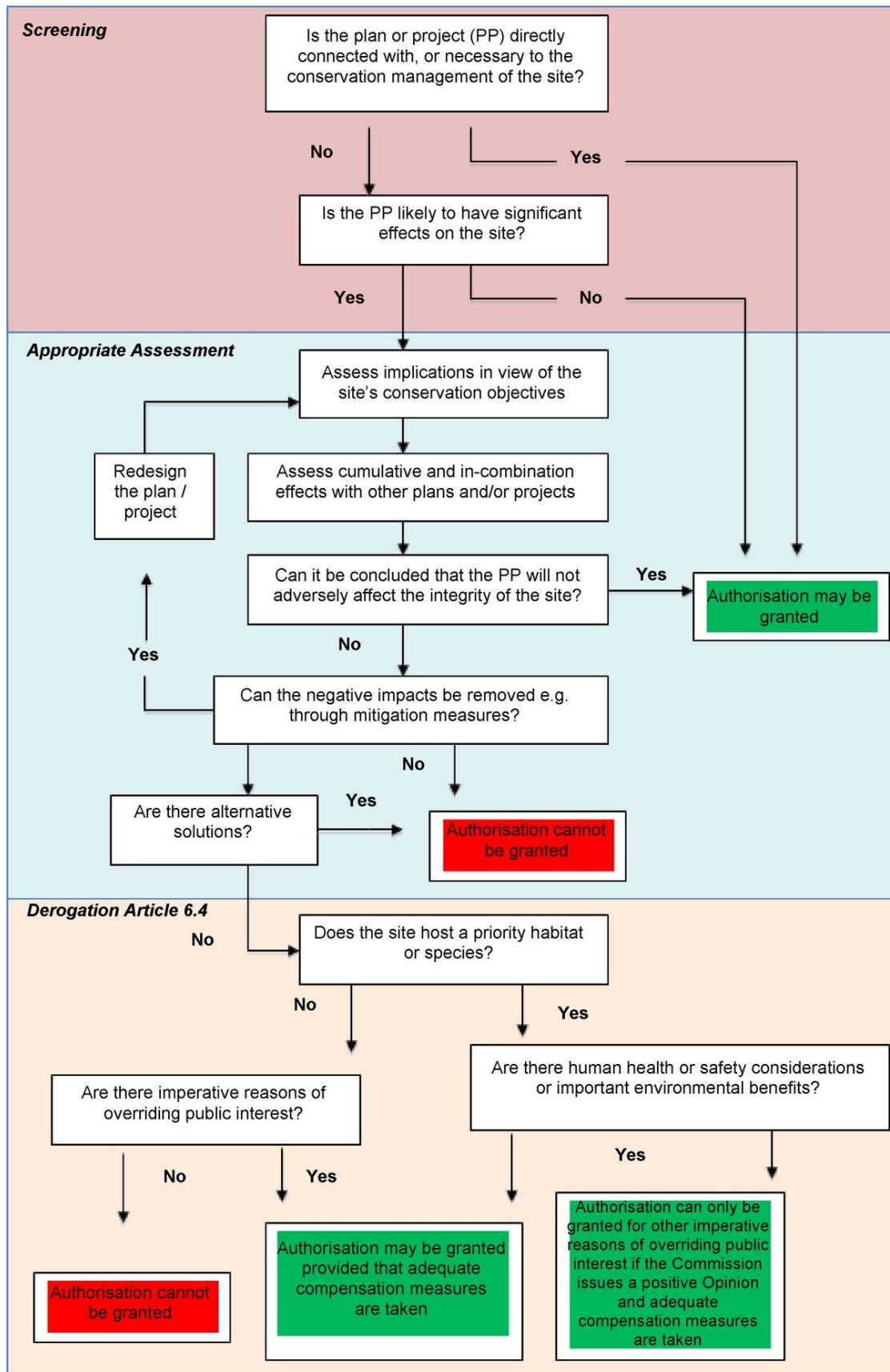
- 1.1.7 In England the government implements the protection afforded to habitats and species by the Habs Regs through a set of statutory instruments collectively referred to as the 'Habitats Regulations'. A cornerstone of the Habitats Regulations is the designation and conservation of sites to maintain the favourable conservation status of protected habitats and species listed in the Habs Regs. These sites make up the European Union-wide Natura 2000 network, within which the UK sites are referred to as the National Site Network (NSN) from January 2021.
- 1.1.8 For any plan or project that could affect one or more NSN sites, the provisions of Part 6 of the Habs Regs establish the procedure that a competent national authority must follow before agreeing to the implementation of a plan or project on land or at sea within the Ecological Zone of Influence (EZoI) of the baseline. The procedure, known as an 'appropriate assessment', requires such plans or projects to undergo a stepwise impact assessment against the NSN sites' conservation objectives (see Figure 1.1). In England the assessment process is known as a Habitats Regulations Assessment (HRA).
- 1.1.9 The competent authority can only agree to the plan or project if, based on the findings of the appropriate assessment, it has demonstrated the absence (rather than the presence) of an adverse effect on the integrity of the NSN site concerned.
- 1.1.10 In exceptional circumstances, a plan or project having an adverse effect on the integrity of an NSN site can be approved under Part 6 of the Habs Regs if it can be demonstrated that there is an absence of less damaging alternatives and the plan or project is necessary for imperative reasons of overriding public interest (IROPI). In such cases, adequate compensation measures must be secured to ensure that the overall coherence of the NSN is maintained.
- 1.1.11 The Planning Inspectorate (PINS) Advice Note Ten 'Habitats Regulations Assessment relevant to nationally significant infrastructure projects' (version 8, November 2017), defines HRA as a step by step process which determines likely significant effect (LSE) and (where appropriate) assesses adverse impact on the integrity of a European site, examines alternative solutions, and provides justification of Imperative Reasons of Overriding Public Interest (IROPI). The advice note refers to the four stage process as summarised below and illustrated in Figure 1.1.
  - HRA Stage 1 - Screening: Screening for LSE (alone or in-combination with other projects or plans);
  - HRA Stage 2 - Appropriate Assessment: Assessment of implications of identified LSEs on the conservation objectives of a European site to ascertain if the proposal will adversely affect the integrity of a European site;
  - HRA Stage 3 – Assessment of Alternative Solutions (where it cannot be ascertained that the proposal will not adversely affect the integrity of a European site); and
  - HRA Stage 4 – Assessment of IROPI (where no alternative solutions are identified).



- 1.1.12 All four stages of the process are referred to as the Habitats Regulations Assessment (HRA) to clearly distinguish the whole process from the one step within it referred to as the “Appropriate Assessment” (AA).
- 1.1.13 Note that not all four stages need be completed; if screening identifies that no LSE are predicted, then the process does not need to progress further. If LSE are identified, it may be that the Appropriate Assessment, exploring the LSE in more detail, can identify that there would be no adverse effects on integrity of the NSN sites, then as above, the process can stop on completion of this stage.
- 1.1.14 It is useful to note that more recent guidance has condensed the above into just three stages. The national guidance contained in ‘Appropriate Assessment - Guidance on the use of Habitats Regulations Assessment. Published 22 July 2019’ (GOV.UK (2019) includes the three stages below:
- Stage 1 Screening;
  - Stage 2 Appropriate Assessment; and
  - Stage 3 Derogation - to consider if proposals that would have an adverse effect on a European site qualify for an exemption.

Figure 1-1: The Habitats Regulations Assessment process

(Source: European Commission, 2018)



1.1.15 Note that the reference, in the Appropriate Assessment section of the above figure includes the requirement to assess cumulative and in-combination effects with other plans and/or projects; Unlike in EIA, the terms cumulative and in-combination are used interchangeably, as a combined process. As such, this document simply refers to this stage of the assessment as an in-combination assessment.

## 1.4 Screening principles

1.4.1 The purpose of screening is to identify the likely significant effects that arise from the interaction between actions of the project and sensitive receptors through impact pathways. The following principles underpin this screening assessment:

1. Sites are referred to as 'NSN sites', in accordance with the government guidance on appropriate assessment and the National Planning Policy Framework (NPPF). NSN sites include the following designations:
  - Special Areas of Conservation (SAC);
  - Sites of Community Importance (SCI);
  - Special Protection Areas (SPA);
  - potential SACs (pSAC);
  - potential/proposed SPAs (pSPA);
  - sites proposed to the European Community as an SCI, i.e., a candidate SAC (cSAC); and
  - Ramsar sites and proposed Ramsar sites are not within the NSN but are nonetheless included in the assessment in accordance with the NPPF.
2. The project is not directly connected with or necessary to the conservation management of any habitats site.
3. Screening is undertaken regardless of whether the project is located inside or outside the boundary of a habitats site.
4. The term impact means an action 'resulting in changes to an ecological feature', and effect means an 'outcome to an ecological feature from an impact'.
5. The term zone of influence means 'The area(s) over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities'.
6. The NSN sites for inclusion in the HRA screening will be identified where the project's zone(s) of influence intersect with any Sites of Special Scientific Interest (SSSI) impact risk zones (IRZ) associated with a habitats site. In this instance the selection of SSSI IRZs is based on those IRZs relevant to all planning applications and IRZs relevant to the Proposed Development. In addition, NSN sites will also be included for assessment where there are likely significant effects from the Proposed Development, irrespective of distance. The most pertinent examples of this are alterations to the water quality or quantity on watercourses, where even distant downstream NSN sites may be affected.

7. In the context of the precautionary principle a likely significant effect exists when it cannot be excluded on the basis of objective information that the project will have a significant effect on the habitats site concerned and where the risk of a significant effect is “real” as opposed to hypothetical.
8. The assessment of risk will be made in the light, inter alia, of the conservation objectives, characteristics and specific environmental conditions of the habitat site concerned.
9. Mitigation measures intended to avoid or reduce the harmful effects are not considered when determining if a likely significant effect exists.
10. Any likely significant effects identified through the application of the above principles will be taken forward and assessed in detail in an appropriate assessment.

## 1.5 Consultation with Natural England

1.5.1 The Statutory Nature Conservation Body (SNCB) is Natural England. 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) 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:

- The Cam Washes Site of Special Scientific Interest
- The Wash SPA
- North Norfolk Coast SAC
- The Ouse Washes SPA, SAC, Ramsar and SSSI
- Any other legally protected sites that are hydrologically connected to the flow from the water recycling centre.

1.5.2 Further to discussions related to permitting and downstream locations Natural England have also undertaken a review of a Hydrogeological Impact Assessment (HIA) report completed to support the Stage 4 - Final Site Selection assessment for the Proposed Development. Advice within a response provided following their review of the HIA explicitly states that ‘Natural England welcomes that all potential impacts on all surface water and groundwater dependant nature conservation sites will be considered in the water resources assessment of the Environmental Statement (ES), and that a Habitats Regulations Assessment (HRA) screening will be undertaken in relation to Wicken Fen Ramsar, SAC, NNR and SSSI’<sup>3</sup>.

1.5.3 Consultation with Natural England will continue through the stakeholder consultation and engagement programme and this will include seeking feedback on HRA screening and subsequent HRA stages.

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<sup>3</sup> Discretionary Advice reference 16690/36570 06 September 2021

## 1.6 Structure of this report

1.6.1 The structure of this screening report is as follows:

- Introduction
- Proposed development
- Identification of sites and features for screening assessment
- Assessment of Likely Significant Effects
  - Alone
  - In-Combination
- Screening Statement (Conclusions)
- Appendix A – Figures
- Appendix B – HRA Screening Matrices
- Appendix C – NSN Citations/Standard Data Forms

## 1.7 Assumptions, limitations, and uncertainties

1.7.1 This screening assessment is subject to the following assumptions, limitations and uncertainties:

- The design for the Proposed Development is still evolving. This screening has been completed on the basis of the design information available. It is considered sufficient as a basis for this HRA screening and where uncertainty exists a precautionary approach has been taken.
- Further information on the construction and operation of the Proposed Development will become available to inform the ongoing Environmental Impact Assessment (EIA) and the appropriate assessment which is assumed to be required as part of the HRA.

## 2 Proposed Development

### 2.1 Need for the project

- 2.1.1 Anglian Water supplies water and water recycling services in the east of England. The east of England region faces particularly acute challenges from climate change, population and housing growth and the need to enhance the natural environment. Above and beyond the provision of fresh, clean water and the effective treatment of waste water, Anglian Water's purpose is to tackle these challenges, delivering wider benefits to society by serving their customers and communities and safeguarding the environment. Since 1895, the existing Cambridge WWTP has been serving the needs of Cambridge and Greater Cambridge by taking waste water from people's homes and businesses, cleaning it and returning it to the environment. The existing Cambridge WWTP also plays a vital role by receiving surface water during heavy rainfall.
- 2.1.2 The need to relocate the existing Cambridge WWTP arises principally from forecast population growth and urbanisation in Cambridge. Cambridge City Council (CCC) and South Cambridgeshire District Council (SCDC) are jointly preparing a North East Cambridge Area Action Plan (AAP). The AAP identifies the site of the existing Cambridge WWTP as an area where housing and other development is to be located to support the accommodation of population growth in a sustainable location. The relocation of the existing Cambridge WWTP is therefore required to deliver the objectives of the emerging AAP in close collaboration with CCC, Anglian Water and other stakeholders in the area.
- 2.1.3 The regeneration of this part of Cambridge ('Cambridge Northern Fringe East' - CNFE) is supported by Policy 15 'Cambridge Northern Fringe East and new railway station Area of Major Change' in the Cambridge City Local Plan (adopted 2018). Policy 15 states that the amount of development, site capacity, viability timescales and phasing of development will be established through the preparation of the AAP for the site.
- 2.1.4 The regeneration of CNFE commenced with the opening of the Cambridge North parkway station in 2017, followed by the award of forward funding from Homes England (HE) through a Housing Infrastructure Fund (HIF) to relocate the existing Cambridge WWTP, creating the potential to deliver over 8,600 housing units over 20 years and create up to 24,000 jobs.
- 2.1.5 The requirement to meet the housing needs of future population growth has been identified in the National Infrastructure Commission's 2017 report<sup>4</sup>, which emphasised the prioritisation of the Cambridge –Milton Keynes –Oxford growth arc in the interests of advancing United Kingdom prosperity. Greater Cambridge is the fastest growing city economy in the United Kingdom and offers the potential to underpin this prioritisation. The growth of the area is an acute challenge, with an

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<sup>4</sup> NIC (2017) Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc [ONLINE] Available at: [Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc \(nic.org.uk\)](https://www.nic.org.uk/partnering-for-prosperity-a-new-deal-for-the-cambridge-milton-keynes-oxford-arc)

undersupply of housing and house prices more than thirteen times the average salary.

- 2.1.6 The Proposed Development is being pursued in anticipation of the emerging policy position to provide additional housing to accommodate population growth in Cambridge.

## 2.2 Consenting the Proposed Development

- 2.2.1 The Proposed Development is a nationally significant infrastructure project (NSIP) as defined by Section 14(1)(o) of the Planning Act 2008: the construction or alteration of a waste water treatment plant, and Section 29(1) as it is expected to have a capacity of approximately 548,000 population equivalent. The waste water treatment element (i.e. the Water Recycling Centre not including the Sludge Treatment Centre) has an overall design capacity of 270,000 to 300,000 population equivalent. This would be expected to accommodate current forecasted housing growth to around 2050.
- 2.2.2 Anglian Water intends to submit an application for a Development Consent Order (DCO) to the Planning Inspectorate for the Proposed Development. The Planning Inspectorate will examine the DCO application and will make a recommendation to the Secretary of State on whether development consent for the Proposed Development should be granted or refused.

## 2.3 Site location

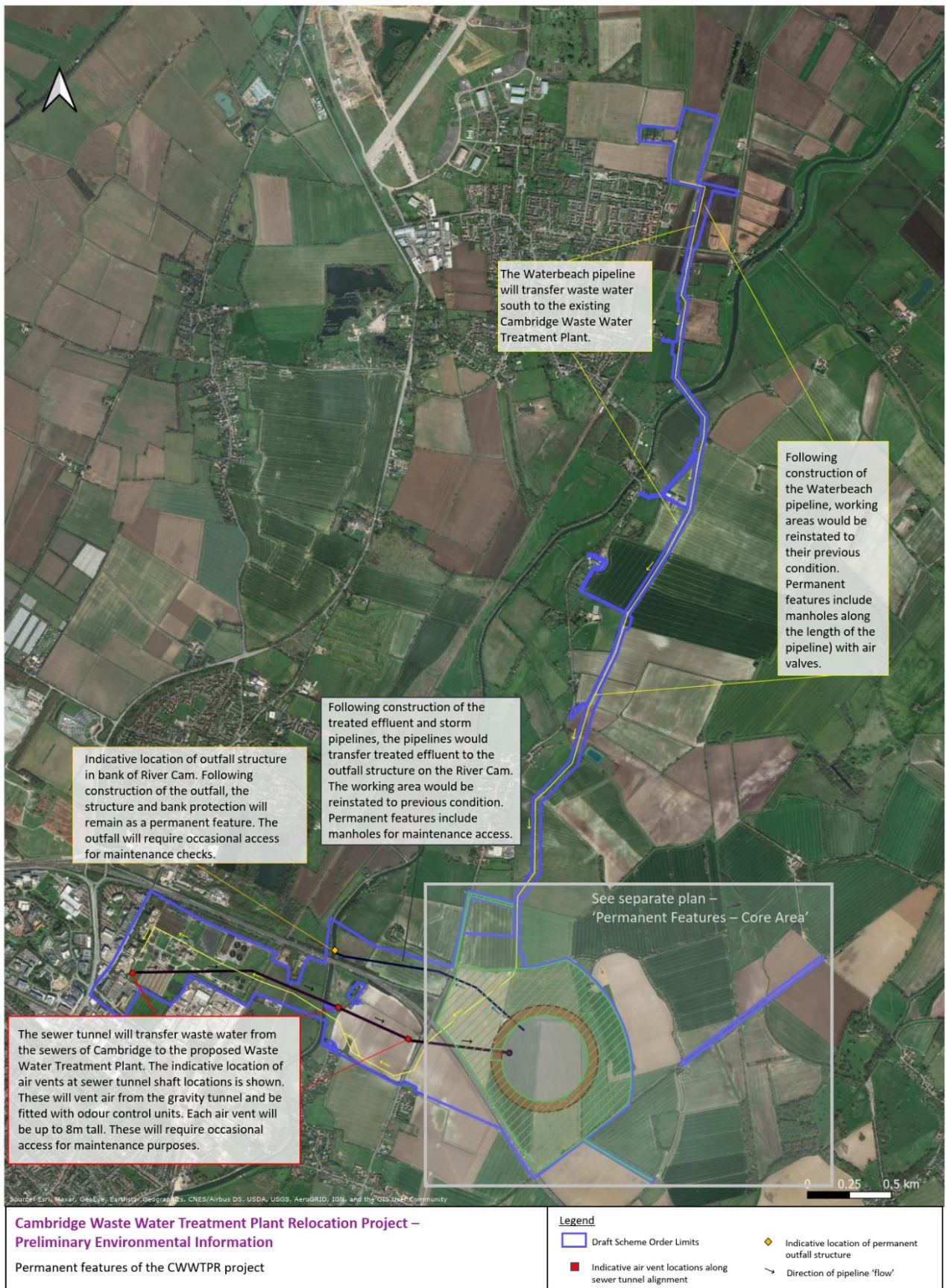
- 2.3.1 The Proposed Development is located in Cambridgeshire in the east of England and does not overlap with devolved administrations or other European Economic Areas (EEA). The proposed WWTP is expected to require a total footprint of 22 hectares (ha). This extent has been identified as a suitable size in which the necessary facilities can be accommodated, allowing for perimeter landscape screening.
- 2.3.2 A site location plan, including the DCO scoping boundary, is shown in Figure 2.1 below. It includes:
- a core zone, including the proposed WWTP and all associated earth banks, landscaping, public access etc (blue area);
  - the existing Cambridge WWTP, the underground transfer pipelines and the final effluent pipeline and outfall (orange area); and
  - the Waterbeach transfer pipeline (green area).
- 2.3.3 The proposed WWTP is located 2km to the east of the existing Cambridge WWTP, within the administrative boundary of South Cambridgeshire District. The site lies between the villages of Horningsea to the north, Stow Cum Quy to the east and Fen Ditton to the south east. The A14 extends along the south western boundary of the site and Low Fen Drove Way, an unclassified road and public byway follows parts of the eastern and north eastern boundary of the site area. Beyond Low Fen Drove Way, open farmland extends to the north east towards and beyond Stow Cum Quy

Fen, and to the east, towards Stow Cum Quy village. To the west of the site lies Junction 34 of the A14, a junction intersected by Horningsea Road which extends north, parallel to the western boundary of the site area. Horningsea Road connects Fen Ditton to the south with the village of Horningsea in the north.

