Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Appendix 8.18: Wildlife Hazard Management Plan

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Contents

Tables

Abbreviations

AOA	Airport Operators' Association
ASM	Aerodrome Services Manual
AW	Anglian Water Services Ltd
BSMP	Birdstrike Management Plan
CAA	Civil Aviation Authority
CCA	Cambridge City Airport
CoCP	Code of Construction Practice
CWS	County Wildlife Site
ECoW	Ecological Clerk of Works
IBSC	International Birdstrike Committee
ICAO	International Civil Aviation Organisation
HGV	Heavy Goods Vehicle
LERMP	Landscape Ecology and Recreation Management Plan
NNR	National Nature Reserve
RWY	Runway
SAC	Special Area of Conservation
SARPS	Standards and Recommended Practices
SSSI	Site of Special Scientific Interest
STS	Sludge Treatment Centre
SuDS	Sustainable Drainage System
UK CAA	UK Civil Aviation Authority
WRC	Water Recycling Centre
WWTP	Waste Water Treatment Plant (refers to the proposed new plant or the existing plant in Cambridge, depending on the context)

Summary

This Wildlife Hazard Management Plan (also referred to as a Birdstrike Management Plan (BSMP)) applies to all activities undertaken by Anglian Water Services Ltd ('The Applicant') and its contractors relating to the construction and operation of the Proposed Development. It describes how The Applicant, and its contractors will manage any enhanced risk of birdstrike issues for aircraft using Cambridge City Airport (CCA) resulting from the creation or enhancement of any landscape features and habitats that may potentially attract bird species of birdstrike concern during construction and operation of the Proposed Development.

This document provides:

- a background to the Proposed Development;
- a summary of internationally accepted policy and guidance in relation to birdstrike risk within the vicinity of aerodromes and the obligations and responsibilities of The Applicant;
- a summary of baseline bird activity in the vicinity, the expected species of birdstrike risk and existing sites and habitats in the area that currently contribute to a baseline level of birdstrike risk for CCA;
- a risk assessment of species and potential changes in habitat that may enhance birdstrike risk for CCA and
- clarification of the requirement for clear lines of communication between The Applicant (and its contractors) and CCA during both construction and operational phases of the Proposed Development.

1 Introduction

1.1 Anglian Water Services Limited

1.1.1 Anglian Water Services Limited ('The 'Applicant') is the largest regulated water and water recycling company in England and Wales by geographic area, supplying water and water recycling services to almost seven million people in the East of England and Hartlepool.

1.1.2 The Applicant is committed to bringing environmental and social prosperity to the region they serve, through their commitment to Love Every Drop. As a purpose-led business, The Applicant seeks to contribute to the environmental and social wellbeing of the communities within which they operate. As one of the largest energy users in the East of England, they are also committed to reaching net zero carbon emissions by 2030.

1.2 Background

1.2.1 The Applicant is proposing to build a modern, low carbon waste water treatment for Greater Cambridge on a new site area north of the A14 between Fen Ditton and Horningsea within the Cambridge drainage catchment area, to replace the plant on Cowley Road, hereafter referred to as the existing Cambridge Waste Water Treatment Plant (WWTP).

1.2.2 The relocation will enable South Cambridgeshire District Council and Cambridge City Council's long held ambition to develop a new low-carbon city district on Cambridge's last major brownfield site, known as North East Cambridge. The site is an important component of the First Proposals (preferred options) for the new Greater Cambridge Local Plan that were subject to public consultation late last year. The North East Cambridge Area Action Plan has also recently been agreed by the Councils in its Proposed Submission form and will be subject to public consultation prior to submission, once the Development Consent Order is determined. The relocation of the existing waste water treatment facility will enable this new district to come forward and deliver 8,350 homes, 15,000 new jobs and a wide range of community, cultural and open space facilities in North East Cambridge. Further details on this can be found in our Statement of Requirement (Application Document Reference 7.2) which was published in September 2019.

1.2.3 The relocation of the waste water treatment plant will also allow The Applicant to continue providing vital waste water services to customers across Cambridge and Greater Cambridge. The new plant will continue storing and treating storm flows and treating sludge to produce renewable energy. It will be designed to deal with a growing population. It offers the opportunity for a joined-up solution for treating waste water from Cambridge and Greater Cambridge, including Waterbeach. The proposal is for both waste water from the existing Waterbeach waste water treatment plant and future flows from Waterbeach New Town to be treated at the proposed Cambridge waste water treatment plant.

1.2.4 The Proposed Development will be the first waste water project to seek a Development Consent Order that is not specifically named in the National Policy Statement (NPS). 'The Applicant' sought and obtained a direction from the Secretary of State under section 35 of the Planning Act 2008 ("the 2008 Act") that the project is to be treated as development of national significance.

1.3 The Proposed Development

1.3.1 This section provides a high-level summary of the Proposed Development. The term Proposed Development refers to the Cambridge Waste Water Treatment Plant (WWTP) Relocation project in its entirety and all works associated with the development.

1.3.2 A detailed description of the Proposed Development can be found in Chapter 2 of the Environmental Statement (Application document reference 5.2.2).

1.3.3 The purpose of the proposed WWTP will be to treat all waste water and wet sludge from the Cambridge catchment just as the existing Cambridge WWTP currently does, plus that from the growth indicated and being planned within the catchment in the Local Plan to 2041, with ability to expand beyond to deal with further growth.

1.3.4 As part of its statutory function, the Applicant operates the existing Cambridge WWTP. The existing Cambridge WWTP receives waste water from the Cambridge catchment either directly from the connected sewerage network or tankered to the plant from homes and businesses that are not connected. This waste water is then treated and the treated effluent discharged through an outfall to the nearby River Cam. 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.

1.3.5 The Waterbeach New Town development lies to the north of Cambridge. When built out Waterbeach new town will comprise some 11,000 new homes along with associated business, retail, community and leisure uses. Waste water from Waterbeach will ultimately be treated by the proposed Cambridge WWTP once operational. However, the rate of development at Waterbeach New Town may require a new pipeline (rising main) to be built from Waterbeach to the existing Cambridge WWTP to allow treatment of waste water in advance of the proposed WWTP becoming operational. In that case, either a later connection would be made to the proposed WWTP from a point on the pipeline route, or flows diverted from the existing Cambridge WWTP via the transfer tunnel.

1.3.6 In summary the Proposed Development will comprise of:

- an integrated waste water and sludge treatment plant.

- a shaft to intercept waste water at the existing Cambridge WWTP on Cowley Road and a tunnel/ pipeline to transfer it to the proposed WWTP and terminal pumping station. Temporary intermediate shafts to launch and recover the micro-tunnel boring machine.
- a gravity pipeline transferring treated waste water from the proposed WWTP to a discharge point on the River Cam and a pipeline for storm water overflows.
- a twin pipeline transferring waste water from Waterbeach to the existing Cambridge WWTP, with the option of a connection direct in to the proposed WWTP when the existing works is decommissioned.
- ancillary on-site buildings, including a Gateway Building with incorporated Discovery Centre, substation building, workshop, vehicle parking including electrical vehicle charging points, fencing and lighting.
- environmental mitigation and enhancements including substantial biodiversity net gain, improved habitats for wildlife, extensive landscaping, a landscaped earth bank enclosing the proposed WWTP, climate resilient drainage system and improved recreational access and connectivity.
- Renewable energy generation via anaerobic digestion which is part of the sludge treatment process that produces biogas designed to be able to feed directly into the local gas network to heat homes, or as an alternative potential future option burnt in combined heat and power engines.
- renewable energy generation via solar photovoltaic and associated battery energy storage system.
- other ancillary development such as internal site access, utilities, including gas, electricity and communications and connection to the site drainage system.
- a new vehicle access from Horningsea Road including for Heavy Goods Vehicles (HGV's) bringing sludge onto the site for treatment and other site traffic.

2 Wildlife Hazard Management

2.1 Background

Wildlife hazards at aerodromes

2.1.1 Aircraft are vulnerable to wildlife strike risk. Although species such as deer, badgers and foxes can cause safety concerns, birds are the most problematic in the UK. The vast majority of birdstrikes occur on or close to aerodromes and aerodrome operators are bound by a number of regulations (AOA, 2016).