- 2.3.4 The area of land for the proposed WWTP area is open farmland with large arable fields defined by boundary hedges and ditches. The topography is mostly level, at 5-10m above Ordnance Datum (AOD), rising towards the west. A dismantled railway, also designated as County Wildlife Site (CWS), crosses the southern end of the site area and overhead powerlines are to the north and east of the site.



Figure 2-1: Overview of Proposed Development

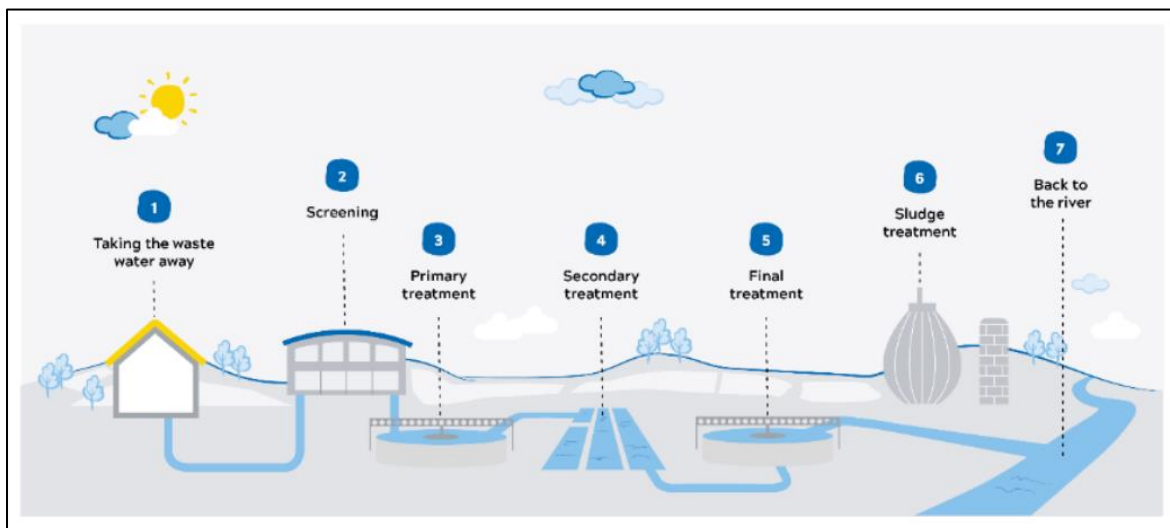


Source: Anglian Water CWWTP PEI Introductory Paper, 2022

## 2.4 Development Overview

- 2.4.1 The existing Cambridge WWTP is an integrated WWTP, as would be the Proposed Development. Integrated WWTP incorporate a sludge treatment function, in the form of a Sludge Treatment Centre (STC), which treats the sludge derived from the waste water from the catchment, and the “wet sludge” produced by other satellite plants which do not have integrated STC.
- 2.4.2 Figure 2.2 provides an overview of the waste water and sludge treatment processes proposed for waste water and sludge. Alongside waste water treatment, all storm flows which are conveyed to the proposed WWTP following heavy rainfall would be partially treated. The sludge treatment process would produce sludge for use as bio-fertiliser for spreading on agricultural land and produce energy via anaerobic digestion as biogas is produced as a by-product.
- 2.4.3 The Proposed Development will also include the installation of photovoltaic panels to harness solar energy for conversion into electricity to service some of the site demand.

Figure 2-2: Treatment process overview



- 2.4.4 The Proposed Development comprises:
- a new integrated WWTP;
  - a transfer tunnel from the existing Cambridge WWTP to the new location with ancillary infrastructure;
  - a new pipeline to transfer waste water from Waterbeach to the Proposed Development;
  - a return tunnel to a new discharge point at the River Cam, including ancillary structures;
  - a site access to the proposed WWTP;
  - utilities connections
  - offsite highway network alterations;

- delivery of a landscaping masterplan; and
  - renewable energy generation and storage for use on-site and export; and
  - ancillary on-site buildings (including a site office, amenities building, substation building, security kiosk and vehicle parking).
- 2.4.5 Integrated waste water treatment plants act as “hubs” dealing not only with the waste water treatment process for the catchment areas in which they, and their nearby population centres, are located but also completing the waste water treatment process for the “wet sludge” tankered in from the local satellite facilities. The “wet sludge” from these satellite plants is transported to the WWTP by tankers and deposited into the first stage of the STC process at the WWTP. The existing Cambridge WWTP acts as a “hub” for local satellite sites. The overall Cambridge catchment has around 45 such satellite sites which send wet sludge to the existing Cambridge WWTP. Other local catchments, Huntingdon and Ely also feed into the existing Cambridge WWTP.
- 2.4.6 Sludge treatment is undertaken to separate suspended solids from the waste water which are then digested anaerobically. The dewatered solids at the conclusion of the digestion process are reduced to methane (which is used to generate heat required to activate the water treatment process, and power in the form of electricity), and an agricultural product to be used as fertilizer. The waste water removed as a result of the digestion process is then returned to the start of the waste water treatment process.

## 2.5 Capacity

- 2.5.1 The design capacity of the proposed WWTP will be approximately 548,000 population equivalent. The waste water treatment element (i.e. the Water Recycling Centre not including the Sludge Treatment Centre) has an overall design capacity of 270,000 to 300,000 population equivalent. This covers the duration of the Greater Cambridge Local Plan’s anticipated growth to 2041. The Sludge Treatment Centre will be designed to treat sludge produced at the proposed WWTP plus imported liquid sludges arriving by road. The STC is designed to treat a total amount of up to 16,000 Tonnes Dry Solids (TDS) per year for both indigenous and imported sludge.
- 2.5.2 The design incorporates flexibility and extra space within the proposed WWTP, that will allow modification of the facility beyond 2040s. These measures include:
- flexibility within the treatment processes that would allow influent flow rates to be managed both through the process design, and within the choice of technologies;
  - having flexibility within the footprint of the proposed WWTP for adaptation and change which will allow treatment processes changes in the future; and
  - additional capacity within the storm tank storage and transfer tunnel which will serve to help attenuate future stormflows.

## 2.6 Biogas generation

2.6.1 At the existing Cambridge WWTP heat and electrical power are generated through burning biogas produced at the STC in combined heat and power (CHP) engines. Two options are under consideration for the proposed WWTP. These are:

- Biogas generated by the process will be firstly burned within onsite steam raising boilers to generate heat for use in the sludge treatment process and the surplus cleaned (concentration of methane increases as impurities are removed to create bio-methane) and exported to the national natural gas network; or
- The approach utilised at the existing Cambridge WWTP of burning biogas within CHP (no greater than 5MW) engines to generate electricity, will be used with the waste heat utilised within the process.

2.6.2 The biogas system also includes a waste-gas-burner, which burns the biogas during a failure event on site, to protect people and the environment from potential harmful impacts associated with high concentrations of methane and other gases, in accordance with Environmental Permit requirements.

## 2.7 Connection with the River Cam

2.7.1 The Environment Agency regulates WWTP by assessing the quality of the treated effluent returned to the environment against set compliance limits. The required level of treatment and monitoring is based on the population that the WWTP serves and the characteristics of the receiving environment. The level of treatment that a WWTP must provide and monitoring by the operator depends on the PE of the 'agglomeration'<sup>5</sup> it serves.

2.7.2 During construction of the proposed WWTP the existing Cambridge WWTP would remain in operation under the current environmental permit (ref: AN/ASCNF1033/014). There would be a planned transition period between the two WWTPs.

2.7.3 Once fully operational the existing Cambridge WWTP permit will be rescinded to the standards required by the Environment Agency.

2.7.4 As per paragraph 3.7.3 of the National Policy Statement (NPS) on Waste Water, 'the Examining Authority and the decision maker should work on the assumption that the relevant pollution control regime will be properly applied and enforced<sup>6</sup>'. The main pollution control mechanism in the case of a WWTP is the Environment Agency environmental permit. The NPS goes on to say that the focus should rest on whether the development itself is an acceptable use of the land, and on the impacts of that use, rather than the control of processes, emissions or discharges themselves.

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<sup>5</sup> An agglomeration is an area where the population and economic activities are sufficiently concentrated for urban waste water collection. The waste water is then taken for treatment to a WWTP and to a final discharge point.

<sup>6</sup> Defra (2012) National Policy Statement for Waste Water [online]. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69505/pb13709-waste-water-nps.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69505/pb13709-waste-water-nps.pdf)

2.7.5 Over its operational lifetime, the Proposed Development's final effluent discharges will remain subject to the Environmental Permitting regime. The Environment Agency is required through the River Basin Management Planning (RBMP) process to ensure that river water quality is maintained, and will periodically review the relevant water quality components in the Environmental Permit. Permit conditions are, therefore, likely to vary over time in response to changes in flow, including those arising from population growth, changes in water usage, climatic or environmental factors. The plant has been designed to be flexible and accommodate changing regulatory requirements within the footprint of the landscaping bund.

### **Storm flow management**

2.7.6 Due to the nature and design of the Cambridge sewer network all flow conditions (including storm) will be delivered via the terminal pumping station to the proposed WWTP. The provision of full treatment capacity for these larger diluted 'storm' flows is not required. Therefore, once the rate of flow into the terminal pump station exceeds the expected 'Flow to Full Treatment' (FFT) (2,000litres/second) storm pumps will start working and divert the excess incoming flows to the stormwater storage and treatment plant. This stormwater management solution will be in accordance with the agreement reached with the Environment Agency as part of the environmental permit for storm and emergency overflows which aims to minimise the risk of release of waste water to the environment.

2.7.7 The storm tanks will also have discharge overflow pipework that transfer flows to the River Cam only once the stormwater storage is full. These flows will be screened and partially settled. The Environment Agency's response to the environmental permit pre-application and other interactions indicates a "no detriment" impact to the River Cam approach between the existing Cambridge WWTP and proposed WWTP for storm water management.

2.7.8 The influent flows to the proposed WWTP are currently being refined by hydraulic models of the existing sewer network and include allowances to accommodate the planned development requirements and growth allowances. During a 1 in 100 year design storm in the catchment area the flow rates to the proposed WWTP, dependant on the storm intensity chosen, are expected to peak at 7,000litres/second. The storm flows will be influenced by the treatment plant, processes and attenuation capabilities in line with the environmental permit for storm and emergency overflows (storm storage in the permit). The estimated magnitude and frequency of the storm events are currently being developed through network modelling and storm storage and treatment options.

### **Landscaping**

2.7.9 A Landscape, Ecology and Recreation Management Plan (LERMP) will be submitted as part of the DCO application, which will set out the principles for how the landscape and ecological features included within the DCO application would be delivered and how the land will be managed long term. The majority of management will be carried out in the operational phase, although landscape and habitat features will be created from the construction phase and onwards.

2.7.10 The delivery of elements of the landscape masterplan such as tree planting and grassland creation would start during the construction phase to ensure trees planted for visual screening can be effectively established.

### Reinstatement

2.7.11 During the construction phase and once construction works are complete, for example after a certain construction compound has served its purpose, reinstatement will be undertaken. This would be done in a phased manner once certain areas are complete.

## 2.8 Construction of the Proposed Development

### Construction staff and working hours

2.8.1 Proposed working hours are provided in Table 4.1.

Table 2-1: Proposed construction hours

Working Hours Categorisation	Description
<p><u>Winter core working hours (October to March)</u>            7am to 6pm Monday to Friday.            8am to 4pPPTm Saturday.            Daily mobilisation activities-            Plus up to one hour before and after for mobilisation/maintenance activities i.e., 6am to 7pm Monday to Friday and 7am to 5pm Saturday.</p>	<p>These are the core hours that will apply to the majority of work areas and activities.</p> <p><u>Daily mobilisation/maintenance activities</u>            These will include the following;</p> <ul style="list-style-type: none"> <li>- arrival and departure of the workforce to the construction compounds;</li> <li>- movement from compounds to the working areas (if parked engines shall be turned off and shall be considerate toward neighbours with no loud music or raised voices);</li> <li>- site meetings (briefings in compound buildings) and quiet walk overs or site inspections;</li> <li>- refuelling; and</li> <li>- site cleaning and maintenance (which does not require the use of plant or hammering/banging).</li> </ul>
<p><u>Summer core hours (April to September)</u>            6am to 7pm Monday to Friday            8am to 6pm Saturdays            Daily mobilisation activities-            Plus one hour before and after for mobilisation activities i.e., 5am to 8pm Monday to Friday and 7am to 7pm Saturday.</p>	<p>Longer working hours are proposed in the summer months in order to maximise the works which can be undertake in better weather conditions albeit that they may not be used every day.</p> <p><u>Daily mobilisation/maintenance activities</u>            These will include the following;</p> <ul style="list-style-type: none"> <li>- arrival and departure of the workforce to the construction compounds;</li> <li>- movement from compounds to the working areas (if parked engines shall be turned off and shall be considerate toward neighbours with no loud music or raised voices);</li> <li>- site meetings (briefings in compound buildings) and quiet walk overs or site inspections;</li> </ul>

Working Hours Categorisation	Description
	<ul style="list-style-type: none"> <li>- refuelling; and</li> <li>- site cleaning and maintenance (which does not require the use of plant or hammering/banging).</li> </ul>
<p>Very special circumstances extension for particular activities  6pm to 10pm Monday to Friday  6pm to 10pm on Saturdays  8am to 2pm on Sundays  These are more likely to be required during the first two years of the Project.</p>	<p>Extended working hours will be required for specific activities which it will not be possible to complete during the core working hours. The number of activities which will fall within this category will be limited and will not necessarily take place on consecutive days.</p> <p>The following activities falling within this category have been identified:</p> <ul style="list-style-type: none"> <li>- major concrete pours including base slabs;</li> <li>- abnormal load delivery including those escorted by the Police; and</li> <li>- contract lifts i.e., lifting of pieces of equipment on crane.</li> </ul>
<p>Continuous Working Hours  0.00 to 0.00 Monday to Sunday</p>	<p>Certain specific construction activities will need to take place on a continuous 24-hour, 7 day a week basis. These have been identified as:</p> <ul style="list-style-type: none"> <li>- tunnelling and underground work including the maintenance of underground machinery and plant. Essential surface support activities including the processing and handling of excavated material, shaft lifting operations, tunnel lining supply;</li> <li>- where over pumping takes place 24 hour call out will be needed in order to respond to any issues should they arise;</li> <li>- Network Rail and/or National Highways are expected to stipulate a requirement for 24 hour working in relation to works under or adjacent to their assets; and</li> <li>- construction under the River Cam. Horizontal Directional Drill under the River Cam will need to be a period of continuous working in order to complete the drill shots.</li> </ul>
<p>Out of hours working</p>	<p>It would be beneficial to carry out the following activities outside of the core working hours in order to minimise disruption to the local community.</p> <p>The following activities are proposed:</p> <ul style="list-style-type: none"> <li>- construction deliveries to utilise periods of low traffic flow -this will be set out in the CTMP;</li> <li>- works within the highway or footpaths;</li> <li>- Connections into Anglian Water’s existing network so that these can be done during periods of low demand; and</li> </ul>

Working Hours Categorisation	Description
	<ul style="list-style-type: none"> <li>- Utility connections as required by the relevant statutory undertaker so that these can be done during periods of low demand.</li> </ul>
Short notice working for safety reasons	<p>There may be isolated occasions where works need to be made safe. This requirement could arise due to adverse weather or climate conditions.</p> <p>Due to their nature, it is unlikely that it would be possible to notify the local community before any works falling within this category take place but the requirement for them will be explained to the local community as part of the regular liaison which the Principal Contractor(s) will be expected to undertake.</p>
Over-running works	<p>Whilst every effort will be made to ensure that this does not happen there may be some occasions when a construction activity over runs and cannot be paused until it has been completed and/or made safe.</p> <p>Due to their nature, it will not be possible to notify the local community before any works falling within this category take place but the requirement for them will be explained to the local community as part of the regular liaison which the Principal Contractor(s) will be expected to undertake.</p>

### Existing Cambridge WWTP staff and working hours

2.8.2 The number of staff on the existing Cambridge WWTP would remain as current during construction of the proposed WWTP:

- eight office staff are expected to be on site each day, with normal working hours of 0730-1700;
- six operations daytime staff are expected to be on site each day, with normal working hours of 0730-1700;
- one operations process controller is expected to be on site at any time working two 12hr shifts per day (0700-1900 & 1900-0700);
- one operation shifts technician is expected to be on site at any time working two 12hr shifts per day (0600-1800 & 1800-0600); and
- four mechanical and electrical specialists are expected to be on site each day, with normal working hours of 0730-1700.

### Construction access

2.8.3 In construction there are several points of access required from the public highway to land required for the construction of the Proposed Development. In operation there will be a new access from the proposed WWTP on to the B1047 Horningsea Road. The construction will be sequenced so the permanent access would be constructed and then used to support construction. Prior to its completion there will



be a temporary construction access to the land required to build the proposed WWTP from Low Fen Drove Way. In operation there will be a new access from the proposed WWTP on to the B1047 Horningsea Road.

### **Construction vehicle movements**

2.8.4 It is anticipated that during the peak construction period, particularly during the large concrete pour, construction-based traffic could equate to an additional 200 to 300 vehicle movements. When not carrying out large concrete pours this number would likely be between 100 and 200 vehicle movements. In addition, there will be light goods vehicles (LGV) delivery vehicle movements and construction worker arrival and departures. Construction traffic predictions will be confirmed in the Environmental Statement (ES).

### **Construction compounds**

2.8.5 The land identified in Figure 2.1 includes land for the proposed WWTP as well as land to accommodate the construction of the proposed WWTP and associated transfers and pipelines. Construction compounds will be required in implementing various components of the Proposed Development, such as construction of vent shafts and pipe laying. It is currently understood that up to five construction compounds, two of which will be on the land of the existing Cambridge WWTP; one at the end of Green End Road adjacent to the River Cam; one on Horningsea Road and another one will be along the River Cam bank, with the exact location yet to be determined.

### **Construction programme and duration**

2.8.6 During construction of the proposed WWTP the existing Cambridge WWTP and existing Waterbeach WRC would remain in operation under their current discharge permits. There would be a planned transition period between the existing Cambridge WWTP and proposed relocated WWTP.

2.8.7 The earliest construction is expected to start in 2024 with the Waterbeach pipeline works. The proposed WWTP is planned to be fully operational in 2028.

**Table 2-2: Construction timeline**

<b>Construction Phase</b>	<b>Duration</b>	<b>Start</b>	<b>End</b>
Waterbeach works including enabling works & mobilisation and decommissioning of the Waterbeach WRC	12 months	Apr-2024	Apr-2025
Enabling works & mobilisation for non-Waterbeach elements	3.5 months	Aug-2024	Nov-2024
Water Recycling Centre including water testing and dry commissioning	31 months	Oct-2024	Mar-2027
Sludge Treatment Centre including water testing and dry commissioning	19 months	Nov-2024	Jun-2026
Wet Commissioning	5.5 months	May-2027	Feb-2028
Transfer Tunnel	18 months	Nov-2024	Jun-2026

Construction Phase	Duration	Start	End
Treated and storm Effluent Main and outfall	14 months	Jul-2025	Aug-2026
De-Commissioning existing Cambridge WWTP	8 months	Oct-2027	Mar-2028

Source: PEI Introductory Paper, 2022

## 2.9 Operation of the Proposed Development

### Operational staff and hours

2.9.1 The proposed WWTP would be operated by the following staff with the following operational hours.

- eight office staff are expected to be on site each day, with normal working hours of 07:30-17:00;
- six operations daytime staff are expected to be on site each day, with normal working hours of 07:30-17:00;
- one operations process controller is expected to be on site at any time working two 12-hour shifts per day (07:00-19:00 & 19:00-07:00);
- one operation shifts technician is expected to be on site at any time working two 12-hour shifts per day (06:00-18:00 & 18:00-06:00); and
- four mechanical and electrical specialists are expected to be on site each day, with normal working hours of 07:30-17:00.