2.1.2 Birdstrike can be defined as a collision between free-living wild birds and anthropogenic structures, vehicles or aircraft. The main concern is usually collision with aircraft, particularly where birds hit windscreens or fly into aircraft engines.

2.1.3 Not all bird species present the same strike hazard. The weight, size and wing loading of individual species all affect the risk and consequences of a birdstrike on an aircraft. The larger the bird and the greater the number of birds hitting an aircraft the greater the risk of serious damage occurring.

2.1.4 Aerodrome operators typically establish a safeguarding zone within 13km because: (1) most birds are found below an altitude of 2,000ft; and (2) on a standard approach to an aerodrome, aircraft will reach 2,000ft at a distance of 13 km (AOA, 2016).

2.1.5 Accordingly, “it is the aerodrome operator’s responsibility to determine and manage the effectiveness of its off-airfield wildlife hazard ‘safeguarding’ policies, practices and procedures” (CAA, 2017). This may include establishing a process for consultation on proposed developments that have the potential to attract wildlife within 13 km of the aerodrome.

2.1.6 The order limits at their closest point are 1050m to the northern end of the CCA boundary.

2.1.7 Taking into account the distance separating the Proposed Development from CCA and the fact that birds are the most problematic wildlife hazard to air safety in the UK, this Wildlife Hazard Management Plan (WHMP) focuses on the management of birdstrike only.

2.1.8 This Wildlife Hazard Management Plan (WHMP) describes how the Applicant and its contractors will construct and operate the Proposed Development so as not increase the existing level of birdstrike potential for CCA.

2.1.9 The outline measures described in this document are intended to ensure that the airfield safeguarding obligations of The Applicant and its contractors will be met. It will apply throughout the existence of the Proposed Development or as long as CCA continues to be operational. These obligations will be passed to any subsequent owners of title to the land, or parts thereof.

2.1.10 A detailed WHMP will be prepared by the appointed contractor and the Applicant for construction and operation phases respectively. The construction plan will be

prepared prior to commencement of works, and the operation plan prior to completion of the landscape masterplan completion. Each plan will be in accordance with the Requirements in Schedule 2 of the draft Development Consent Order (DCO).

Requirement for a risk assessment of the Proposed Development

2.1.11 Waste water treatment facilities, by their operational nature, may have the potential to attract substantial aggregations of bird species associated with the risk of birdstrike. Any increase in the number of such species on, or directly over the site will result in increased risk to aircraft.

2.1.12 In order to maintain a continuous reduction in the numbers and types of hazardous birds (and other wildlife) on and in the vicinity of aerodromes, wildlife habitat management is necessary.

2.1.13 A risk assessment is completed in order to understand the aspects of the Proposed Development that may result in a change to the abundance and types of birds within the safeguarding zone. The findings can then be used to define mitigation measures to reduce the risk.

2.1.14 CAP 772: Wildlife Hazard Management at Aerodromes (ICAO, 2017) (explained further in Section 3 (Regulation And Guidance), produced by the UK Civil Aviation Authority (CAA), provides guidance to enable UK airports to meet regulations. The guidance concentrates on bird control on aerodromes, but also touches on landscaping measures and waste management.

2.1.15 Typical measures employed to fulfil the recommendations of CAP 772 include:

- maintenance of a long grass policy (LGP). It has been shown that grass maintained at a height of 200-300mm is effective in reducing the presence of upright stems and the majority of hazardous bird species;
- balancing/pollution control ponds and ditches are likely to attract waterbirds and, where practicable, should be bird-proofed, i.e., covered or netted;
- timing of ground works should be carefully planned to ensure ground is reinstated with full grass cover well before the onset of the winter period when the largest concentrations of hazardous bird species are likely to occur; and
- trees have the potential to attract nesting birds in significant numbers. Any trees planted within the immediate surroundings of CAA may need to be managed to reduce their nesting potential.
- Monitoring of new buildings, structures and landscaped area for nesting birds and action taken to remove any hazardous species.