### Operational traffic

2.9.2 Once the existing Cambridge WWTP ceases to operate this would result in a reassignment of all operational vehicles across the strategic and local road network. Vehicle trips, including the 129 two-way operational HGV trips that currently travel to and from the existing WWTP would reassign on the highway network to routes to and from the proposed WWTP.

## 2.10 Decommissioning activities

2.10.1 Once the proposed WWTP is fully operational and the Waterbeach transfer pipeline works are complete, the existing Cambridge WWTP and existing water recycling centre (WRC) at Waterbeach will be decommissioned. Decommissioning is expected to include activities such as the draining down and cleaning of existing tanks (including the disposal/treatment of any waste), making the plant mechanically and electrically safe.

2.10.2 As part of the relocation process the existing Cambridge WWTP will be decommissioned once the proposed WWTP is fully operational and taking all the flows that would have previously been treated at the existing Cambridge WWTP. The scope of the decommissioning will be aligned with the requirements set out by the Environment Agency in respect of the anticipated rescinding of the current operational permits, specifically the final effluent and storm discharge consents, and sludge treatment operation permit. The detail of these requirements is not yet defined but would include the draining down and cleaning of existing tanks

(including the disposal/treatment of any waste), making the plant mechanical and electrically safe, preventing heat generating equipment from being operated and prevention of rainwater storage in open top tanks.

2.10.3 Other decommissioning activities, including the demolition of structures and site preparation for the site's redevelopment are outside of the scope of the relocation project DCO and will be carried out by the site developer in accordance with a separate planning permission. The connection shaft for the new waste water transfer tunnel will be retained as a permanent surface feature to allow access for future maintenance activities.

2.10.4 The existing Waterbeach Water Recycling Centre (WRC) would cease to operate once the Waterbeach transfer pipeline is fully operational taking all Waterbeach flows to treatment. Waterbeach WRC currently discharges final effluent (up to 1350m<sup>3</sup>/day) into the adjacent Bannold Drain which runs parallel to Bannold Drove and is maintained by the Internal Drainage Board (IDB). Once the new pipeline is operational and the existing Waterbeach WRC decommissioned, the existing final effluent flow into Bannold Drain will cease.

## **2.11 Maintenance activities**

2.11.1 The type and frequency of maintenance activities will be defined as the design evolves.

### 3 Identification of NSN sites and Features Potentially Affected by the Proposed Development

#### 3.1 Zones of influence and impact pathways

3.1.1 The identification of NSN sites and their associated qualifying features that could potentially be affected by the Proposed Development has been undertaken by a two-stage approach:

- The first screening step based on proximity of the Proposed Development to NSN sites. These were identified using the MAGiC website – the Multi Agency Geographic Information for the Countryside at [www.magic.gov.uk](http://www.magic.gov.uk). The various layers showing all SACs and possible SACs, SPAs and potential SPAs, Ramsar sites and proposed Ramsar sites were identified, as was the SSSI Impact Zones layer. All NSN sites within 10km of the Proposed Development (or 30km for SAC sites designated for bat species) were identified, and the various Impact Zones considered, in relation to the various aspects of the Proposed Development.
- Following this, all Habitats Sites potentially connected by other, non-distance constrained pathways, were identified. This stage focussed on potential hydrological pathways, given the interface between the Proposed Development and the River Cam, and catchment-based pathways for example where there may be the potential for changes to groundwater that could affect NSN sites elsewhere in the catchment or where changes to air quality from emissions may affect habitats within the affected airshed.

#### 3.2 Data sources

3.2.1 The principal data sources used for the HRA screening are provided in Table 3.1. The full reference list is provided in References.

**Table 3-1: Principal data sources collected to inform the HRA screening**

Baseline item	Data source	Available at:
Designated sites	Extent and location of habitats site. The Multi Agency Geographic Information for the Countryside	<a href="http://www.magic.gov.uk">www.magic.gov.uk</a>
	Natural England Designated Sites View	<a href="https://designatedsites.naturalengland.org.uk/SiteSearch.aspx">https://designatedsites.naturalengland.org.uk/SiteSearch.aspx</a>
Proposed designations	Extent and location of habitats site. The Multi Agency Geographic Information for the Countryside	<a href="http://www.magic.gov.uk">www.magic.gov.uk</a>
Impact risk zones	Extent and location of zone. The Multi Agency Geographic Information for the Countryside	<a href="http://www.magic.gov.uk">www.magic.gov.uk</a>

Baseline item	Data source	Available at:
Ramsar sites	Ramsar Sites Information Services	<a href="https://rsis.ramsar.org/ris/752">https://rsis.ramsar.org/ris/752</a>
Hydrogeology	CWWTP Hydrogeological Impact Assessment March 2021	<a href="https://cwwtpr.com/wp-content/uploads/2021/03/CWWTPR-Stage-4-Final-Site-Selection-Hydrogeological-Impact-Assessment.pdf">https://cwwtpr.com/wp-content/uploads/2021/03/CWWTPR-Stage-4-Final-Site-Selection-Hydrogeological-Impact-Assessment.pdf</a>
NSN sites - SAC	SACs in the United Kingdom Standard Data Forms for designations	<a href="https://sac.jncc.gov.uk/">https://sac.jncc.gov.uk/</a>
Threats and pressures	Improvement programme for England's Natura 2000 sites (IPENS)	<a href="https://www.gov.uk/government/publications/improvement-programme-for-englands-natura-2000-sites-ipens/improvement-programme-for-englands-natura-2000-sites-ipens">https://www.gov.uk/government/publications/improvement-programme-for-englands-natura-2000-sites-ipens/improvement-programme-for-englands-natura-2000-sites-ipens</a>
Conservation objectives	Natural England Conservation objectives for NSN sites: East of England	<a href="http://publications.naturalengland.org.uk/category/6581547796791296">http://publications.naturalengland.org.uk/category/6581547796791296</a>

### 3.3 List of potentially affected sites

#### Habitat sites potentially affected by proximity to the Proposed Development

3.3.1 A map showing locations of NSN sites is located within Appendix A.

3.3.2 The ecological zones of influence (EZOI) (the 10km and 30km Proposed Development buffers) intersect a number of SSSI IRZs, although in the absence of cross-referencing in the Natural England spatial data it is not always clear which IRZ is related to which habitats site. Taking a precautionary approach, the sites which are scoped in at this stage and which have SSSI IRZs (all NSN/ Ramsar sites are also SSSIs) overlapping with the project's zones of influence are considered to be associated with the following NSN sites:

- Wicken Fen Ramsar site and Fenland SAC occupy the same land area/location (Wicken Fen Ramsar site is a component site within the larger SAC designation), approximately 4.72km from the closest point of the Proposed Development site. The site details are as follows:
  - Wicken Fen Ramsar site - reference UK11077, area 254.49 hectares – see <https://rsis.ramsar.org/RISapp/files/RISrep/GB752RIS.pdf>
  - Fenland SAC - reference UK0014782, area 619.41 hectares – see <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?euocode=UK0014782>

- Devil's Dyke SAC which lies 8.97km from the closest point of the Proposed Development site - reference UK0030037, area 8.25 hectares – see <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?eucode=UK0030037>
- There is also one SAC within 30km of the Proposed Development for which bats are the reason for designation:
  - Eversden and Wimpole Woods SAC – this site lies 14.97km from the closest point of the Proposed Development site, and the site details are as follows – reference UK0030331, area 66.22 hectares – see <https://sac.jncc.gov.uk/site/UK0030331>.

### **Habitat sites potentially affected due to hydrological connectivity**

- 3.3.3 The following NSN sites are located downstream of the Proposed Development, and hence are, or are likely to be, connected hydrologically through the River Cam. This pathway means that there is the potential for effects at the downstream sites.
- 3.3.4 The Wash and North Norfolk Coast SAC, The Wash SPA and The Wash Ramsar site all overlap at the location where the River Great Ouse meets the sea, approximately 70.3 km to the north of the Proposed Development. The individual site details are as follows:
- The Wash and North Norfolk Coast SAC – reference UK17075, area 107718 hectares – see <https://sac.jncc.gov.uk/site/UK0017075>
  - The Wash SPA- reference UK9008021, area 62044 hectares – see <https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9008021.pdf>
  - The Wash Ramsar site – reference UK11072, area 62212 hectares – see <https://rsis.ramsar.org/RISapp/files/RISrep/GB395RIS.pdf>
  - Ouse Washes SAC – reference UK0013011, area 338 hectares – see [Ouse Washes - Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk/ouse-washes-special-areas-of-conservation)
  - [Ouse Washes SPA – reference UK9008041, area 2499 hectares – see UK9008041.pdf \(jncc.gov.uk\)](https://jncc.gov.uk/ouse-washes-spa)
  - [Ouse Washes Ramsar site – reference UK11051 – area 2469 hectares – see https://jncc.gov.uk/jncc-assets/RIS/](https://jncc.gov.uk/ouse-washes-ramsar-site)
- 3.3.5 Plans showing the Proposed Development in relation to the above NSN sites can be found in Appendix A.

## **3.4 Reasons for designation of the habitat sites**

- 3.4.1 The following sections set out the reasons for the designation of NSN/ Ramsar sites identified within the EZoI for the Proposed Development.

### **Fenland SAC**

- 3.4.2 Annex I habitats that are a primary reason for selection of this site:

- 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*). Fenland contains, particularly at Chippenham Fen, one of the most extensive examples of the tall herb-rich East Anglian type of M24 *Molinia caerulea* – *Cirsium dissectum* fen-meadow. It is important for the conservation of the geographical and ecological range of the habitat type, as this type of fen-meadow is rare and ecologically distinctive in East Anglia.
- 7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (priority feature). The individual sites within Fenland cSAC each hold large areas of calcareous fens, with a long and well-documented history of regular management. There is a full range from species-poor *Cladium*-dominated fen to species-rich fen with a lower proportion of *Cladium* and containing such species as black bog-rush *Schoenus nigricans*, tormentil *Potentilla erecta* and meadow thistle *Cirsium dissectum*. There are good transitions to purple moor-grass *Molinia caerulea* and rush pastures, all set within a mosaic of reedbeds and wet pastures.

#### 3.4.3 Annex II species present as a qualifying feature, but not a primary reason for site selection

- 1149 Spined loach *Cobitis taenia*
- 1166 Great crested newt *Triturus cristatus*

### **Wicken Fen Ramsar site**

#### 3.4.4 Qualifying features for which the Wicken Fen Ramsar has been designated:

- Ramsar criterion 1 - one of the most outstanding and representative remnants of the East Anglian peat fens. The area is one of the few which has not been drained. Traditional management has created a mosaic of habitats from open water to sedge and litter fields.
- Ramsar criterion 2 - the site supports one endangered species of Red Data Book plant, the fen violet *Viola persicifolia*, which survives at only two other sites in Britain. It also contains eight nationally scarce plants and 121 Red Data Book invertebrates.

### **Devil's Dyke SAC**

#### 3.4.5 Annex I habitats that are a primary reason for selection of this Devil's Dyke SAC<sup>7</sup>:

- 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (important orchid sites). This site hosts the priority habitat type "orchid rich sites". Devil's Dyke consists of a mosaic of CG3 *Bromus erectus* and CG5 *Bromus erectus* – *Brachypodium pinnatum* calcareous grasslands. It is the only known UK semi-natural dry grassland site for lizard orchid *Himantoglossum hircinum*.

<sup>7</sup> JNCC (2015 Devils Dyke SAC Standard Information Form [online]. Available at: <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030037.pdf>

## Eversden and Wimpole Woods SAC

3.4.6 Annex II species as reason for selection of this site are 1308 Barbastelle bat *Barbastella barbastellus*:

- The site comprises a colony of barbastelle bats *Barbastella barbastellus* which is associated with a mixture of ancient coppice woodland (Eversden Wood) and high forest woods likely to be of more recent origin (Wimpole Woods)<sup>8</sup>.

## The Wash and North Norfolk Coast SAC

3.4.7 Annex I habitats that are a primary reason for selection of this site<sup>9</sup>:

- 1110 Sandbanks which are slightly covered by sea water all the time. On this site sandy sediments occupy most of the subtidal area, resulting in one of the largest expanses of sublittoral sandbanks in the UK. It provides a representative example of this habitat type on the more sheltered east coast of England. The subtidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Sublittoral communities present include large dense beds of brittlestars *Ophiothrix fragilis*. Species include the sand-mason worm *Lanice conchilega* and the tellin *Angulus tenuis*. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. The subtidal sandbanks provide important nursery grounds for young commercial fish species, including plaice *Pleuronectes platessa*, cod *Gadus morhua* and sole *Solea solea*.
- 1140 Mudflats and sandflats not covered by seawater at low tide. The Wash, on the east coast of England, is the second-largest area of intertidal flats in the UK. The sandflats in the embayment of the Wash include extensive fine sands and drying banks of coarse sand, and this diversity of substrates, coupled with variety in degree of exposure, means that there is a high diversity relative to other east coast sites. Sandy intertidal flats predominate, with some soft mudflats in the areas sheltered by barrier beaches and islands along the north Norfolk coast. The biota includes large numbers of polychaetes, bivalves and crustaceans. Salinity ranges from that of the open coast in most of the area (supporting rich invertebrate communities) to estuarine close to the rivers. Smaller, sheltered and diverse areas of intertidal sediment, with a rich variety of communities, including some eelgrass *Zostera* spp. beds and large shallow pools, are protected by the north Norfolk barrier islands and sand spits.
- 1160 Large shallow inlets and bays. The Wash is the largest embayment in the UK, and represents Large shallow inlets and bays on the east coast of England. It is connected via sediment transfer systems to the north Norfolk coast. Together, the Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include

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<sup>8</sup> JNCC (2015) Eversden and Wimpole Woods Standard Data Form [online]. Available at: <https://sac.jncc.gov.uk/site/UK0030331>

<sup>9</sup> JNCC (2015) The Wash and North Norfolk Coast SAC Standard Data Form [online]. Available at: <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0017075.pdf>



extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Sublittoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and 1365 Common seal *Phoca vitulina*.

- 1170 Reefs. The Wash is the largest embayment in the UK with extensive areas of subtidal mixed sediment. In the tide-swept approaches to the Wash, with a high loading of suspended sand, the relatively common tube-dwelling polychaete worm *Sabellaria spinulosa* forms areas of biogenic reef. These structures are varied in nature, and include reefs which stand up to 30 cm proud of the seabed and which extend for hundreds of metres (Foster-Smith & Sotheran 1999). The reefs are thought to extend into The Wash where super-abundant *S. spinulosa* occurs and where reef-like structures such as concretions and crusts have been recorded. The site and its surrounding waters are considered particularly important as this is the only currently known location of well-developed stable *Sabellaria* reef in the UK. The reefs are particularly important components of the sublittoral as they are diverse and productive habitats which support many associated species (including epibenthos and crevice fauna) that would not otherwise be found in predominantly sedimentary areas. As such, the fauna is quite distinct from other biotopes found in the site. Associated motile species include large numbers of polychaetes, mysid shrimps, the pink shrimp *Pandalus montagui*, and crabs. *S. spinulosa* is considered to be an important food source for the commercially important pink shrimp *P. montagui* (see overview in Holt et al. 1998).
- 1310 *Salicornia* and other annuals colonizing mud and sand. The largest single area of this vegetation in the UK occurs at this site on the east coast of England, which is one of the few areas in the UK where saltmarshes are generally accreting. The proportion of the total saltmarsh vegetation represented by *Salicornia* and other annuals colonising mud and sand is high because of the extensive enclosure of marsh in this site. The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities.
- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). This site on the east coast of England is selected both for the extensive ungrazed saltmarshes of the North Norfolk Coast and for the contrasting, traditionally grazed saltmarshes around the Wash. The Wash saltmarshes represent the largest single area of the habitat type in the UK. The Atlantic salt meadows form part of a sequence of vegetation types that are unparalleled among coastal sites in the UK for their diversity and are amongst the most important in Europe. Saltmarsh swards dominated by sea-lavenders *Limonium* spp. are

particularly well-represented on this site. In addition to typical lower and middle saltmarsh communities, in North Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.

- 1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The Wash and North Norfolk Coast, together with the North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 cm high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea-purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea-purslane community.

3.4.8 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- 1150 Coastal lagoons \* Priority feature

3.4.9 Annex II species that are a primary reason for selection of this site:

- 1365 Harbour seal *Phoca vitulina*. The Wash, on the east coast of England, is the largest embayment in the UK. The extensive intertidal flats here and on the North Norfolk Coast provide ideal conditions for Harbour seal *Phoca vitulina* breeding and hauling out. This site is the largest colony of common seals in the UK, with some 7% of the total UK population.

3.4.10 Annex II species present as a qualifying feature, but not a primary reason for site selection:

- 1355 Otter *Lutra lutra*

### **The Wash SPA**

- Article 4.1 Qualification (79/409/EEC)
  - During the breeding season the area regularly supports:
    - Little tern *Sterna albifrons*
    - Common tern *Sterna hirundo*
  - Over winter the area regularly supports:
    - Bewick's swan *Cygnus columbianus bewickii*
    - Bar-tailed godwit *Limosa lapponica*
- Article 4.2 Qualification (79/409/EEC)
  - Over winter the area regularly supports:

- Pintail *Anas acuta*
  - Wigeon *Anas penelope*
  - Gadwall *Anas strepera*
  - Pink-footed goose *Anser brachyrhynchus*
  - Turnstone *Arenaria interpres*
  - Brent goose *Branta bernicla bernicla*
  - Goldeneye *Bucephala clangula*
  - Sanderling *Calidris alba*
  - Dunlin *Calidris alpina alpina*
  - Knot *Calidris canutus*
  - Eurasian oystercatcher *Haematopus ostralegus*
  - Black-tailed godwit *Limosa limosa islandica*
  - Common scoter *Melanitta nigra*
  - Curlew *Numenius arquata*
  - Grey plover *Pluvialis squatarola*
  - Shelduck *Tadorna tadorna*
  - Redshank *Tringa totanus*
- Article 4.2 Qualification (79/409/EEC): An Internationally Important Assemblage of Birds
    - Over winter the area regularly supports 400367 waterfowl (5-year peak mean 1991/92-1995/96) Including:
      - Bewick's swan *Cygnus columbianus bewickii*
      - Pink-footed goose *Anser brachyrhynchus*
      - Brent goose *Branta bernicla bernicla*
      - Shelduck *Tadorna tadorna*
      - Wigeon *Anas penelope*
      - Gadwall *Anas strepera*
      - Pintail *Anas acuta*
      - Common scoter *Melanitta nigra*
      - Goldeneye *Bucephala clangula*
      - Eurasean oystercatcher *Haematopus ostralegus*
      - Grey plover *Pluvialis squatarola*
      - Knot *Calidris canutus*
      - Sanderling *Calidris alba*

- Dunlin *Calidris alpina alpina*
- Black-tailed godwit *Limosa limosa islandica*
- Bar-tailed godwit *Limosa lapponica*
- Curlew *Numenius arquata*
- Redshank *Tringa totanus*
- Turnstone *Arenaria interpres*

### The Wash Ramsar site

#### 3.4.11 Qualifying features for which the site has been designated<sup>10</sup>:

- 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 - Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.
- Ramsar criterion 5 – Assemblages of international importance:
  - Species with peak counts in winter:
    - 292541 waterfowl (5-year peak mean 1998/99-2002/2003)
- Ramsar criterion 6 – Species/populations occurring at levels of international importance.
  - Species with peak counts in spring/autumn:
    - Eurasian oystercatcher *Haematopus ostralegus ostralegus*
    - Grey plover *Pluvialis squatarola*
    - Red knot *Calidris canutus islandica*
    - Sanderling *Calidris alba*
  - Species with peak counts in winter:
    - Black-headed gull *Larus ridibundus*
    - Common eider *Somateria mollissima mollissima*
    - Bar-tailed godwit *Limosa lapponica lapponica*
    - Common shelduck *Tadorna tadorna*
    - Dark-bellied brent goose *Branta bernicla bernicla*
    - Dunlin *Calidris alpina alpina*