2.2 Responsibilities

2.2.1 In relation to the control and management of the general ecology, the appointed contractor shall establish the appropriate roles and responsibilities for site staff in accordance with the roles and responsibilities set out in Section 3 of the CoCP Part A (Application Document Refence 5.4.2.1). This will also include the preparation and implementation of a construction phases WHMP.

2.2.2 Once operational The Applicant will appoint site staff responsible for the control and management of the proposed WWTP including the implementation of the Landscape Ecology and Recreation Management Plan (LERMP) (Application Document Reference 5.4.8.14). This will also include the preparation and implementation of an operational WHMP.

2.3 Plan purpose

2.3.1 The objectives of this document are to:

- summarise the species of birdstrike risk known to be present within the safeguarding zone of CCA;
- provide specific advice and guidance that The Applicant and its appointed contractors must follow so as ensure there will be no increase in the existing level of birdstrike risk within the safeguarding zone as a result of the construction and operation of the Proposed Development; and
- set out specific procedures for The Applicant in relation to the operation and maintenance of the Proposed Development to ensure that continues to be no increase in the existing level of birdstrike risk within the safeguarding zone throughout the existence of the Proposed Development and as long as CCA continues to be operational.

2.4 Report structure

2.4.1 The information contained within this document identifies the potential hazards which could occur during the detailed design of the landscaping and construction phases of the Proposed Development and considers the likelihood of the hazards occurring, proposed measures to minimise the risks of bird hazard such as through bird avoidance measures. These measures would be applicable to the construction stage including detailed design and the operational phase including the maintenance of the landscaping surrounding the proposed WWTP with the aim of reducing any residual risk to 'As Low as Reasonably Practicable'.

2.4.2 The structure of this report is as follows:

- details of consultation with the airport operator

- a review of published guidance and planning policy relevant to aviation safeguarding, birdstrike, its management and relationship landscaping and waste water treatment facilities
- a description of the assessment approach taken and any limitations
- description of the current conditions (baseline) of the off – airfield area;
- identification of the risks likely to affect the risk of birdstrike;
- details of the proposed mitigation measures and assessment of the likelihood of birdstrike within the safeguarding zone of Cambridge Airport arising from all stages of the Proposed Development; and
- conclusions and recommendations.

2.5 Consultation with Cambridge Airport

2.5.1 For a consenting application that lies within the 13km safeguarding zone, the owner or operator of aerodromes are required to be consulted by the Applicant in order to consider the potential birdstrike hazard as a result of a proposed development.

2.5.2 The content of this document and the wider construction and operation of the Proposed Development has been informed and guided by consultation with CAA to minimise the disruption and the introduction of risk to aircraft using the airport.

2.5.3 CAA were consulted prior to the DCO application in relation to the Proposed Development including aerodrome safeguarding and the hazards represented by wildlife and planting. During stakeholder engagement for the Proposed Development, Marshall Group (MG) on behalf of CCA raised concern about the Proposed Development and the risk of attracting large birds into the area through construction and operational activities. Such birds could pose a risk for aircraft using CCA controlled airspace and requested that an appropriate bird hazard assessment is carried out.

3 Regulation and Guidance

3.1 International Aerodrome Safeguarding Requirements

3.1.1 The International Civil Aviation Organisation (ICAO) sets overarching Standards and Recommended Practices (SARPS) that are followed by airport operators in the majority of countries worldwide.

3.1.2 Although ICAO's standards are general outline strategies, they establish the requirements for aviation safety and include provisions for wildlife hazard management. ICAO use the definition of 'shall', as meaning "where uniform application is essential" and 'should', defined as "where variation in details would not be an impediment to successful application". These are important definitions as although they outline the requirement to comply with these SARPS they also allow provide an airport latitude in terms of how in responds to the guidance. This requires an airport to deliver the SARPS at the same time as demonstrating how any actions or processes they implement prevent a potential increase in, e.g. birdstrike risk should these vary from standard guidance (ICAO, 2022).

3.1.3 ICAO also utilises reports produced by the International Birdstrike Committee (IBSC). The IBSC produce their own standards material that are referred to within the ICAO Aerodrome Services Manual (ASM). The ASM concludes that "airport authorities should seek to have an input into (new) planning decisions and land use practices within the 13km bird circle for any development that may attract significant numbers of hazardous birds/wildlife" (ICAO, 2020).

3.2 UK Regulation (EU) 139/2014

3.2.1 UK Regulation (EU) 139/2014 sets out the regulatory framework, laying out the requirements and administrative procedures related to aerodromes, and is administered by the UK CAA. Sections relevant to wildlife management at aerodromes are as follows:

- Article 9 Monitoring of aerodrome surroundings
  - The Secretary of State shall ensure that consultations are conducted with regard to human activities and land use such as::
    - (e) the creation of areas that might encourage wildlife activity harmful to aircraft operations.
- Article 10 Wildlife hazard management
  - The CAA shall ensure that wildlife strike hazards are assessed through:
    - a) the establishment of a national procedure for recording and reporting wildlife strikes to aircraft;
    - b) the collection of information from aircraft operators, aerodrome personnel and other sources on the presence of

wildlife constituting a potential hazard to aircraft operations; and

- c) an ongoing evaluation of the wildlife hazard by competent personnel.

– 2) The CAA shall ensure that wildlife strike reports are collected and forwarded to ICAO for inclusion in the ICAO Birdstrike Information System (IBIS) database.

3.3 UK Aerodrome Safeguarding Requirements

3.3.1 CAP772 (ICAO, 2017), produced by the UK CAA, provides guidance material to enable UK airports to meet regulations. CAP772 is an authoritative guide and is the first document used by the regulator and insurance companies to test compliance when assessing wildlife strike incidents at aerodromes. Aerodrome operators are therefore expected to comply fully with CAP772 to demonstrate both to insurance companies and the UK CAA/ICAO that they meet their obligations in relation to flight safety SARPS.

3.3.2 Relevant guidance within CAP772 includes Safeguarding Systems. Such systems need to be in place to guard against novel or enhanced risk of wildlife hazard resulting from developments on and in proximity to an aerodrome. Details are required in terms of the activities used by the aerodrome operator to control or influence areas beyond the boundary of the airfield, in the vicinity of the aerodrome (up to the 13 km and sometimes either beyond or less than 13km, as determined by risk assessments and the effectiveness of interventions), and where practicable, could include:

- Establishment of a process with local planning authorities for consultation on proposed developments that have the potential to be a wildlife attractant within 13 km of the airport.
- Means to influence land use and development surrounding the aerodrome such that the strike risk does not increase and, where practicable, is reduced.
- Means to help encourage landowners to adopt wildlife control measures and support landowners' efforts to reduce wildlife strike risks, via land use agreements.
- Procedures to conduct and record the results of off-airport site monitoring visits.

3.4 National: Department of Transport/Office for the Deputy Prime Minister (ODPM) Circular 1/2003

3.4.1 Department for Transport / Office of the Deputy Prime Minister Circular 1/2003 - advice to consenting authorities on safeguarding aerodromes and military explosives storage areas - places responsibility with aerodrome operators to take all reasonable

steps to ensure that the aerodrome and its surrounding airspace are safe at all times for use by aircraft.

3.4.2 As a relevant aerodrome operator, the Cambridge City Airport must be consulted on any consenting application within the safeguarding area (13km). This process assists the aerodrome operator to take all reasonable steps to ensure that the aerodrome and its surrounding airspace are safe at all times for use by aircraft. The consultation process helps to identify any new potential flight hazards that need to be addressed.

3.4.3 One of the purposes of safeguarding of aerodromes in this way is to:

- "…ensure that their operation and development are not inhibited…by developments which have the potential to increase the number of birds or the bird hazard risk" [Circular 1/2003 Annex 2 para 3].

3.4.4 A primary purpose of the consultation process is to seek to identify proposed developments that may present a possible increase in birdstrike risk that will need to be addressed.