<sup>10</sup> JNCC (2008) The Wash Information Sheet on Ramsar Wetlands Version 3.0, 13/06/2008 [online] Available at: <https://jncc.gov.uk/jncc-assets/RIS/UK11072.pdf>

- Pink-footed goose *Anser brachyrhynchus*
- Species/populations identified subsequent to designation for possible future consideration under criterion 6:
- Species with peak counts in spring/autumn:
  - Black-tailed godwit *Limosa limosa islandica*
  - Ringed plover *Charadrius hiaticula*
- Species with peak counts in winter:
  - European golden plover *Pluvialis apricaria altifrons*
  - Northern lapwing *Vanellus vanellus*

### **Ouse Washes SAC**

3.4.12 Annex II habitats that are a primary reason for selection of this site:

- 1149 Spined Loach *Cobitis taenia*

### **Ouse Washes SPA**

- Ouse Washes qualifies under Article 4.1 (79/409/EEC) because over winter the area regularly supports
  - Northern harrier *Circus cyaneus*
  - Tundra swan *Cygnus columbianus bewickii*
  - Whooper swan *Cygnus cygnus*
  - Ruff *Philomachus pugnax*
- Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC) because during the breeding season the area regularly supports:
  - Northern shoveler *Anas clypeata*
  - Mallard *Anas platyrhynchos*
  - Garganey *Anas querquedula*
  - Gadwall *Anas strepera*
  - Black-tailed Godwit *Limosa limosa*
  - Over winter the area regularly supports:
    - Northern pintail *Anas acuta*
    - Northern shoveler *Anas clypeata*
    - Eurasian teal *Anas crecca*
    - Eurasian wigeon *Anas penelope*
    - Gadwall *Anas strepera*
    - Common pochard *Aythya farina*
    - Tufted duck *Aythya fuligula*
    - Mute swan *Cygnus olor*

- Eurasian coot *Fulica atra*
- Great cormorant *Phalacrocorax carbo*
- Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC): an internationally important assemblage of birds because over winter the area regularly supports 64428 waterfowl including:
  - Great cormorant *Phalacrocorax carbo*
  - Tundra swan *Cygnus columbianus bewickii*
  - Whooper swan *Cygnus cygnus*
  - Eurasian wigeon *Anas penelope*
  - Gadwall *Anas strepera*
  - Eurasian teal *Anas crecca*
  - Northern pintail *Anas acuta*
  - Northern shoveler *Anas clypeata*
  - Common pochard *Aythya farina*
  - Tufted duck *Aythya fuligula*
  - Eurasian coot *Fulica atra*
  - Ruff *Philomachus pugnax*

### Ouse Washes Ramsar site

#### 3.4.13 Qualifying features for which the site has been designated:

- Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.
- Ramsar Criterion 2: The site supports several nationally scarce plants, including small water pepper *Polygonum minus*, whorled water-milfoil *Myriophyllum verticillatum*, greater water parsnip *Sium latifolium*, river water dropwort *Oenanthe fluviatilis*, fringed water-lily *Nymphoides peltata*, long-stalked pondweed *Potamogeton praelongus*, hair-like pondweed *Potamogeton trichoides*, grass-wrack pondweed *Potamogeton compressus*, tasteless water-pepper *Polygonum mite* and marsh dock *Rumex palustris*. 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.
- Ramsar criterion 5: Assemblages of international importance: Species with peak counts in winter: 59133 waterfowl (5 year peak mean 1998/99-2002/2003)
  - Qualifying Species/populations (as identified at designation):
  - Species with peak counts in winter:
    - Tundra swan *Cygnus columbianus bewickii*

- Whooper swan *Cygnus cygnus*,
- Eurasian wigeon *Anas penelope*
- Gadwall *Anas strepera strepera*
- Eurasian teal *Anas crecca*
- Northern pintail *Anas acuta*
- Northern shoveler *Anas clypeata*
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
- Species with peak counts in winter:
  - Mute swan *Cygnus olor*
  - Common pochard *Aythya ferina*
  - Black-tailed godwit *Limosa limosa*

3.4.14 Table 3.2 below sets out the details of the above referenced sites and environmental pathways between the identified site and the Proposed Development.

**Table 3-2: Details of NSN sites considered to be connected by a pathway**

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
<b>Wicken Fen</b>	Ramsar site	4.72km northeast of the Waterbeach pipeline. 8.9km north-east of the new WWTP site area. 9.61km north-east of treated effluent transfer tunnel or pipeline and associated potential discharge location. 10.14km north-east of the wastewater transfer tunnel.	Supports one of the most outstanding remnants of the East Anglian peat fens. The area is one of the few which has not been drained. Traditional management has created a mosaic of habitats from open water to sedge and litter fields. Also designated as the site supports one species of British Red Data Book (RDB) plant, fen violet <i>Viola persicifolia</i> , which survives at only two other sites in Britain. It also contains eight nationally scarce plants and 121 British RDB invertebrates	No hydrological impact expected.  The Cambridge Water Cycle Strategy 2011 (add reference) states that analysis of hydrology indicates that Wicken Fen is topographically higher than the Cam and drains via Wicken Lode then Burwell Lode towards it. As the Cam does not feed it, there are no associated risks, which could arise from additional sewage effluent discharge at Cambridge irrespective of any changes in effluent flow or quality from that site and no ecological impact is expected to occur. Therefore, Wicken Fen Ramsar site and Fenland SAC will not be considered further within this Stage 1 screening assessment and will not progress to Stage 2: AA.  Policies are included in the Local Plan to ensure that developments protect water quality, and ensure that the appropriate waste water infrastructure is confirmed as being available prior to development being given consent. Policies also require that appropriate pollution control measures are included on sites. Development at all the proposed new communities must exceed the Building Regulations and meet Code for	N/A



Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
				Sustainable Homes Level 4 for water efficiency. This will ensure that stringent water efficiency measures are implemented as an integral part of development. The Council is working with Anglian Water and Cambridge Water to explore infrastructure requirements of site allocations and ensure developments can be appropriately serviced. For these reasons the Local Plan is not likely to have any significant effects alone or in combination with other plans. For similar reasons the screening of the East Cambridgeshire Local Plan where the site is located, also concluded there would be no likely significant effects alone or in combination with other plans.	
<b>Fenland</b>	SAC	4.72km northeast of the Waterbeach pipeline. 8.9km north-east of the new WWTP site area. 9.61km north-east of treated effluent transfer tunnel or pipeline and associated potential discharge location.	Designated primarily for presence of Molinia meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> ) and Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> habitats, with spined loach <i>Cobitis taenia</i> and great crested newt also present as qualifying features.	No hydrological connection located, as is topographically higher than the Cam and drains via Wicken Lode then Burwell Lode towards it. As the Cam does not feed it, there are no associated risks, which could arise from additional sewage effluent discharge at Cambridge irrespective of any changes in effluent flow or quality from that site and no ecological impact is expected to occur. Therefore, Wicken Fen Ramsar site and Fenland SAC will not be	N/A

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
		10.14km north-east of the wastewater transfer tunnel.		<p>considered further within this Stage 1 screening assessment and will not progress to Stage 2: AA.</p> <p>Policies are included in the Local Plan to ensure that developments protect water quality, and ensure that the appropriate waste water infrastructure is confirmed as being available prior to development being given consent. Policies also require that appropriate pollution control measures are included on sites.</p> <p>Development at all the proposed new communities must exceed the Building Regulations and meet Code for Sustainable Homes Level 4 for water efficiency. This hydrological impact expected.</p> <p>The Cambridge Water Cycle Strategy 2011 (add reference) states that analysis of hydrology indicates that Wicken Fen, in which Fenland SAC is located, will ensure that stringent water efficiency measures are implemented as an integral part of development. The Council is working with Anglian Water and Cambridge Water to explore infrastructure requirements of site allocations and ensure developments can be appropriately serviced. For these</p>	

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
				reasons the Local Plan is not likely to have any significant effects alone or in combination with other plans. For similar reasons the screening of the East Cambridgeshire Local Plan where the site is located, also concluded there would be no likely significant effects alone or in combination with other plans.	
<b>Devils Dyke</b>	SAC	9.76km east of the Waterbeach pipeline 8.97km east of the new WWTP site area. 10.95km east of the wastewater transfer tunnel. 10.95km east of the treated effluent transfer tunnel or pipeline	Designated for the presence of semi-natural dry grasslands and scrubland on calcareous substrates. The site consists of a mosaic of CG3 <i>Bromus erectus</i> and CG5 <i>Bromus erectus – Brachypodium pinnatum</i> calcareous grasslands. Devils Dyke is classified as priority habitat “orchid rich sites”. It is the only known UK semi-natural dry grassland site for lizard orchid <i>Himantoglossum hircinum</i> .	No hydrological impact expected. Potential for air quality impact on designated site qualifying features, due to the vehicular emissions of construction vehicles using the road network adjacent to the SAC.	N/A
<b>Eversden and Wimpole Woods</b>	SAC	16.90km northeast of the Waterbeach pipeline 16.46km south-west of the new WWTP site area 15.2km south-west of the wastewater transfer tunnel	The site comprises a mixture of ancient coppice woodland (Eversden Wood) and high forest woods likely to be of more recent origin (Wimpole Woods). A colony of barbastelle bats <i>Barbastella barbastellus</i> (Annex II species 1308 Barbastelle) is associated with the trees in Wimpole Woods. These trees are used as a summer maternity roost where the female bats gather to give birth and rear their young. Most of the roost sites are	Potential for impacts to bat foraging and commuting. Impacts could be through changes to habitat or disturbance from lighting during construction or operation.	N/A

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
		16.0km east of the treated effluent transfer tunnel or pipeline	within tree crevices. The bats also use the site as a foraging area. Some of the woodland is also used as a flight path when bats forage outside the site.		
<b>The Wash and North Norfolk Coast</b>	SAC	70.3km downstream of the treated effluent transfer tunnel or pipeline	<p>The Wash and North Norfolk Coast Special Area of Conservation (SAC) encompasses the largest embayment in the UK, as well as extensive intertidal sand and mudflats, subtidal sandbanks, biogenic and geogenic reef, saltmarsh and a barrier beach system unique in the UK.</p> <p>Under Article 4(4) of the Directive (92/43/EEC) the Annex I habitats that are a primary reason for selection of this site include: 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 colonizing mud and sand; Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>); Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>). Coastal lagoons form a Priority feature within this SAC. Annex II species that are a primary reason for selection of this site is the Harbour seal (<i>Phoca</i></p>	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	N/A

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
			<i>vitulina</i> ) with the Otter ( <i>Lutra lutra</i> ) present but not as a primary reason for site selection.		
<b>The Wash</b>	SPA	70.3km downstream of the treated effluent transfer tunnel or pipeline	<p>The Wash is numerically the most important area in Britain for wintering waterfowl, taking waders and wildfowl together. It is also the most important area in Britain in early autumn for moulting waders. The Wash is important also to certain wintering passerines, to breeding waders and terns, and to certain seabirds.</p> <p>The Wash qualifies under Article 4(1) because it supports 30 breeding pairs of little terns <i>Sterna albifrons</i> (2% of the British population) and 220 pairs of common terns <i>Sterna hirundo</i> (2%); and because it supports 130 Bewick's swans <i>Cygnus cygnus</i> (3%) in winter.</p> <p>The Wash qualifies under Article 4(2) as an internationally important wetland by supporting in winter an average of 163,000 waders and also 51,000 wildfowl.</p>	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	N/A
<b>The Wash</b>	Ramsar	70.3km downstream of the treated effluent transfer tunnel or pipeline	<p>A vast intertidal embayment incorporating one of the largest and most important areas of estuarine mudflats, sandbanks and saltmarsh in Britain.</p> <p>Counts of wintering waterbirds reach 320,673 individuals and include nationally</p>	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	N/A

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
			and internationally important numbers of numerous species, notably up to 17,000 passerines (perching songbirds). The site is also of outstanding international importance for passage birds, notable waders, and supports various breeding birds, an important shell fishery, and the largest breeding colony in Europe of the seal <i>Phoca vitulina</i> .		
Ouse Washes	SAC	14.1 km downstream of the treated effluent transfer tunnel or pipeline	The Ouse Washes incorporates inland water bodies, of both running and standing water, bogs, marshes water fringed vegetation, fens and improved grassland and is designated for Annex II species spined loach <i>Cobitis taenia</i> populations within the River Ouse catchment. The Counter Drain, with its clear water and abundant macrophytes, is particularly important, and a healthy population of spined loach is known to occur.	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	River Great Ouse Catchment, connected to the river Cam.
Ouse Washes	SPA	14.1 km downstream of the treated effluent transfer tunnel or pipeline	Ouse Washes qualifies under Article 4.1 (79/409/EEC) because over winter the area regularly supports 1.6% of the GB population of Northern harrier ( <i>Circus cyaneus</i> ), 64.4% of the GB population of Tundra Swan ( <i>Cygnus columbianus bewickii</i> ), 17.2% of the GB population of Whooper swan ( <i>Cygnus cygnus</i> ) and	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	River Great Ouse Catchment, connected to the

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
			<p>19.6% of the GB population of Ruff (<i>Philomachus pugnax</i>).</p> <p>Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC) because during the breeding season the area regularly supports 15.5% of the GB population of Northern shoveler (<i>Anas clypeata</i>), 0.9% of the GB population of Mallard (<i>Anas platyrhynchos</i>), 93.3% of the GB population of Garganey (<i>Anas querquedula</i>), 14.4% of the GB population of Gadwall (<i>Anas strepera</i>) and 89.7% of the GB population of Black-tailed Godwit (<i>Limosa limosa</i>).</p> <p>Over winter the area regularly supports 2.9% of the total population of Northern pintail (<i>Anas acuta</i>), 1.7% of the total population of Northern shoveler (<i>Anas clypeata</i>), 0.8% of the total population of Eurasian teal (<i>Anas crecca</i>), 2.4% of the total population of Eurasian wigeon (<i>Anas Penelope</i>), 4.2% of the GB population of Gadwall (<i>Anas strepera</i>), 7.2% of the GB population of Common pochard (<i>Aythya farina</i>), 1.6% of the GB population of Tufted duck (<i>Aythya fuligula</i>), 2.4% of the GB population of Mute swan (<i>Cygnus olor</i>), 1.9% of the GB population of Eurasian coot (<i>Fulica atra</i>) and 2% of the</p>		river Cam.

Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
			<p>GB population of Great cormorant (<i>Phalacrocorax carbo</i>).</p> <p>Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC): an internationally important assemblage of birds because over winter the area regularly supports 64428 waterfowl including Great cormorant (<i>Phalacrocorax carbo</i>), Tundra swan (<i>Cygnus columbianus bewickii</i>), Whooper swan (<i>Cygnus cygnus</i>), Eurasian wigeon (<i>Anas Penelope</i>), Gadwall (<i>Anas strepera</i>), Eurasian teal (<i>Anas crecca</i>), Northern pintail (<i>Anas acuta</i>), Northern shoveler (<i>Anas clypeata</i>), Common pochard (<i>Aythya farina</i>), Tufted duck (<i>Aythya fuligula</i>), Eurasian coot (<i>Fulica atra</i>) and Ruff (<i>Philomachus pugnax</i>).</p>		
<b>Ouse Washes</b>	Ramsar	14.1 km downstream of the treated effluent transfer tunnel or pipeline	This site is an area of seasonally flooded washland habitat managed in a traditional agricultural manner. The washlands support nationally and internationally important numbers of wintering waterfowl, regularly exceeding 20,000 individuals including wintering swans and duck species and nationally important numbers of breeding waterfowl. The site is also of note for the	Potential for hydrological/water quality effects as the site is downstream in the catchment of the River Cam.	River Great Ouse Catchment, connected to the river Cam.



Site Name	Designation	Distance and direction from EIA scoping boundary	Reason for designation	Pathways to Draft DCO Limits boundary	SSSI impact risk zone
			large area of unimproved neutral grassland communities which it holds, and for the richness of the aquatic flora within the associated watercourses.		

### 3.5 Conservation objectives, site sensitivities and vulnerabilities

3.5.1 Relevant conservation objectives and management targets for the sites within the EZoI are subject to an initial assessment below in order to establish potential site sensitivities further and identify vulnerability to any effects from the Proposed Development.

#### Fenland SAC

3.5.2 Fenland is a multi-site SAC in and was designated to protect three wetland sites:

- Chippenham Fen (52.298°N 0.415°E)
- Wicken Fen (52.307°N 0.278°E)
- Woodwalton Fen (52.445°N 0.193°W)

3.5.3 The conservation objectives of the Fenland SAC site are stated to be:

- Ensure that the integrity of the site is maintained or restored as appropriate and ensure that the site contributes to achieving the aims of the Wild Birds Directive by maintaining or restoring:
  - The extent and distribution of the habitats of the qualifying features;
  - The structure and function of the habitats of the qualifying features;
  - The supporting processes on which the habitats of the qualifying features rely;
  - The population of each of the qualifying features; and
  - The distribution of the qualifying features within the site.

#### ***Threats, pressures and activities with impacts on Fenland SAC***

3.5.4 The most important impacts and activities with high effect on the Fenland SAC are indicated as:

- Air pollution, air-borne pollutants – high rank
- Pollution to groundwater (point sources and diffuse sources) – high rank
- Human induced changes in hydraulic conditions – high rank

3.5.5 Table 3.3 provides a summary of Fenland SAC pressures and threats.

**Table 3.3: Fenland SAC pressures/ threats**

Priority and issue	Feature affected	Pressure or Threat	Measure
Air Pollution: risk of atmospheric nitrogen deposition	H6410 Purple moor-grass meadows, H7210 Calcium-rich fen dominated by great fen sedge (saw sedge)	Pressure/ Threat	Further investigate potential atmospheric nitrogen impact on the site

(Source: Natural England, 2015 IPENS site improvement plan)

3.5.6 Consequently, nitrogen oxide emissions and potential groundwater quality impacts related to the Proposed Development are of relevance to the assessment for Fenland SAC.

**Wicken Fen SSSI unit information (Natural England, 202011)**

3.5.7 The condition assessment for units 1 and 2 are both listed as ‘Unfavourable recovering’ and that ‘the general consensus regarding management is that areas of Sedge Fen and Verrall’s Fen are gradually becoming too dry and an input of calcareous, low nutrient status water is needed to maintain the notified botanical communities and invertebrate habitat’. The site is the subject of a Water Level Management Plan (WLMP) and work to implement this has commenced.

3.5.8 The condition assessment for units 3, 4 and 5 are all listed as ‘Favourable condition’. The assessment states that ‘the breadth of surveys completed indicate general good health in all constituent habitats, and for individual species e.g. spined loach’.

**Wicken Fen Ramsar site**

3.5.9 Information for Wicken Fen Ramsar<sup>12</sup> lists only flooding as the factor adversely affecting the ecological character. This factor includes changes in land/ water use and development projects (reservoir/barrage/dam).

3.5.10 The overlap between Wicken Fen Ramsar site and the related part of the Fenland SAC means that the information in section 3.5.3 can be taken to apply to this habitats site.

**Devil’s Dyke SAC**

3.5.11 Devils Dyke SAC is a 7.68ha site designated in 2005. It contains semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) for which this is considered to be one of the best areas in the United Kingdom. It is considered to be the priority sub-type of important orchid site<sup>13</sup>.