3.4.5 Annex 2 to Circular 1/2003 sets out specific advice on birdstrike hazard and identifies particular forms of development which are most important and where the primary aim is to guard against new or increased hazards.

3.4.6 Paragraph 9 from Annex 2 of the Circular 1/2003, which is relevant to the Proposed Development, advises that:

- "…A local planning authority will need to consider not only the individual potential bird attractant features of a proposed development but also whether the development, when combined with existing land features, will make the safeguarded area, or parts of it, more attractive to birds or create a hazard such as bird flight-lines across aircraft flightpaths"

3.5 Town and Country Planning Act (1990)

3.5.1 The establishment of a process for controlling developments is enacted in the UK within the Town and Country Planning Act (1990) (UK Government, 1990).

3.5.2 Direction is given within the Town and Country Planning Act (safeguarded aerodromes, technical sites and military explosives storage areas) Direction 2002. The text states the need "to guard against new or increased hazards caused by development".

3.5.3 The most important types of development in this respect are:

- facilities intended for the handling, compaction, treatment or disposal of household or commercial wastes, which attract a variety of species, including gulls, starlings and corvids;
- the creation or modification of areas of water such as natural or balancing ponds, wetlands, which could attract gulls and waterbirds;
- nature reserves and bird sanctuaries; and

- sewage disposal and treatment plant and outfalls, which can attract gulls and other species

3.5.4 The text continues: “Planting trees and bushes normally creates a bird hazard only when it takes place relatively near to an aerodrome, but a potential starling roost site further away from an aerodrome can create a hazard. Mineral extraction and quarrying can also create a bird hazard because, although these processes do not in themselves attract birds, the sites are commonly used for landfill or the creation of wetland.”

3.5.5 In addition, the Airport Operators Association (AOA) in association with the UK CAA has produced guidance that outlines the needs of the safeguarding process to protect flight safety. This guidance, “Safeguarding of Aerodromes Advice Note 3 Wildlife Hazards around Aerodromes” (AOA, 2016) presents a background for the understanding of hazards and risks faced by aerodromes from developments that attract wildlife and notes that: “The final decision on whether a site may or may not result in a hazard to flight safety will be dependent on location, proximity and relation to other existing wildlife sites and corridors”. This phrase summarises the principle that each site should be evaluated and assessed on its own merits.

4 Assessment Approach

4.1 Basis of assessment

4.1.1 The Proposed Development has been assessed in the context of the regulatory framework including Regulation (EU) 139/2014 (European Aviation Safety Agency 2018), and guidelines set out in the UK Government DfT / ODPM Circular 1/2003 (Department of Transport 2002) and CAP 772 Wildlife Hazard Management at Aerodromes, produced by the Civil Aviation Authority (2017).

4.2 Data collection

4.2.1 A birdstrike hazard risk assessment desk study was undertaken using the following sources:

- information specific to CCA recently obtained in relation to a housing development in the area, with identification of species of concern informed by standard methodology (ICAO, 2017) and Allan (2006) (contained in (Aviaire Ltd, 2021))

4.2.2 Sources of design and construction information available and used for the assessment include:

- Environmental Statement, Chapter 2 : Project Description (Application Document Reference 5.2.2)
- Works Plans (Application Document Reference 4.3)
- Drainage Strategy (Application Document Reference 5.4.20.12)
- Baseline habitat within the NVC Baseline Report (Application Document Reference 5.4.8.10)
- breeding bird survey data obtained during 2021 and 2022 in relation to the Environmental Impact Assessment of the Proposed Development (Application Document Reference 5.4.8.1)
- Ornithology Technical Appendix (Application Document Refence 5.4.8.4)

4.2.3 Breeding bird surveys targeting Schedule 1 species and most species of conservation concern were undertaken within and in proximity to the Proposed Development between March and August in 2021 and 2022. Although those species typically associated with risk of birdstrike (such as gulls, herons, pigeons, corvids and starlings) were not the focus of breeding bird surveys, field surveyors (at least one of whom lives locally and is therefore familiar with the area's bird assemblage year-round) who undertook the breeding bird surveys were consulted during the desk study for anecdotal information on the presence, numbers and distribution of such species.