3.5.12 Conservation objectives<sup>14</sup> for this SAC are:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:
  - The extent and distribution of qualifying natural habitats;

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<sup>11</sup> Natural England (2020) Condition of SSSI Units for Site Wicken Fen SSSI [online] Available at: <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1003251&ReportTitle=Wicken Fen SSSI>

<sup>12</sup> Ramsar (2005) Information Sheet on Ramsar Wetlands (RIS) for Wicken Fen [online] Available at: <https://rsis.ramsar.org/RISapp/files/RISrep/GB752RIS.pdf>

<sup>13</sup> JNCC (2015) Natura 2000 Standard data Form [online] Available at: <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030037.pdf>

<sup>14</sup> Natural England (2014) European Site Conservation Objectives for Devils Dyke SAC (UK0030037) [online] Available at: <http://publications.naturalengland.org.uk/publication/5870018029944832?category=6581547796791296>

- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

**Threats, pressures and activities with impacts on Devil’s Dyke SAC**

3.5.13 The most important impacts and activities with high effect on Devil’s Dyke:

- air pollution, air-borne pollutant (atmospheric nitrogen) – high rank; and
- biocenotic evolution, succession – high rank

3.5.14 The first of these is considered to be relevant to the current assessment. Table 3.4 provides a summary of Devil’s Dyke SAC pressures and threats.

**Table 3-4: Devil’s Dyke SAC pressures/ threats**

Priority and issue	Feature affected	Pressure or Threat	Measure
<b>Air Pollution: risk of atmospheric nitrogen deposition</b>	H6210 Dry grasslands and scrublands on chalk or limestone (important orchid sites)	Threat	Investigate potential air pollution impacts

(Source: Natural England, 2015 IPENS site improvement plan)

**Devil’s Dyke SSSI unit information (Natural England, 202015)**

3.5.15 The SSSI condition assessment for units 1 (broadleaved, mixed and yew woodland – lowland) and 3 (calcareous grassland – lowland) is listed as ‘favourable’. Unit 1 passed assessment criteria related to ‘extent of the important plant communities (woodland and scrub), maintenance of mature/near veteran trees, presence of young trees to replace these in time, presence of large roots covered in mosses, some open scrub and plentiful dead wood’. Criteria concerned with open space and domination of trees and shrubs local to the area were less clear. Unit 3 met all site-specific standards defining favourable condition which included ‘extent of important plant communities, proportion of herbs in the sward, frequency of the characteristic plant species, limited coverage by trees and scrub, limited agricultural weeds and other coarse species as well as having an appropriate sward height and a lack of plant litter’.

3.5.16 The SSSI condition assessment for units 2, 4, 5, 6 and 7 (all calcareous grassland – lowland) is recorded as ‘Unfavourable - recovering’. A Higher-Level Stewardship (HLS) agreement is now in place for units 6 and 7 which allows for grazing, cutting and scrub management.

3.5.17 The IPENS information is not considered to be relevant to the current assessment, but in conclusion air pollution, air-borne pollutants/ air pollution (risk of atmospheric

<sup>15</sup> Natural England (2020) Condition of SSSI Units for Devil’sDyke SSSI [online] Available at: [https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1000404&ReportTitle=Devil%27s Dyke SSSI](https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1000404&ReportTitle=Devil%27s%20Dyke%20SSSI)

nitrogen deposition) is considered to be of relevance to this screening assessment in relation to Devil’s Dyke SAC.

### **Eversden and Wimpole Woods SAC**

3.5.18 This SAC covers a total area of approximately 66 ha, located in the lowland plateau of the Bedfordshire and Cambridgeshire Claylands National Character Area close to Wimpole, approximately 8 miles south-west of Cambridge. It comprises a mixture of ancient coppice woodland (Eversden Wood) and high forest woodland, likely to be of more recent origin, now being part of the formal designed parkland around Wimpole Hall (Wimpole Wood)<sup>16</sup>.

3.5.19 Conservation objectives are:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring<sup>17</sup>;
- The extent and distribution of the habitats of qualifying species
- The structure and function of the habitats of qualifying species
- The supporting processes on which the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

#### **Threats, pressures and activities with impacts on the site**

3.5.20 The most important impacts and activities with high effect on SAC are listed as (JNCC, 2015):

- Unknown (toxic organic chemicals) - high rank
- Change in biotic condition – high rank
- Air pollution, air borne pollutants – high rank
- Forest and Plantation management & use - high rank

3.5.21 Table 3.5 provides a summary of Eversden and Wimpole SAC SAC pressures and threats.

**Table 3.5: Eversden and Wimpole SAC pressures/ threats**

Priority and issue	Feature affected	Pressure or Threat	Measure
Feature location/extent/conditions unknown	S1308:Barbastelle bat	Pressure/ Threat	Survey additional areas for barbastelle bats

<sup>16</sup> Natural England (2015) European Site Conservation Objectives: supplementary advice on conserving and restoring site features Eversden and Wimpole Woods Special Area of Conservation (SAC) Site code: UK0030331[online] available at: <http://publications.naturalengland.org.uk/file/6307779568730112>.

<sup>17</sup> Natural England (2015) European Site Conservation Objectives for Eversden and Wimpole Woods SAC [ONLINE] Available at: <http://publications.naturalengland.org.uk/file/6307779568730112>

Priority and issue	Feature affected	Pressure or Threat	Measure
Offsite habitat availability/management	S1308:Barbastelle bat	Pressure/ Threat	Research to identify areas and habitats used by the bats outside the SAC, and secure suitable management in order to maintain, enhance and increase the supporting habitat
Forestry and woodland management	S1308:Barbastelle bat	Threat	Manage the woodland appropriately
Air Pollution: risk of atmospheric nitrogen deposition	S1308:Barbastelle bat	Pressure/ Threat	Further investigate potential atmospheric nitrogen impact on the site

(Source: (Natural England, 2015)IPENS site improvement plan)

### The Wash and North Norfolk Coast SAC

3.5.22 The Wash and North Norfolk Coast SAC is a marine site designated in 2005. It encompasses the largest embayment in the UK, as well as extensive intertidal sand and mudflats, subtidal sandbanks, biogenic and geogenic reef, saltmarsh and a barrier beach system unique in the UK. It includes the following overlapping protected areas<sup>18</sup>:

- The Wash Special Protection Area (SPA);
- North Norfolk Coast SAC and SPA;
- Gibraltar Point SPA and Inner Dowsing; and
- Race Bank and North Ridge SAC

3.5.23 The conservation objectives of The Wash and North Norfolk Coast SAC site are <sup>19</sup>:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:
  - the extent and distribution of qualifying natural habitats and habitats of qualifying species;
  - the structure and function (including typical species) of qualifying natural habitats;

<sup>18</sup> The Wash & North Norfolk Coast SAC Factsheet [online]. Available at: [MMO Report Style and GIS Guide \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/364443/MMO_Report_Style_and_GIS_Guide_publishing.service.gov.uk)

<sup>19</sup> Natural England (2014) European Site Conservation Objectives for The Wash & North Norfolk Coast SAC (UK0017075) [online] Available at: [European Site Conservation Objectives for The Wash & North Norfolk Coast SAC - UK0017075 \(naturalengland.org.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/364443/European_Site_Conservation_Objectives_for_The_Wash_and_North_Norfolk_Coast_SAC_-_UK0017075.naturalengland.org.uk)

- the structure and function of the habitats of qualifying species;
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- the populations of qualifying species; and,
- the distribution of qualifying species within the site.

**Threats, pressures and activities with impacts on the site**

3.5.24 The most important impacts and activities with high effect on The Wash and North Norfolk Coast SAC are listed as (Natural England, 2015):

- changes in abiotic conditions – high rank;
- fishing and harvesting aquatic resources – high rank;
- outdoor sports and leisure activities, recreational activities – high rank;
- modification of cultivation practices – high rank; and
- Human induced changes in hydraulic conditions – high rank

**The Wash SSSI unit information (Natural England, 2020)**

3.5.25 There are 60 units in the Wash SSSI. Close to 68% is recorded as being in Favourable condition, 32% is Unfavourable – Recovering and 0.5% is Unfavourable – Declining. The most recent assessment of the majority of the units was 2009. condition assessment for units 1 (broadleaved, mixed and yew woodland – lowland) and 3.

3.5.26 The units that comprise the SSSI are made up of a range of intertidal, subtidal and coastal habitats. Reasons for the condition assessments are often not provided; those assessments that are given tend to be more easily accessed (i.e. coastal) units, and not those marine areas where access is more difficult. Those coastal areas where the condition is unfavourable are subject to overly heavy grazing.

3.5.27 Note that information for the North Norfolk Coast SSSI have not been included here as it is several tens of km from the mouth of the Ouse, and hence well beyond the influence of this project.

3.5.28 The Wash SSSI also underlies the Wash SPA and Ramsar site, and so this information also applies to their sections below.

**The Wash SPA**

3.5.29 The conservation objectives for the Wash SPA are listed as<sup>20</sup>:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:
  - the extent and distribution of the habitats of the qualifying features;

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20 Natural England (2014) European Site Conservation Objectives for The Wash SPA [online] Available at: <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9008021&SiteName=Wash%20SPA&SiteNameDisplay=The%20Wash%20SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&NumMarineSeas=21&HasCA=1#hlco>

- the structure and function of the habitats of the qualifying features;
- the supporting processes on which the habitats of the qualifying features rely;
- the population of each of the qualifying features; and,
- the distribution of the qualifying features within the site.

3.5.30 The most important impacts and activities with high effect on the site (Natural England, 2015):

- human induced changes in hydraulic conditions – high rank;
- invasive non-native species – high rank;
- modification of cultivation practices – high rank; and
- outdoor sports and leisure activities, recreational activities – high rank

### **The Wash Ramsar site**

3.5.31 No specific conservation objectives, or information threats, pressures and activities with impacts on site is available for this Ramsar site. It is therefore assumed that the related information for The Wash SPA also relates at least indirectly to the site.

### **Ouse Washes SAC**

3.5.32 The conservation objectives of Ouse Washes SAC site are<sup>21</sup>:

- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:
  - the extent and distribution of qualifying natural habitats and habitats of qualifying species;
  - the structure and function (including typical species) of qualifying natural habitats;
  - the structure and function of the habitats of qualifying species;
  - the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
  - the populations of qualifying species; and
  - the distribution of qualifying species within the site.

### **Threats, pressures and activities with impacts on the site**

3.5.33 The most important impacts and activities with high effect on Ouse Washes SAC are listed as (Natural England, 2015):

- inappropriate water levels – high rank; and

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<sup>21</sup> Natural England (2015) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Ouse Washes Special Area of Conservation (SAC) (UK0013011) Online Available at (naturalengland.org.uk)



- water pollution – high rank

### **Ouse Washes SSSI unit information (Natural England, 2020)**

- 3.5.34 There are 21 units in the Ouse Washes SSSI. Close to 16% is recorded as being in Favourable condition and close to 85% is Unfavourable – no change. The most recent assessment of the majority of the units was 2009.
- 3.5.35 The assessment of SSSI units for this site is based largely on the decline of the majority of breeding bird features, some wintering bird features and the loss of extent and quality of MG11/MG13 neutral grassland feature. Adverse condition reasons are listed as freshwater - inappropriate water levels, freshwater pollution and water pollution - agriculture/run off.
- 3.5.36 The Ouse Washes SSSI also underlies the Wash SPA and Ramsar site, and so this information also applies to their sections below.

### **Ouse Washes SPA**

- 3.5.37 The conservation objectives for Ouse Washes SPA are listed as<sup>22</sup>:
- Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:
    - the extent and distribution of the habitats of the qualifying features;
    - the structure and function of the habitats of the qualifying features;
    - the supporting processes on which the habitats of the qualifying features rely;
    - the population of each of the qualifying features; and,
    - the distribution of the qualifying features within the site.
- 3.5.38 The most important impacts and activities with high effect on the site (Natural England, 2015):
- inappropriate water levels – high rank; and
  - water pollution – high rank

### **Ouse Washes Ramsar site**

- 3.5.39 No specific conservation objectives, or information threats, pressures and activities with impacts on site is available for this Ramsar site. It is therefore assumed that the related information for Ouse Washes SPA also relates at least indirectly to the site.

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<sup>22</sup> Natural England (2014) European Site Conservation Objectives for Ouse Washes SAC [online] Available at: European Site Conservation Objectives for Ouse Washes SPA - UK9008041 (naturalengland.org.uk)

## 3.6 Summary

- 3.6.1 Having considered the likely presence and absence of impact pathways, Devil's Dyke SAC, The Wash and North Norfolk Coast SAC, The Wash SPA, the Wash Ramsar site, Ouse Washes SAC, Ouse Washes SPA, Ouse Washes Ramsar site and Eversden and Wimpole Woods SAC have potential for LSEs to occur and need to be considered further in this screening assessment so are taken forward into the next chapter.

## 4 Assessment of Likely Significant Effects

### 4.1 Initial assessment of indicated potential impact pathways

- 4.1.1 Based on the description of the Proposed Development, the impacts listed in Table 4.1 below are considered likely to occur. The zone of influence for each impact is also stated in this table together with the relevant evidence to support the defined distance.

**Table 4-1: Project impacts and their zones of influence**

Impact	Zone of Influence	Evidence
<b>Construction</b>		
<b>Permanent removal of habitat in relation to the footprint of the proposed WWTP plus any other above-ground assets such as vent shafts, access roads and new outfall structure.</b>	Permanent above ground footprint	Change in baseline conditions will be measurable only within the footprint.
<b>Temporary removal or covering of habitat in relation to the footprint of any construction related to the Proposed Development such as associated pipeline easements, construction access routes, construction compounds and laydown areas, temporary water storage lagoons for commissioning.</b>	Temporary above ground footprint.	Change in baseline conditions will be measurable only within this footprint.
<b>Generation of airborne dust such as from earthworks, materials handling and vehicle trackways.</b>	Permanent and temporary above ground footprint plus 50m to account for dust deposition.	Good industry practice states that an assessment will normally be required where there is an 'ecological receptor' within 50m of the boundary of the site (Holman <i>et al</i> , 2014)
<b>Changes in water quality and/or quantity from unplanned events including but not limited to 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.</b>	Varies.	Where watercourses are, or may be affected during construction, then effects may be felt downstream over any distance. For pathways other than surface water and/or groundwater pathways, a precautionary 500m zone of influence is applied on the basis of good industry practice recommendations. Activities related to operating any vehicle, plant or other equipment (machinery) in or near ( $\leq 10\text{m}$ ) any surface water or wetland, would require measures to avoid or minimise adverse effects (SEPA, 2019). Furthermore, groundwater must not be abstracted from any excavations, wells or boreholes that are within 250m of a wetland.
<b>Introduction of invasive non-native species (INNS) such as from the movement of equipment from one location to another or from physical disturbance during earthworks / riverbanks works that may result in distribution of INNS.</b>	Permanent and temporary above ground footprint (terrestrial)  Aquatic - varies	Good industry practice recommends that measures to avoid or minimise adverse effects may be required with respect to the risk of INNS being introduced, spread within, or moved off site (SEPA, 2016).

Impact	Zone of Influence	Evidence
		Other pathways associated with the movement of vehicle and/or materials should also be considered.
<b>Noise from construction activities such as vehicle movements, operation of machinery, materials movements and piling.</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	A precautionary 750m zone of influence is applied based on expert opinion (Whitfield, D.P., Ruddock, M. & Bullman, R., 2008). The maximum sensitivity to disturbance for species likely to be present is in this range (Voight <i>et al</i> , 2018).
<b>Presence of construction personnel and vehicle movements within the construction footprint of the Proposed Development/ to and from the Proposed Development-during construction</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	A precautionary 750m zone of influence is applied based on expert opinion. The maximum sensitivity to disturbance for species likely to be present is in this range (Voight <i>et al</i> , 2018).
<b>Temporary use of artificial lighting during construction</b>	Permanent and temporary above ground footprint plus an area within 500m to account for the sensitivity of various ecological receptors.	The zone of influence is applied based on the recommended survey area for assessing the impacts of lighting projects in relation to bats (100m) (Voight <i>et al</i> , 2018) and evidence that unshielded lights can attract invertebrates from at least 500m. (Bruce-White and Shardlow, 2011)
<b>Air quality emissions from the operation of construction plant (which may include a batching plant), vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants</b>	Varies – likely to be dependent on prevailing wind conditions etc	Where emissions may be generated in construction, designations may be affected effects may be felt within the airshed over any distance.
<b>Operation</b>		
<b>Noise from operating and maintenance activities within the proposed WWTP</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	A precautionary 750m zone of influence is applied based on expert opinion. The maximum sensitivity to disturbance for species likely to be present is in this range (Voight <i>et al</i> , 2018).
<b>Production of air emissions associated with on-site combustion from the potential CHP plant, intermittent venting, fugitive emissions and from operational vehicle movements.</b>	Varies – likely to be dependent on prevailing wind conditions etc	Where emissions may be generated in operation, designations may be affected effects may be felt within the airshed over any distance.

Impact	Zone of Influence	Evidence
<b>Presence of operational and maintenance personnel and vehicles within the proposed WWTP</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	A precautionary 750m zone of influence is applied based on expert opinion. The maximum sensitivity to disturbance for species likely to be present is in this range (Voight <i>et al</i> , 2018).
<b>Use of artificial lighting at operational above ground assets (proposed WWTP and its access).</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird/bat species.	The zone of influence is applied based on the recommended survey area for assessing the impacts of lighting projects in relation to bats (100m) (Voight <i>et al</i> , 2018) evidence that unshielded lights can attract invertebrates from at least 500m (Bruce-White and Shardlow, 2011).
<b>Changes in final effluent quality and/or quantity discharged to the River Cam from the Proposed Development</b>	Varies	Where watercourses are, or may be, affected, then effects may be felt downstream over any distance; the zone of influence for changes to water quality and/or quality is based not on distance but on connectivity. Effects could feasibly be created many kilometres downstream.

4.1.2 Potential impact pathways have been identified on the basis of spatial overlap (a habitats site within one or more zone of influence) and environmental connectivity (e.g., a surface water feature within a habitats site and zone of influence) and can be summarised as follows:

- None of the habitat's sites identified overlap with the zone of influence in relation to noise from operating and maintenance activities and the presence of operational and maintenance personnel and vehicles.
- The River Cam permits a potential hydrological connection to 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 via the River Great Ouse.
- There are no surface water features which connect the zone of influence with Devils Dyke SAC. However, there is the scope that combustion from a potential CHP or Gas to Grid within the proposed development could cause an elevation in emissions that could cause deposition on the qualifying feature habitats of the SAC. This SAC is also close to the A11/A14, which could potentially see an increase in traffic-related emissions due to construction traffic.

4.1.3 Eversden and Wimpole Woods SAC does not overlap with any of the Zones of Influence but high mobility species such as bats are known to forage at significant distances from their breeding habitat. Barbastelle can range 20km per night which could bring them within Zones of Influence relating to habitat loss and lighting. Given the distance separating the Zone of Influence and the habitats site and considering the absence of hydrological connectivity, Fenland SAC and Wicken Fen Ramsar Site are not considered further in subsequent chapters of this screening assessment, but Devils Dyke SAC, The Wash and North Norfolk Coast SAC, Wash SPA, Wash Ramsar site, Ouse Washes SAC, Ouse Washes SPA, Ouse Washes Ramsar site and Eversden and Wimpole Woods SAC are subjected to further assessment due to air emissions, hydrological impacts or impacts to bat foraging and commuting habitat.

4.1.4 Table 4.2 provides further details of these pathways.

**Table 4-2: Impacts with connectivity to the wider environment**

Impact	Zone of Influence	Impact Pathways
<b>Construction</b>		
<b>Permanent removal of habitat in relation to the footprint of the proposed WWTP plus any other above ground assets such as pumping stations, access roads and water storage tanks.</b>	Permanent above ground footprint of the Proposed Development.	No spatial overlap between zone of influence and any NSN/Ramsar sites. However potential for impact to bat features for sites at greater distance.
<b>Temporary removal or covering of habitat in relation to the footprint of any construction related to the Proposed Development such as associated pipeline easements, construction access routes, construction compounds and laydown areas, water storage lagoons for commissioning.</b>	Temporary above ground footprint of the Proposed Development.	No spatial overlap between zone of influence and any NSN/Ramsar sites. However potential for impact to bat features for sites at greater distance.
<b>Generation of airborne dust such as from earthworks, materials handling and vehicle trackways.</b>	Permanent and temporary above ground footprint plus 50m to account for dust deposition.	No spatial overlap between zone of influence and any NSN/Ramsar sites.
<b>Changes in water quality and/or quantity from unplanned events including but not limited to 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.</b>	Permanent and temporary above ground footprint plus 500m to account for changes in ground water as well as potential surface water and groundwater pathways to sensitive receptors.	<p>No spatial overlap between zone of influence and Devil’s Dyke SAC.</p> <p>The CWWTP discharges into the River Cam and is thus hydrologically connected downstream to</p> <ul style="list-style-type: none"> <li>• The Wash and North Norfolk Coast SAC,</li> <li>• The Wash SPA,</li> <li>• Wash Ramsar site,</li> <li>• Ouse Washes SAC,</li> <li>• Ouse Washes SPA and</li> <li>• Ouse Washes Ramsar site.</li> </ul>



Impact	Zone of Influence	Impact Pathways
		Flooding of an active construction site could result in a pollution incident as a result of materials washed from site (including silt) which are then passed downstream.
<b>Introduction of invasive non-native species (INNS) such as from the movement of equipment from one location to another or from physical disturbance during earthworks / riverbanks works that may result in distribution of INNS.</b>	Permanent and temporary above ground footprint.	No spatial overlap between zone of influence and any NSN/Ramsar sites.
<b>Noise from construction activities such as vehicle movements, operation of machinery, materials movements and piling.</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	No spatial overlap between zone of influence and any NSN/Ramsar sites.
<b>Presence of construction personnel and vehicle movements within the construction footprint of the Proposed Development/ to and from the Proposed Development-during construction</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	No spatial overlap between zone of influence and any NSN/Ramsar sites.
<b>Temporary use of artificial lighting during construction</b>	Permanent and temporary above ground footprint plus an area within 500m to account for the sensitivity of various ecological receptors.	No spatial overlap between zone of influence and any NSN/Ramsar sites. However potential for impact to bat features for sites at greater distance.
<b>Air quality emissions from the operation of construction plant (which may include a batching plant), vehicle movements and associated dry deposition of atmospheric nitrogen and other possible pollutants</b>	Receptors within 200m of an 'affected road' should be considered. Use the scoping criteria in DMRB to choose which roads are 'affected' (see Section 2.1 of DMRB LA 105 - Highways England, 2019) <ul style="list-style-type: none"> <li>● Change of 200 heavy duty vehicles or more</li> </ul>	Possible impact pathway between construction vehicle emissions and Devil's Dyke SAC if using A14 at greater than the rates shown. No effects considered likely on the other sites.

Impact	Zone of Influence	Impact Pathways
<b>Testing and commissioning of the proposed WWTP may result in intermittent impacts to water quality as a result of effluent emissions to the river Cam.</b>	River Cam downstream of discharge location	Changes to water quality during testing and commissioning could result in reduced water quality which may affect downstream reaches.
<b>Operation</b>		
<b>Noise from operating and maintenance activities at the proposed WWTP</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	No spatial overlap between zone of influence and any NSN/ Ramsar sites.
<b>Presence of operational and maintenance personnel and vehicles within the proposed WWTP and moving to/from the proposed WWTP</b>	Permanent and temporary above ground footprint plus an area within 750m to account for the sensitivity of bird species.	No spatial overlap between zone of influence and any NSN/ Ramsar sites.
<b>Use of artificial lighting at operational above ground assets within the proposed WWTP and its access road</b>	Permanent and temporary above ground footprint plus an area within 500m to account for the sensitivity of various ecological receptors.	No spatial overlap between zone of influence and any NSN/ Ramsar sites. However potential for impact to bat features for sites at greater distance.
<b>Changes in final effluent quality and/or quantity discharged to the River Cam from the Proposed Development</b>	Permanent and temporary above ground footprint plus 500m to account for changes in ground water as well as potential surface water and groundwater pathways to sensitive receptors.	<p>No spatial overlap between zone of influence and Devil's Dyke SAC.</p> <p>The CWWTP discharges into the River Cam and is thus hydrologically connected downstream to:</p> <ul style="list-style-type: none"> <li>• The Wash and North Norfolk Coast SAC,</li> <li>• The Wash SPA,</li> <li>• Wash Ramsar site,</li> <li>• Ouse Washes SAC,</li> <li>• Ouse Washes SPA and</li> <li>• Ouse Washes Ramsar site.</li> </ul>

Impact	Zone of Influence	Impact Pathways
		Winter flooding may also carry effluent downstream to potentially impact on these sites.

## 4.2 Assessment of likely significant effects alone

- 4.2.1 This part of the assessment considers whether the Proposed Development would have any LSE when considered in isolation. Each habitats site is assessed, in terms of potential effects on each of the qualifying features. Both the construction and operational phases are assessed.
- 4.2.2 The assessments in this section should be read alongside the Screening Matrices in Appendix B, which present the results of the screening assessments in a format required for projects being submitted into the DCO application process.

### Devil's Dyke SAC

- 4.2.3 The LSE on Devil's Dyke SAC are set out within Table 4.3.

Table 4-3: Devil's Dyke SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
Annex I habitats - 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco-Brometalia</i> ) (important orchid sites).	Yes	<p><b>Construction Phase:</b> Emissions resulting in air-borne pollutants/ air pollution: risk of atmospheric nitrogen deposition – specifically from construction traffic passing within 200m on A14.</p> <p><b>Operational Phase:</b> Emissions due to on-site combustion resulting in airborne pollution; risk of atmospheric nitrogen deposition.</p>

### The Wash and North Norfolk Coast SAC

- 4.2.4 The LSE on The Wash and North Norfolk SAC are set out within Table 4-4.

Table 4-4: The Wash and North Norfolk Coast SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<b>Annex I habitats – 1110 Sandbanks which are slightly covered by sea water all the time</b>	Yes	<p><b>Construction Effects:</b> Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as site are downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely significant effects, over the</p>
<b>Annex I habitats – 1140 Mudflats and sandflats not covered by seawater at low tide</b>	Yes	
<b>Annex I habitats – 1160 Large shallow inlets and bays</b>	Yes	
<b>Annex I habitats – 1170 Reefs</b>	Yes	

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
Annex I habitats – 1310 Salicornia and other annuals colonizing mud and sand	Yes	<p>distance between development and site cannot be determined at this stage.</p> <p><b>Operational phase:</b> Final effluent quality standards are expected to result in no detriment to the receiving environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.</p>
Annex I habitats – 1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )	Yes	
Annex I habitats – 1420 Mediterranean and thermo-Atlantic halophilous scrubs ( <i>Sarcocornetea fruticose</i> )	Yes	
Annex I habitats – 1150 Coastal lagoons	Yes	
Annex II species – 1365 Harbour seal	Yes, as reliant on the coastal habitats detailed above	
Annex II species – 1355 Otter	Yes, as reliant on the coastal habitats detailed above	

### The Wash SPA

4.2.5 The LSE on The Wash SPA are set out within Table 4-5.

Table 4-5: The Wash SPA LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
Article 4.1 breeding bird species	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	<p><b>Construction phase:</b> Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as the site is downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely significant effects, over the distance between development and site cannot be determined at this stage.</p> <p><b>Operational phase:</b> Final effluent quality standards are expected to result in no detriment to the receiving</p>
Article 4.1 overwintering bird species	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
Article 4.2 overwintering bird species	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<b>Article 4.2 An Internationally Important Assemblage of Birds</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.

### The Wash Ramsar site

4.2.6 The LSE on The Wash Ramsar are set out within Table 4.6.

Table 4-6: The Wash Ramsar Site LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<b>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.</b>	Yes	<p><b>Construction Effects:</b> Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as the site is downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely significant effects, over the distance between development and site cannot be determined at this stage.</p> <p><b>Operational phase:</b> Final effluent quality standards are expected to result in no detriment to the receiving environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.</p>
<b>Ramsar Criterion 3 – the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters.</b>	Yes	
<b>Ramsar Criterion 5 – a range of species with peak counts in spring/autumn, and with peak counts in winter.</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
<b>Ramsar Criterion 6 – a range of species for possible future consideration, with peak counts in spring/autumn and in winter.</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	

### Ouse Washes SAC

4.2.7 The LSE on Ouse Washes SAC are set out within Table 4.7.

**Table 4.7: Ouse Washes SAC LSEs**

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<p><b>Annex II species – Spined loach (<i>Cobitis taenia</i>)</b></p>	<p>Yes</p>	<p><b>Construction Effects:</b>                      Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as site are downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely significant effects, over the distance between development and site cannot be determined at this stage.</p> <p><b>Operational phase:</b>                      Final effluent quality standards are expected to result in no detriment to the receiving environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.</p>

**Ouse Washes SPA**

4.2.8 The LSE on Ouse Washes SPA are set out within Table 4.8.

Table 4.8: Ouse Washes SPA LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<p><b>Article 4.1 overwintering bird species</b></p> <p><b>Article 4.2 overwintering bird species</b></p> <p><b>Article 4.2 An Internationally Important Assemblage of Birds</b></p>	<p>Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.</p>	<p><b>Construction phase:</b> Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as the site is downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely significant effects, over the distance between development and site cannot be determined at this stage.</p> <p><b>Operational phase:</b> Final effluent quality standards are expected to result in no detriment to the receiving environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.</p>

### Ouse Washes Ramsar site

4.2.9 The LSE on Ouse Washes SPA are set out within Table 4.9.

Table 4.9: Ouse Washes Ramsar LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<p><b>Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.</b></p>	<p>Yes</p>	<p><b>Construction Effects:</b> Potential for construction phase (including wet commissioning activities) to cause changes to water quality in surface and groundwater bodies (impact as the site is downstream from the Proposed Development in the River Cam catchment). The extent to which dilution could act to dissipate or eliminate likely</p>
<p><b>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</b></p>	<p>Yes</p>	



Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
Book species large darter dragonfly <i>Libellula fulva</i> and the rifle beetle <i>Oulimnius major</i> . The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.		significant effects, over the distance between development and site cannot be determined at this stage. <b>Operational phase:</b> Final effluent quality standards are expected to result in no detriment to the receiving environment, but as a precautionary basis operational phase LSE cannot be ruled out due to risk of impacts from storm discharges.
Ramsar Criterion 5 – a range of species with peak counts in winter.	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
Ramsar Criterion 6 – Species/populations occurring at levels of international importance. Including a range of species for possible future consideration, with peak counts in winter.	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	

### Eversden and Wimpole Woods SAC

4.2.10 The LSE on Eversden and Wimpole Woods SAC are set out within Table 4.10.

Table 4-10: Eversden and Wimpole Woods SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
S1308:Barbastelle bat	Yes	<b>Construction Phase:</b> Temporary and permanent habitat loss and/or construction lighting may affect foraging and commuting <b>Operational Phase:</b> Operational lighting may affect foraging and commuting

## 4.3 In-Combination

4.3.1 There is potential for other plans, policies and, most pertinently, projects, to act in combination with the proposed development. The primary means by which these in-combination effects may be felt relates to:

- those developments that in operation may act to increase the demand on the proposed WWTP beyond the population equivalent growth projections, such that the alteration to water chemistry in the River Cam extends beyond the potential changes associated proposed development in isolation.
- the construction activities in the catchment that may change diffuse run-off characteristics in the catchment that contributes to adverse water quality changes in the catchment of the River Cam that are additive to the potential changes associated proposed development in isolation.

4.3.2 the physical changes to the catchment as a result of completed developments that also change diffuse run-off characteristics in the catchment that contributes to adverse water quality changes in the catchment of the River Cam that are additive to the potential changes associated proposed development in isolation. This would therefore have potential effects on all those NSN sites connected hydrologically to the proposed development.

4.3.3 In addition, there is the potential for airborne emissions sources to act in combination with those arising from the Proposed Development to give rise to LSE sensitive habitats within the habitat sites described above.

4.3.4 In addition, there is potential for developments that could affect quality and usability of foraging habitat and commuting routes for the Eversden and Wimpole Woods SAC barbastelle population to act in combination with any impacts from the proposed development.

4.3.5 In common with other project assessments, the plans policies and projects detailed in Table 4.11 below have been assessed for potential in combination effects.

**Table 4-11: Plans and Projects for In Combination Assessment**

Plan, Policy or Project	Application Reference	Status	Distance from EIA Scoping boundary
<b>Tier 1.</b>			
<b>1a. Development in construction</b>			
1. Up to 6,500 dwellings, business, retail, community, leisure and sports uses; a hotel; new primary and secondary schools; green open spaces including parks, ecological areas and woodlands; principal new accesses from the A10 and other points of access; associated infrastructure, groundworks and demolition; with all matters reserved except for the first	SCDC ref. S/0559/17/OL	Permitted 27/9/19	4.5km

Plan, Policy or Project	Application Reference	Status	Distance from EIA Scoping boundary
primary junction from the A10 and construction access from Denny End Road. Waterbeach. CB25 9GU			
<b>Tier 1.</b>			
<b>1b. permitted but not likely to be implemented at the time when construction of CWWTPR commences</b>			
2. Railway station comprising platforms, pedestrian bridges, access road, pedestrian and cycle routes, car and cycle parking, with other associated facilities and infrastructure. Waterbeach. CB25 9NZ	SCDC ref. S/0791/18/FL	Permitted	5.5km
3. Construction and operation of a Waste Water Treatment Plant, and ancillary works, with a capacity of 75,000 tonnes per annum. Waterbeach. CB25 9PG	CCC ref. S/0202/16/CW	Permitted	4.3km
<b>Tier 1.</b>			
<b>1c. Applications in planning and under consideration</b>			
4. 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 highways works. Waterbeach. CB25 9LW	SCDC ref. S/2075/18/OL	Under consideration	5.5km
5. Energy from Waste Facility to treat up to 250,000 tonnes of residual waste per annum. Waterbeach. CB25 9PQ	CCC ref. S/3372/17/CW	Appeal	6.2km
<b>Tier 2.</b>			
<b>Projects for which an EIA scoping request has been submitted to PINS</b>			
6. A428 Black Cat to Caxton Gibbet Road Improvement proposed development. CB23 3AS		Pre-application	18km
7. Sunnica Energy Farm. IP28 8UQ		Pre-application	22km
<b>Tier 3.</b>			
<b>3a. Projects on PINS programme but EIA scoping request not yet submitted</b>			
8. None			
<b>Tier 3.</b>			
<b>3b. Proposals identified in Development Plans and emerging Development Plans</b>			
9. Cambridge Local Plan		2018	

Plan, Policy or Project	Application Reference	Status	Distance from EIA Scoping boundary
10. North West Cambridge Area Action Plan: University Quarter		Adopted 2009	
11. Cambridge East Area Action Plan 2020: New dwellings and employment space		Draft	
12. North East Cambridge Area Action Plan: New dwellings and employment space		Draft	
13. The Draft Cambridgeshire and Peterborough Local Transport Plan: A10 Ely to Cambridge Capacity Improvements (Dualling proposed development)		Published 2019	
<b>Tier 3.</b>			
<b>3c. Other plans or programmes / framework for likely future development</b>			
14. None known at this stage			

4.3.6 The above plans policies and projects are considered in combination with the Proposed Development, to identify those projects that could act alongside this project to have likely significant effects on qualifying feature habitats or species at any of the sites.

### Devil's Dyke SAC

4.3.7 The LSE on Devils Dyke SAC in relation to in combination impacts are set out within 12.

Table 4-12: Devil's Dyke SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible In-Combination Impact Pathway, and likely trigger plans, policies and projects
<b>Annex I habitats - 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites).</b>	Yes	<p><b>Construction Phase:</b> Air emissions, air-borne pollutants, risk of atmospheric nitrogen deposition – on qualifying habitats, specifically from construction traffic passing within 200m on A14.</p> <p>In-combination effects with those projects also likely to trigger increases in volume of traffic on A14: Several of the items listed in Table 4.11 above have the potential to cause an increase in traffic on the A14, which may act in combination with the construction phase effects due to construction traffic to cause LSE.</p> <p><b>Operational phase:</b></p>

Interest Feature	Possible Likely Significant Effects	Possible In-Combination Impact Pathway, and likely trigger plans, policies and projects
		<p>Emissions due to on-site combustion resulting in airborne pollution; risk of atmospheric nitrogen deposition.</p> <p>In-combination effects with those projects likely to trigger increases in volume of traffic on A14: Several of the items listed in Table 4.11 above have the potential to cause an increase in traffic on the A14, which may act in combination with the operational phase effects due to combustion to cause LSE</p>

### The Wash and North Norfolk Coast SAC

4.3.8 The LSE on The Wash and North Norfolk Coast SAC in relation to in combination impacts are set out within Table 4.13.

Table 4-13: The Wash and North Norfolk Coast SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible Impact Pathway
Annex I habitats – 1110 Sandbanks which are slightly covered by sea water all the time	Yes	<p><b>Construction Effects:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes (nitrates etc) at the SAC due to alterations in the volume of treated water entering the Cam: The majority of the items listed in Table 4.11 above (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) are likely to cause an increase in the volume of treated water, and hence the nutrients discharged into the Cam, which then potential could affect this downstream habitats site.</p>
Annex I habitats – 1140 Mudflats and sandflats not covered by seawater at low tide	Yes	
Annex I habitats – 1160 Large shallow inlets and bays	Yes	
Annex I habitats – 1170 Reefs	Yes	
Annex I habitats – 1310 Salicornia and other annuals colonizing mud and sand	Yes	
Annex I habitats – 1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )	Yes	
Annex I habitats – 1420 Mediterranean and thermo-Atlantic halophilous scrubs ( <i>Sarcocornetea fruticose</i> )	Yes	
Annex I habitats – 1150 Coastal lagoons	Yes	

Interest Feature	Possible Likely Significant Effects	Possible Impact Pathway
Annex II species – 1365 Harbour seal	Yes, as reliant on the coastal habitats detailed above	
Annex II species – 1355 Otter	Yes, as reliant on the coastal habitats detailed above	

## The Wash SPA

4.3.9 The LSE on The Wash SPA in relation to in combination impacts are set out within Table 4.14.

Table 4-14: The Wash SPA LSEs

Interest Feature	Possible Likely Significant Effects	Possible Impact Pathway
<b>Article 4.1 breeding bird species</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	<p><b>Construction Effects:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes at the habitat site due to alterations in the volume of treated water entering the Cam: The majority of the items listed in Table 4.11 above (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) are likely to cause an increase in the volume of treated water, and hence the nutrients etc discharged into the Cam, which then potential could affect this downstream habitats site.</p>
<b>Article 4.1 overwintering bird species</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
<b>Article 4.2 overwintering bird species</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
<b>Article 4.2 An Internationally Important Assemblage of Birds</b>	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	

## The Wash Ramsar site

4.3.10 The LSE on The Wash Ramsar in relation to in combination impacts are set out within Table 4.15.

**Table 4-15: The Wash Ramsar Site LSEs**

Interest Feature	Possible Likely Significant Effects	Possible Impact Pathway
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.	Yes	<p><b>Construction Effects:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes (nitrates etc) at the SAC due to alterations in the volume of treated water entering the Cam: Many of the items listed in Table 4.11 (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) above are likely to cause an increase in the volume of treated water, and hence the nutrients etc discharged into the Cam, which then potential could affect this downstream habitats site.</p>
Ramsar Criterion 3 – the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters.	Yes	
Ramsar Criterion 5 – a range of species with peak counts in spring/autumn, and with peak counts in winter.	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
Ramsar Criterion 6 – a range of species for possible future consideration, with peak counts in spring/autumn and in winter.	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	

## Ouse Washes SAC

4.3.11 The LSE on Ouse Washes SAC in relation to in combination impacts are set out within Table 4-16.

**Table 4-16: Ouse Washes SAC LSEs**

Interest Feature	Possible Likely Significant Effects	Possible In-Combination Pathway, and likely trigger plans, policies and projects
<b>Annex II species – Spined loach (<i>Cobitis taenia</i>)</b>	Yes	<p><b>Construction phase:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering</p>

Interest Feature	Possible Likely Significant Effects	Possible In-Combination Pathway, and likely trigger plans, policies and projects
		<p>and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes at the SAC due to alterations in the volume of treated water entering the Cam: The majority of the items listed in Table 4.11 above (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) are likely to cause an increase in the volume of treated water, and hence the nutrients etc discharged into the Cam, which then potentially could affect the feature of this downstream site.</p>

### Ouse Washes SPA

4.3.12 The LSE on Ouse Washes SPA in relation to in combination impacts are set out within Table 4-17.

Table 4-17: Ouse Washes SPA LSEs

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
<p><b>Article 4.1 overwintering bird species</b></p> <p><b>Article 4.2 overwintering bird species</b></p> <p><b>Article 4.2 An Internationally Important Assemblage of Birds</b></p>	<p>Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.</p>	<p><b>Construction Effects:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes at the habitat site due to alterations in the volume of</p>



		<p>treated water entering the Cam: The majority of the items listed in Table 4.11 above (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) are likely to cause an increase in the volume of treated water, and hence the nutrients etc discharged into the Cam, which then potential could affect this downstream habitats site.</p>
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## Ouse Washes Ramsar site

4.3.13 The LSE on Ouse Washes Ramsar in relation to in-combination impacts are set out within Table 4-18.

**Table 4-18: Ouse Washes Ramsar LSEs**

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.	Yes	<p><b>Construction Effects:</b> Unplanned events (spills/ leaks, site run off, flooding of site), dewatering and wet commissioning in construction could act in combination with similar effects from other plans, policies or projects to cause LSE on the site (especially item 1 in Table 4.11 above).</p> <p><b>Operational phase:</b> In-combination effects with those plans, policies and projects also likely to result in changes to the fluvial and water chemistry regimes (nitrates etc) at the SAC due to alterations in the volume of treated water entering the Cam: Many of the items listed in Table 4.11 (e.g. items 1, 4, 5, 9, 10, 11, 12 and 13) above are likely to cause an increase in the volume of treated water, and hence the nutrients etc discharged into the Cam, which then potential could affect this downstream habitats site.</p>
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 <i>Libellula fulva</i> and the rifle beetle <i>Oulimnius major</i> . The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.	Yes	
Ramsar Criterion 5 – a range of species with peak counts in winter.	Yes, due to direct effects, and indirect effects on habitats and the prey species on which the qualifying bird species depend.	
Ramsar Criterion 6 – Species/populations occurring at levels of international	Yes, due to direct effects, and indirect effects on habitats and the prey	

Interest Feature	Possible Likely Significant Effects	Possible Pathway for LSE
importance. Including a range of species for possible future consideration, with peak counts in winter.	species on which the qualifying bird species depend.	

### Eversden and Wimpole Woods SAC

4.3.14 The LSE on Eversden and Wimpole Woods SAC in relation to in-combination impacts are set out within Table 4-19.

Table 4-19: Eversden and Wimpole Woods SAC LSEs

Interest Feature	Possible Likely Significant Effects	Possible In-Combination Impact Pathway, and likely trigger plans, policies and projects
<b>Annex I habitats - 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites).</b>	Yes	<p><b>Construction Phase:</b> Temporary and permanent habitat loss and/or construction lighting may affect foraging and commuting in-combination with those projects listed in Table 4.11 above leading to a potential to cause LSE in-combination.</p> <p><b>Operational Phase:</b> Operational lighting may affect foraging and commuting in-combination with those projects listed in Table 4.11 above leading to a potential to cause LSE in-combination.</p>

## 4.4 Summary

4.4.1 It is concluded that the various habitat sites described above may be affected by:

- air emissions and changes to air quality/ air-borne pollutants; and
- changes to groundwater and surface water quality and quantity and hydrological impacts; both via normal discharges into River Cam and through possible impacts from intermittent storm discharges.
- changes to foraging and commuting habitat for the Eversden and Wimpole SAC barbastelle feature.

4.4.2 The impacts may be caused by the Proposed Development when considered alone and in combination with those cited plans, policies and projects.

4.4.3 This conclusion is made on a precautionary basis, and due to the distances involved between the Proposed Development and the NSN sites the risk of likely significant effect is considered to be low, but cannot be ruled out based on the available

information. Further details will be required before it will be possible to rule out likely significant effects occurring either, alone or in combination.

4.4.4 It is likely that further studies into the below pathways will demonstrate that no LSE are likely, or they can be used to identify mitigation measures to remove LSE:

- Air quality assessment – traffic modelling for the project should be analysed to gather information in relation to the possible impacts on ambient pollutant concentrations including at Devil’s Dyke SAC from construction traffic passing nearby on the A14.
- Assessment of impacts to water resources (including WFD assessment) – analysis will be required of construction phase activities with the potential to result in surface and groundwater impacts, predicted effluent discharges into the River Cam (including during wet commissioning and operation) and assessment of possible risk of pollution downstream resulting from flood events, when storm water could feasibly bypass the Proposed Development and enter the river directly both within the construction and operational phases. For the operational phase, any controls to regulate discharges to be within permitted levels should be inspected to assess whether this provides adequate certainty that the Proposed Development will not release a greater volume of waste water as currently in the future.
- More detailed consideration of foraging and commuting requirements of the Eversden and Wimpole SAC barbastelle population including the potential for the habitats within the application site to contribute to this.

## 5 Screening Statement

5.1.1 This screening assessment investigates the potential for significant effects on the qualifying interests of the following NSN sites arising from the Proposed Development:

- Devil’s Dyke SAC
- Eversden and Wimpole Woods SAC
- Fenland SAC
- The Wash Ramsar
- The Wash and North Norfolk Coast SAC
- The Wash SPA
- Wicken Fen Ramsar site
- Ouse Washes SAC
- Ouse Washes SPA
- Ouse Washes Ramsar site

5.1.2 The screening assessment considers whether the Proposed Development, either alone or in combination with other projects or plans, will have a significant effect on the habitat sites.

5.1.3 Having regard to the precautionary principle, it is concluded that there is potential for significant effects on Devil’s Dyke SAC, Wash and North Norfolk Coast SAC, Wash SPA, Wash Ramsar site, Ouse Washes SAC, Ouse Washes SPA, Ouse Washes Ramsar site and Eversden and Wimpole SAC as a result of the Proposed Development either alone or in-combination with other plans and/or projects. The findings of this report for screening for Appropriate Assessment are summarised in the Table 5.1 below, and the Screening Matrices in Appendix B.

**Table 5-1: Screening statement**

Project Plan	
<b>Description of the project or plan</b>	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 and new outfall to the River Cam), a transfer pipeline corridor from a pumping station off Bannold Drive (Waterbeach), and a new access road to the proposed WWTP. The Proposed Development is a nationally significant infrastructure project as defined by Section 14(1)(o) of the Planning Act 2008: the construction or alteration of a waste water treatment plant, and Section 29(1) as it is expected to have a PE capacity population

	300,000 (in relation to capacity for sludge treatment and not wastewater treatment).
<b>National Sites Network sites assessed</b>	
<b>Brief Description of the Natura 2000 Site(s)</b>	<p>Wicken Fen Ramsar site and Fenland SAC occupy the same land area/ location (Wicken Fen Ramsar site is a component site within the larger SAC designation), approximately 5 km from the closest point within the Proposed Development site, and the site details are as follows:</p> <ul style="list-style-type: none"> <li>● Wicken Fen Ramsar site - reference UK11077/ area 254.49 hectares;</li> <li>● Fenland SAC - reference UK0014782/ area 619.41 hectares;</li> <li>● Devils Dyke SAC lies c.8.97km from the closest point within the Proposed Development site - reference UK0030037/ area 8.25 hectares;</li> <li>● Eversden and Wimpole Woods SAC – this site lies 15.2 km from the closest point within the Proposed Development site.</li> <li>● The Wash and North Norfolk Coast SAC – this site lies 70.3 km north (downstream) of the Proposed Development</li> <li>● The Wash SPA - this site lies 70.3 km north (downstream) of the Proposed Development</li> <li>● The Wash Ramsar site - this site lies 70.3 km north (downstream) of the Proposed Development</li> <li>● Ouse Washes SAC – this site lies 14.1km downstream of the Proposed Development</li> <li>● Ouse Washes SPA – this site lies 14.1 km downstream of the Proposed Development</li> <li>● Ouse Washes Ramsar site – this site lies 14.1 km downstream of the Proposed Development</li> </ul>
<b>Assessment Criteria</b>	
<b>Describe how the project or plan (alone or in combination) is likely to give rise to impacts on the Natura 2000 site.</b>	Having considered the likely presence and absence of impact pathways, Devil’s Dyke SAC, The Wash and North Norfolk Coast SAC, The Wash SPA/Ramsar site, Ouse Washes SAC, Ouse Washes SPA, Ouse Washes Ramsar site and Eversden and Wimpole SAC have potential for LSEs to occur.
<b>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the</b>	There is the possibility of impacts arising to, Devil’s Dyke SAC, The Wash and North Norfolk Coast SAC, The Wash SPA, The Wash Ramsar site, Ouse Washes SAC, Ouse Washes SPA, Ouse Washes Ramsar site and Eversden and Wimpole SAC due to:

<p><b>Natura 2000 site by virtue of;</b></p> <ul style="list-style-type: none"> <li>● <b>Size and scale;</b></li> <li>● <b>Land take;</b></li> <li>● <b>Distance from the Natura 2000 site or key features of the site;</b></li> <li>● <b>Resource requirements (water abstraction etc);</b></li> <li>● <b>Emissions (disposal to land, water or air);</b></li> <li>● <b>Excavation requirements;</b></li> <li>● <b>Transportation requirements;</b></li> <li>● <b>Duration of construction, operation, decommissioning etc;</b></li> <li>● <b>Other.</b></li> </ul>	<ul style="list-style-type: none"> <li>● Potential for water and groundwater changes and associated hydrological impacts as the site is downstream from the Proposed Development in the River Cam/River Great Ouse. The pathway may occur due to consented discharges and/or effluent release caused by a flood event.</li> </ul> <p>There is the possibility of impacts arising to Devil’s Dyke SAC due to:</p> <ul style="list-style-type: none"> <li>● Air pollution/ air-borne pollutants (risk of atmospheric nitrogen deposition) from the on-site CHP plant during operation from construction traffic passing within 200m on A14 and from a consented on-site CHP plant during operation.</li> </ul> <p>There is also the possibility of impacts arising to Eversden and Wimpole SAC due to:</p> <ul style="list-style-type: none"> <li>● Changes to foraging and commuting habitat outside of the designated site affecting the barbastelle population feature.</li> </ul>
<p><b>Describe any likely changes to the Natura 2000 site arising as a result of:</b></p> <ul style="list-style-type: none"> <li>● <b>Reduction in habitat area;</b></li> <li>● <b>Disturbance to key species;</b></li> <li>● <b>Habitat or species fragmentation;</b></li> <li>● <b>Reduction in species density;</b></li> <li>● <b>Changes in key indicators of conservation value (water quality etc.);</b></li> <li>● <b>Climate change.</b></li> </ul>	<p>Degradation of habitat site due to changes in surface water quality as a result of construction activities and in combination with other projects. In-combination effects for incremental increase in final effluent volumes. Adverse effects on populations of qualifying species.</p> <p>Degradations of habitat due to emissions from vehicles.</p> <p>Reduction in species density due to changes to offsite foraging and commuting habitat potentially affecting population size.</p>
<p><b>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</b></p> <ul style="list-style-type: none"> <li>● <b>Interference with the key relationships that define the structure of the site;</b></li> <li>● <b>Interference with key relationships that define the function of the site.</b></li> </ul>	<p>Not known at this stage, but LSE on the sites identified in this screening assessment is likely to add to existing pressures, jeopardising their condition/recovery, and putting additional strain on meeting the stated conservation objectives.</p>
<p><b>Describe from the above those elements of the</b></p>	<p>Requires further study in the form of an air emissions risk assessment and use of traffic modelling study data as well as</p>

<b>project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</b>	a hydrological study looking at likely future levels of discharge from the proposed WWTP.
<b>Data collected to carry out the assessment</b>	
<b>Who carried out the assessment?</b>	Ben Benatt CEnv MCIEEM, Simon Allen CEnv MCIEEM and Ross Holdgate
<b>Sources of data?</b>	Please refer to the reference list at the end of this document.
<b>Level of assessment?</b>	Desktop.

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## Abbreviations and Glossary

Acronym / Abbreviation	Detail
<b>AA</b>	Appropriate Assessment
<b>AAP</b>	Area Action Plan
<b>AOD</b>	Above Ordnance Datum
<b>AWS</b>	Anglian Water Services
<b>BTO</b>	British Trust for Ornithology
<b>CSHR (HabsRegs)</b>	Conservation of Habitats and Species Regulations 2017,
<b>CWS</b>	County Wildlife Site
<b>CWWTP</b>	Cambridge Waste Water Treatment Plant
<b>CWWTPR</b>	CWWTP Relocation
<b>DCO</b>	Development Consent Order
<b>EZOI</b>	Ecological Zone of Influence
<b>HE</b>	Homes England
<b>HER</b>	Historic Environment Record
<b>HIF</b>	Housing Infrastructure Fund
<b>HLS</b>	Higher Level Stewardship
<b>HRA</b>	Habitats Regulations Assessment
<b>IROPI</b>	imperative reasons of overriding public interest
<b>IRZ</b>	Impact risk zone
<b>JNCC</b>	Joint Nature Conservation Committee
<b>NSIP</b>	Nationally Significant Infrastructure Project
<b>NSN</b>	National Site Network
<b>NPPF</b>	National Planning Policy Framework
<b>PE</b>	Population Equivalent
<b>SNCB</b>	Statutory Nature Conservation Body
<b>SSSI</b>	Site Special Scientific Interest

Descriptor	Detail
<b>Annex 1 Birds</b>	Bird species listed under Annex 1 of the Birds Directive. These are in danger of extinction, are rare, or are considered vulnerable within the

<b>Descriptor</b>	<b>Detail</b>
	European Union. Those that regularly occur at levels over 1% of the national population meet the SPA qualifying criteria.
<b>Annex I Habitats</b>	A natural habitat listed under Annex I of the Habitats Directive for which Special Areas of Conservation can be selected
<b>Annex II Species</b>	A species under Annex II of the Habitats Directive for which Special Areas of Conservation can be selected
<b>cSAC</b>	Sites that have been submitted to the European Commission, but not yet formally adopted.
<b>pRamsar</b>	Sites proposed by the UK statutory nature conservation agencies for designation the Ramsar Convention on Wetlands.
<b>pSAC</b>	A site that has been approved for consultation by the Government but is not yet classified.
<b>pSPA</b>	An area identified by the JNCC and the other UK statutory nature conservation agencies and recommend to government for designation as an SPA.
<b>Ramsar site</b>	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity.
<b>Special Area Conservation</b>	Sites that have been adopted by the European Commission and formally designated by the government of each country in whose territory the site lies.
<b>SCI</b>	Sites that have been adopted by the European Commission but not yet formally designated by the government of each country in whose territory the site lies.
<b>Special Protection Area</b>	Sites that have been adopted by the European Commission and formally designated by the government of each country in whose territory the site lies.
<b>Tetrad</b>	A collection of four Ordnance Survey 1-km squares arranged into a 2km by 2km square.

# Appendices

## A. Figures

Figure 1: Map showing locations of NSN sites in relation to Scheme Area

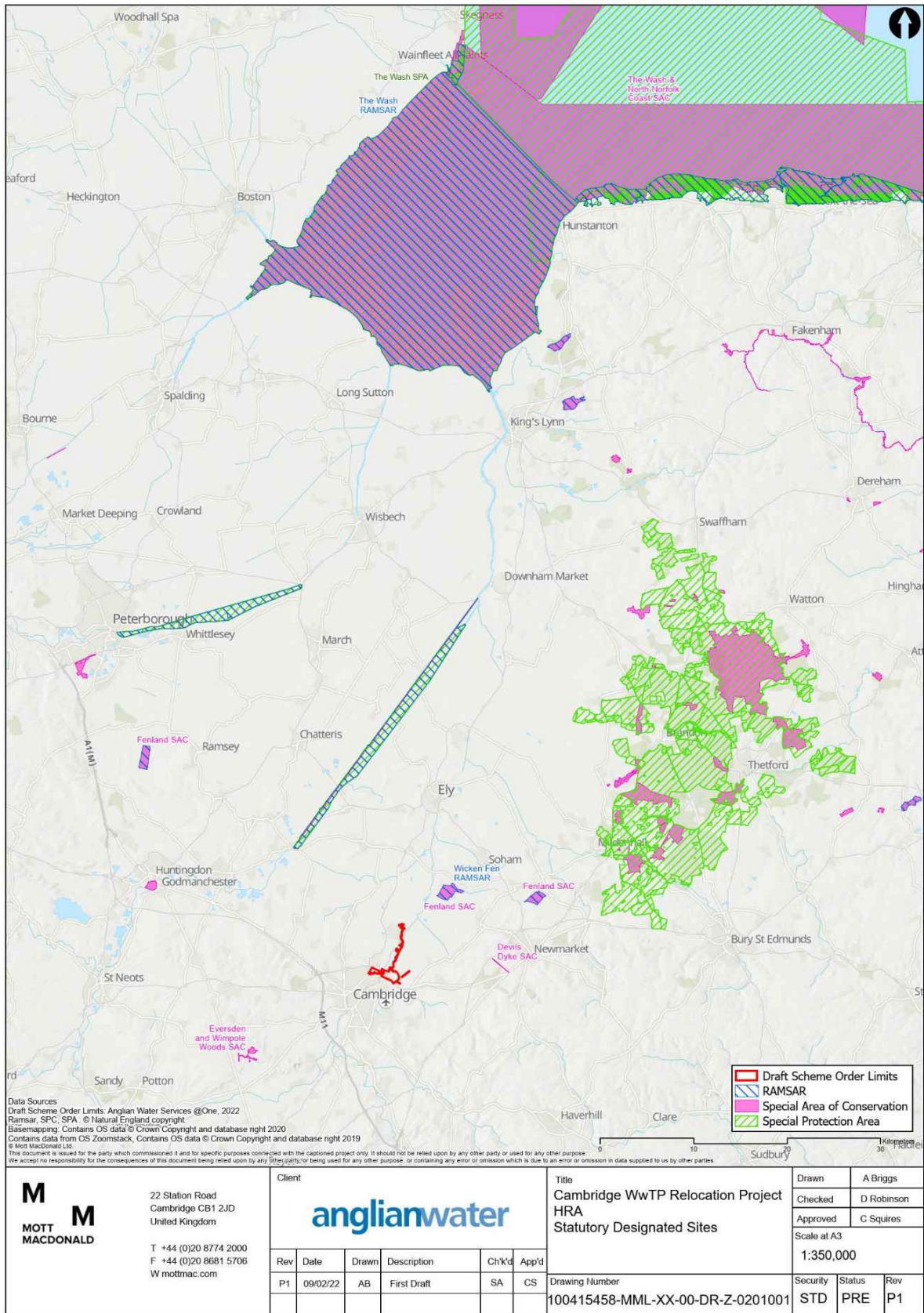


Figure 1: Map showing locations of Habitats Sites in relation to Proposed Development Area

## B. Screening Matrices

✓ = Likely significant effect cannot be excluded

✗ = Likely significant effect can be excluded



Name of European site and designation: Fenland SAC												
EU Code: UK0014782												
Distance to Proposed Development: 4.72km												
European site features	Likely effects of Proposed Development											
	<i>Alterations to water quality due to pollution events</i>			<i>Alterations to water quality due to changes in water chemistry</i>			<i>Alterations to water quantity</i>			<i>In combination effects</i>		
<i>Effect</i>												
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	a ④	b ④		∞ ④	d ④		e ④	f x		g ④	h ④	
7210 Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae* Priority feature	a ④	b ④		c ④	d ④		e ④	f ④		g ④	h ④	
1149 Spined loach <i>Cobitis taenia</i>	a ④	b ④		c ④	d ④		e ④	f ④		g ④	h ④	
1166 Great crested newt <i>Triturus cristatus</i>	a ④	b ④		c ④	d ④		e ④	f ④		g ④	h ④	

**Evidence supporting conclusions:**

- a. The Cambridge Water Cycle Strategy 2011 states that analysis of hydrology indicates that Wicken Fen, in which Fenland SAC is located, is topographically higher than the Cam and drains via Wicken Lode then Burwell Lode towards it. As the Cam does not feed it, there are no associated risks, which could arise from additional sewage effluent discharge at Cambridge irrespective of any changes in effluent flow or quality from that site and no LSE is expected to occur. Therefore, Fenland SAC will not be progressed to Stage 2: Appropriate Assessment.

Name of European site and designation: Wicken Fen Ramsar Site												
EU Code: UK11077												
Distance to Proposed Development: 4.72km												
European site features	Likely effects of Proposed Development											
Effect	Alterations to water quality due to pollution events			Alterations to water quality due to changes in water chemistry			Alterations to water quantity			In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Ramsar Criterion 1 – peat fen habitats	a ④	b ④		c ④	d ④		e ④	f ④		g ④	h ④	
Ramsar Criterion 2 - Red Data book plant fen violet <i>Viola persicifolia</i> , eight nationally scarce plants and 121 British Red Data Book invertebrates	a ④	b ④		c ④	d ④		e ④	f ④		g ④	h ④	

**Evidence supporting conclusions:**

- a. The Cambridge Water Cycle Strategy 2011 (Stantec, 2021) states that analysis of hydrology indicates that Wicken Fen, in which Fenland SAC is located, is topographically higher than the Cam and drains via Wicken Lode then Burwell Lode towards it. As the Cam does not feed it, there are no associated risks, which could arise from additional sewage effluent discharge at Cambridge irrespective of any changes in

effluent flow or quality from that site and no LSE is expected to occur. Therefore, Wicken Fen Ramsar site will not be progressed to Stage 2: Appropriate Assessment.

Name of European site and designation: Devil's Dyke SAC													
EU Code: UK0030037													
Distance to Proposed Development: 8.97km													
European site features		Likely effects of Proposed Development											
Effect		Deposition of nitrogen			Deposition of dust			In combination effects					
Stage of Development		C	O	D	C	O	D	C	O	D	C	O	D
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)		a ✓	b ④		c ④	d ④		e ✓	f ④				

**Evidence supporting conclusions:**

a. The size of the fleet of vehicles to be used during construction, they type of vehicles, and their routes to the construction site, are as yet unknown. It is therefore not yet possible to screen out any LSE due to increases in nitrogen deposition during the construction phase. The adjacent A14 may experience an increase in vehicle numbers during construction that causes an unacceptable increase in rates of nitrogen deposition on the species/habitats within this habitats site.

b. During operation, production of nitrogen during any combustion process is not likely to cause any LSE, due to the distance between Proposed Development and the habitats site. The SSSI Impact Zone for combustion does not reach the Proposed Development.

c. During construction, dust creation is not likely to affect this habitats site; the construction site is nearly 9km away, significantly further than airborne dust would be expected to travel.

- d. During operation, the Proposed Development is not predicted to produce any dust.
- e. During construction, there may be an increase in vehicles on the adjacent A14 that could cause an unacceptable increase in rates of nitrogen deposition on the species/habitats within this habitats site in combination with other plans, policies and projects.
- f. During operation, no in-combination effects are predicted that would cause LSE on this habitats site.

Name of European site and designation: Eversden and Wimpole Woods SAC													
EU Code: UK0030037													
Distance to Proposed Development: 14.97km													
European site features		Likely effects of Proposed Development											
Effect		Disturbance/damage to roosts (summer and hibernation)			Disturbance/damage to commuting/foraging areas			In combination effects					
Stage of Development		C	O	D	C	O	D	C	O	D	C	O	D
1308 Barbastelle <i>Barbastella</i> <i>barbastellus</i>		a x	a ④		b ✓	b ✓		b ✓	b ✓				

**Evidence supporting conclusions:**

a. The Proposed Development is over 14km from the SAC site. Barbastelle bats are known to have large ranges, so the distance between the Proposed Development and the habitats site does not rule out LSE. However, the connectivity between the two is impeded to a certain extent by the city of Cambridge, and the habitats affected by the project are generally of low suitability for barbastelles. The bat surveys to date have not identified any barbastelle roosts. No LSEs on bat roosts are therefore predicted. b. It has not been possible to rule out impacts to foraging and commuting based purely on distance criteria, either for the impacts of the project alone or in-combination. LSE on bat commuting/foraging areas is therefore predicted at this stage and Eversden and Wimpole Woods SAC will be progressed to Stage 2: Appropriate Assessment.

Name of European site and designation: The Wash and North Norfolk Coast SAC												
EU Code: UK17075												
Distance to Proposed Development: 70.3km												
European site features	Likely effects of Proposed Development											
Effect	Alterations to water quality due to pollution events			Alterations to water quality due to changes in water chemistry			In combination effects					
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
1110 Sandbanks which are slightly covered by sea water all the time	A ✓	B ④		C ④	D ✓		E ✓	F ✓				
1140 Mudflats and sandflats not covered by seawater at low tide	A ✓	B ④		C ④	D ✓		E ✓	F ✓				
1160 Large shallow inlets and bays	A ✓	B ④		C ④	D ✓		E ✓	F ✓				
1170 Reefs	A ✓	B ④		C ④	D ✓		E ✓	F ✓				
1310 <i>Salicornia</i> and other annuals colonizing mud and sand	A ✓	B ④		C ④	D ✓		E ✓	F ✓				



Name of European site and designation: The Wash and North Norfolk Coast SAC											
EU Code: UK17075											
Distance to Proposed Development: 70.3km											
European site features	Likely effects of Proposed Development										
Effect	Alterations to water quality due to pollution events			Alterations to water quality due to changes in water chemistry			In combination effects				
1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	A ✓	B ④		C ④	D ✓		E ✓	F ✓			
1420 Mediterranean and thermo-Atlantic halophilous scrubs ( <i>Sarcocornetea fruticosi</i> )	A ✓	B ④		C ④	D ✓		E ✓	F ✓			
1150 Coastal lagoons	A ✓	B ✓		C ④	D ✓		E ✓	F ✓			
1365 Harbour seal <i>Phoca vitulina</i>	A ✓	B ✓		C ④	D ✓		E ✓	F ✓			
1355 Otter <i>Lutra lutra</i>	A ✓	B ✓		C ④	D ✓		E ✓	F ✓			

**Evidence supporting conclusions:**

- a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying habitats and species of the habitats site. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.
- b. During operation, no changes to water quality due to pollution events are predicted. However the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore LSE cannot be ruled out at this stage.
- c. During construction, no changes to water quality due to changes in water chemistry are predicted.
- d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of waste water as currently. However the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore LSE cannot be ruled out at this stage.
- e. During construction, the effects of other plans, policies and projects acting in combination with the construction-phase effects of the Proposed Development to cause LSE cannot be ruled out.
- f. During operation, the changes in water chemistry due to the discharge of waste water may act in-combination with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying habitats and species of the habitats site cannot be ruled out.

<b>Name of European site and designation: The Wash SPA</b>												
<b>EU Code: UK9008021</b>												
<b>Distance to Proposed Development: 70.3km</b>												
<b>European site features</b>	<b>Likely effects of Proposed Development</b>											
<i>Effect</i>	<i>Effects on bird species due to alterations to water quality due to pollution events</i>			<i>Effects on bird species due to alterations to water quality due to changes in water chemistry</i>			<i>In combination effects</i>					
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Article 4.1 Breeding season bird species (1)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 4.1 Overwintering season bird species (2)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 4.2 Overwintering bird species (3)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 2.4 Assemblages of International Importance (Overwintering) (4)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				

1. Article 4.1 Qualification: During the breeding season the area regularly supports: Little tern, *Sterna albifrons*, Common tern, *Sterna hirundo*

2. Article 4.1 Qualification: Over winter the area regularly supports: Bewick's swan, *Cygnus columbianus bewickii*, Bar-tailed godwit, *Limosa lapponica*

3. Article 4.2 Qualification: Over winter the area regularly supports: Pintail, *Anas acuta*, Wigeon, *Anas Penelope*, Gadwall, *Anas strepera*, Pink-footed goose, *Anser brachyrhynchus*, Turnstone, *Arenaria interpres*, Brent goose, *Branta bernicla bernicla*, Goldeneye, *Bucephala clangula*, Sanderling, *Calidris alba*, Dunlin, *Calidris alpina alpina*, Knot, *Calidris canutus*, Eurasian oystercatcher, *Haematopus ostralegus*, Black-tailed godwit, *Limosa limosa islandica*, Common scoter, *Melanitta nigra*, Curlew, *Numenius arquata*, Grey plover, *Pluvialis squatarola*, Shelduck, *Tadorna tadorna*, Redshank, *Tringa tetanus*

4. Article 4.2 Qualification: An Internationally Important Assemblage of Birds: Over winter the area regularly supports 400367 waterfowl (5 year peak mean 1991/92-1995/96) Including Bewick's swan, *Cygnus columbianus bewickii*, Pink-footed goose, *Anser brachyrhynchus*, Brent goose, *Branta bernicla bernicla*, Shelduck, *Tadorna tadorna*, Wigeon, *Anas Penelope*, Gadwall, *Anas strepera*, Pintail, *Anas acuta*, Common scoter, *Melanitta nigra*, Goldeneye, *Bucephala clangula*, Eurasean oystercatcher, *Haematopus ostralegus*, Grey plover, *Pluvialis squatarola*, Knot, *Calidris canutus*, Sanderling, *Calidris alba*, Dunlin, *Calidris alpina alpina*, Black-tailed godwit, *Limosa limosa islandica*, Bar-tailed godwit, *Limosa lapponica*, Curlew, *Numenius arquata*, Redshank, *Tringa tetanus*, Turnstone, *Arenaria interpres*

**Evidence supporting conclusions:**

a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying species of the habitats site. Pollution could affect the individuals themselves, their food source/prey and/or their habitats used for foraging, roosting etc. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.

b. During operation, no changes to water quality due to pollution events are predicted. However, the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore LSE cannot be ruled out at this stage.

c. During construction, no changes to water quality due to changes in water chemistry are predicted.

d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of wastewater as currently. However, the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore, LSE cannot be ruled out at this stage.

e. During construction, the effects of other plans, policies and projects acting in combination with the construction-phase effects of the Proposed Development to cause LSE cannot be ruled out.

f. During operation, the changes in water chemistry due to the discharge of wastewater may act in-combination with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying habitats and species of the habitats site cannot be ruled out.

Name of European site and designation: The Wash Ramsar Site												
EU Code: UK11072												
Distance to Proposed Development: 70.3km												
European site features	Likely effects of Proposed Development											
Effect	Effects on qualifying criteria due to alterations to water quality due to pollution events			Effects on qualifying criteria due to alterations to water quality due to changes in water chemistry			In combination effects					
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Ramsar criterion 1 – habitats present	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Ramsar criterion 3 – ineter-relationships between habitats	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Ramsar criterion 5 – Species with peak counts in winter, 292541 waterfowl	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Ramsar criterion 6 - Species with peak counts in spring/autumn	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				

Name of European site and designation: The Wash Ramsar Site												
EU Code: UK11072												
Distance to Proposed Development: 70.3km												
European site features		Likely effects of Proposed Development										
Effect		Effects on qualifying criteria due to alterations to water quality due to pollution events			Effects on qualifying criteria due to alterations to water quality due to changes in water chemistry			In combination effects				
Ramsar criterion 6 - Species with peak counts in winter		A ✓	B ✓		C ④	D ✓		E ✓	F ✓			
Ramsar criterion 6 for future consideration - Species with peak counts in spring/autumn		A ✓	B ✓		C ④	D ✓		E ✓	F ✓			
Ramsar criterion 6 for future consideration - Species with peak counts in winter		A ✓	B ✓		C ④	D ✓		E ✓	F ✓			

**Evidence supporting conclusions:**

- a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying species of the habitats site. Pollution could affect the individuals themselves, their food source/prey and/or their habitats used for foraging, roosting etc. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.
- b. During operation, no changes to water quality due to pollution events are predicted. However, the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore, LSE cannot be ruled out at this stage.
- c. During construction, no changes to water quality due to changes in water chemistry are predicted.
- d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of wastewater as currently. However, the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore, LSE cannot be ruled out at this stage.
- e. During construction, the effects of other plans, policies and projects acting in combination with the construction-phase effects of the Proposed Development to cause LSE cannot be ruled out.
- f. During operation, the changes in water chemistry due to the discharge of wastewater may act in-combination with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying habitats and species of the habitats site cannot be delete empty pages ruled out.



Name of European site and designation: Ouse Washes SAC													
EU Code: UK0013011													
Distance to Proposed Development: 14.1 km													
European site features		Likely effects of Proposed Development											
<i>Effect</i>		<i>Alterations to water quality due to pollution events</i>			<i>Alterations to water quality due to changes in water chemistry</i>			<i>Alterations to water quantity</i>			<i>In combination effects</i>		
<i>Stage of Development</i>		<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
<b>Annex II species – Spined loach (<i>Cobitis taenia</i>)</b>		A ✓	B ✓		C ④	D ✓		E ④	F ④		G ✓	H ✓	

**Evidence supporting conclusions:**

- a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying habitats and species of the habitats site. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.
- b. During operation, no changes to water quality due to pollution events are predicted. However, the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore, LSE cannot be ruled out at this stage.
- c. Aside from potential changes to water quality due to pollution events, no changes to water chemistry are predicted during the construction phase, that could affect the qualifying habitats or species.

- d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of wastewater as currently. However, the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore, LSE cannot be ruled out at this stage.
- e. During construction, no alterations to water quantity due to the Proposed Development are predicted.
- f. During operation, no alterations to water quantity due to the Proposed Development are predicted.
- g. During operation, the changes in water chemistry due to the pollution events may act in-combination 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 cannot be ruled out.
- h. During operation, the changes in water chemistry due to the discharge of waste water may act in-combination 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 cannot be ruled out until it is known how the plant will operate at predicted levels and control mechanisms if this is exceeded. For example, the increase in water discharged from the Proposed Development may increase due to plans such as the large development of housing etc at Waterbeach, which will feed into the Proposed Development.

<b>Name of European site and designation: Ouse Washes SPA</b>												
<b>EU Code: UK9008041</b>												
<b>Distance to Proposed Development: 14.1 km</b>												
<b>European site features</b>	<b>Likely effects of Proposed Development</b>											
<i>Effect</i>	<i>Effects on bird species due to alterations to water quality due to pollution events</i>			<i>Effects on bird species due to alterations to water quality due to changes in water chemistry</i>			<i>In combination effects</i>					
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Article 4.1 Breeding season bird species (1)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 4.1 Overwintering season bird species (2)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 4.2 Overwintering bird species (3)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				
Article 4.2 Assemblages of International Importance (Overwintering) (4)	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				

Ouse Washes qualifies under Article 4.1 (79/409/EEC) because over winter the area regularly supports 1.6% of the GB population of Northern harrier (*Circus cyaneus*), 64.4% of the GB population of Tundra Swan (*Cygnus columbianus bewickii*), 17.2% of the GB population of Whooper swan (*Cygnus cygnus*) and 19.6% of the GB population of Ruff (*Philomachus pugnax*).

Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC) because during the breeding season the area regularly supports 15.5% of the GB population of Northern shoveler (*Anas clypeata*), 0.9% of the GB population of Mallard (*Anas platyrhynchos*), 93.3% of the GB population of Garganey (*Anas querquedula*), 14.4% of the GB population of Gadwall (*Anas strepera*) and 89.7% of the GB population of Black-tailed Godwit (*Limosa limosa*).

Over winter the area regularly supports 2.9% of the total population of Northern pintail (*Anas acuta*), 1.7% of the total population of Northern shoveler (*Anas clypeata*), 0.8% of the total population of Eurasian teal (*Anas crecca*), 2.4% of the total population of Eurasian wigeon (*Anas Penelope*), 4.2% of the GB population of Gadwall (*Anas strepera*), 7.2% of the GB population of Common pochard (*Aythya farina*), 1.6% of the GB population of Tufted duck (*Aythya fuligula*), 2.4% of the GB population of Mute swan (*Cygnus olor*), 1.9% of the GB population of Eurasian coot (*Fulica atra*) and 2% of the GB population of Great cormorant (*Phalacrocorax carbo*).

Ouse Washes qualifies under Article 4.2 qualification (79/409/EEC): an internationally important assemblage of birds because over winter the area regularly supports 64428 waterfowl including Great cormorant (*Phalacrocorax carbo*), Tundra swan (*Cygnus columbianus bewickii*), Whooper swan (*Cygnus cygnus*), Eurasian wigeon (*Anas Penelope*), Gadwall (*Anas strepera*), Eurasian teal (*Anas crecca*), Northern pintail (*Anas acuta*), Northern shoveler (*Anas clypeata*), Common pochard (*Aythya farina*), Tufted duck (*Aythya fuligula*), Eurasian coot (*Fulica atra*) and Ruff (*Philomachus pugnax*).

#### **Evidence supporting conclusions:**

a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying species of the habitats site. Pollution could affect the individuals themselves, their food source/prey and/or their habitats used for foraging, roosting etc. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.

- b. During operation, no changes to water quality due to pollution events are predicted. However, the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore, LSE cannot be ruled out at this stage.
- c. During construction, no changes to water quality due to changes in water chemistry are predicted.
- d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of wastewater as currently. However, the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore, LSE cannot be ruled out at this stage.
- e. During construction, the effects of other plans, policies and projects acting in combination with the construction-phase effects of the Proposed Development to cause LSE cannot be ruled out.
- f. During operation, the changes in water chemistry due to the discharge of wastewater may act in-combination with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying habitats and species of the habitats site cannot be ruled out.

Name of European site and designation: Ouse Washes Ramsar Site

EU Code: UK11051

Distance to Proposed Development: 14.1 km

European site features	Likely effects of Proposed Development											
<i>Effect</i>	<i>Effects on qualifying criteria due to alterations to water quality due to pollution events</i>			<i>Effects on qualifying criteria due to alterations to water quality due to changes in water chemistry</i>			<i>In combination effects</i>					
<i>Stage of Development</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Ramsar criterion 1: The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.	A ✓	B ✓		C ④	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 <i>Libellula fulva</i> and the rifle beetle <i>Oulimnius major</i> . The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.	A ✓	B ✓		C ④	D ✓		E ✓	F ✓				

Name of European site and designation: Ouse Washes Ramsar Site												
EU Code: UK11051												
Distance to Proposed Development: 14.1 km												
European site features		Likely effects of Proposed Development										
Effect		Effects on qualifying criteria due to alterations to water quality due to pollution events			Effects on qualifying criteria due to alterations to water quality due to changes in water chemistry			In combination effects				
Ramsar criterion 5: Assemblages of international importance: Species with peak counts in winter: 59133 waterfowl (5 year peak mean 1998/99-2002/2003)		A ✓	B ✓		C ④	D ✓		E ✓	F ✓			
Ramsar criterion 6: Species/populations identified subsequent to designation for possible future consideration.		A ✓	B ✓		C ④	D ✓		E ✓	F ✓			

**Evidence supporting conclusions:**

a. Any pollution events during the construction of the new outfall and the decommissioning of the existing outfall have the potential to cause likely significant effects on the downstream qualifying species of the habitats site. Pollution could affect the individuals themselves, their food source/prey and/or their habitats used for foraging, roosting etc. It is noted that the distance between the Proposed Development and the habitats site is not insignificant, but at this stage, we cannot use distance to rule out any LSE.

- b. During operation, no changes to water quality due to pollution events are predicted. However, the possibility of storm discharges causing periodic worsening of water quality/ pollution events; especially with increasing instability of climate and risk of extreme weather events due to climate change. Therefore, LSE cannot be ruled out at this stage.
- c. During construction, no changes to water quality due to changes in water chemistry are predicted.
- d. During operation, no changes to water quality are predicted, as the Proposed Development will be dealing with the same volume of wastewater as currently. However, the mechanisms preventing this from exceeding predicted levels in the future are unknown, and so there is no certainty of this remaining the case. Therefore, LSE cannot be ruled out at this stage.
- e. During construction, the effects of other plans, policies and projects acting in combination with the construction-phase effects of the Proposed Development to cause LSE cannot be ruled out.
- f. During operation, the changes in water chemistry due to the discharge of wastewater may act in-combination with other plans, policies and projects to alter water chemistry to the extent where likely significant effects on the downstream qualifying habitats and species of the habitats site cannot be ruled out.



## Get in touch

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You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambridge-waste-water-treatment-plant-relocation/>