4.2.4 In addition, information was taken from a recent 'Wildlife Hazard Management Plan' produced for CCA in relation to a new housing development in the area (Aviaire Ltd, 2021). Aviaire Ltd (2021) also utilized the methodology provided in Allan (2006) and for the identification of species of birdstrike risk.

4.3 Methods

Construction

4.3.1 The risks of birdstrike associated with the construction phase of the Proposed Development was assessed through review of the location, scale and duration of construction for major elements of the Proposed Development, and the associated enabling works and earthworks.

Operation

4.3.2 The elements of the Proposed Development as described in the ES Chapter 2 (App Doc Ref 5.2.2), Works Plans and the LERMP were examined to identify any features that could increase risk of birdstrike for CCA.

4.3.3 Permanent habitat changes (i.e., changes persisting through the operation of the Proposed Development) were reviewed in relation to the ecology of the hazardous species. This established whether the changes in habitats within a safeguarding zone, and at specific locations within a safeguarding zone, could result in changes in the numbers and distribution of hazardous species, or in the assemblage of these species that could cause the risk of birdstrike to increase or decrease as a result of the construction and operation of the Proposed Development.

4.3.4 There is no clear guidance on the maximum distance from an airport that planting of fruiting plants could have an impact on birdstrike. CAP680 (CAA, 2002) advises against planting within 2km, however CAP772 (CAA, 2008) is not specific and includes these species under general landscaping. The advice for landscaping projects is that they are unlikely to have an impact at >6.5km from an airfield. All proposed planting plans included in this Proposed Development within 6.5km were examined to identify species which could increase birdstrike risk.

4.3.5 As the hazard presented by the formation of a starling roost can be unacceptable at >6km from an airfield (CAP772 (CAA, 2008)); all areas of the scheme within the 13km safeguarding zone were examined for this risk.

5 Baseline

5.1 Cambridge Airport

5.1.1 The Proposed Development is located north-east of Cambridge and 2km to the east of the existing Cambridge WWTP in an area primarily comprised of arable land with small woodland belts and hedgerows.

5.1.2 CCA is obligated to object to any proposed developments, or to ensure robust mitigation measures are in place, in order to prevent heightened risk of birdstrike. This is in line with International Civil Aviation Organisation (ICAO) standards placed upon all UK airports. These standards are currently enacted in legislation via the UK Civil Aviation Authority (UK CAA) regulations and guidance material.

5.2 Existing off-airfield environment

Habitats

5.2.1 The Scheme Order Limits covers an area of approximately 213ha. The 2021-22 Breeding Bird Surveys were undertaken within a zone that extended 250m beyond the Scheme Order Limits.

5.2.2 The area is intersected by numerous hedgerows. There is a disused railway (Low Fen Drove Way Grasslands and Hedges County Wildlife Site (CWS)) along the south-east section of the Proposed Development. This CWS has mature tree and hedgerow species with associated bird species such as corvids and woodpigeons. Corvid and woodpigeon nests were noted across the area during Breeding Bird Surveys.

5.2.3 In addition, there are several sites designated for their ecological importance in this area of eastern Cambridgeshire, all of which may have the potential to contain aggregations of bird species of birdstrike risk. These include:

- Wilbraham Fen Site of Special Scientific Interest (SSSI) contains reedbeds (1.8km east of RWY 23);
- Stow-cum-Quy Fen SSSI contains areas of reedbed and open water (3.7km north-east of RWY 23);
- Wicken Fen Ramsar Site, Special Area of Conservation (SAC), SSSI and National Nature Reserve (NNR) contains areas of reedbed and open water (11.5km north-east of RWY 23); and
- Fulbourn Fen SSSI (4.4km south-east of RWY 23) contains tree cover that may be used by roosting corvids.

Waterbodies

5.2.4 The closest large waterbodies are mature gravel pits at Milton Country Park, located about 1.5km west of the Proposed Development and 3.1km north-west of RWY 23.

These waterbodies attract species such as wildfowl and gulls, particularly during winter.

5.2.5 The River Cam is approximately 900m east of the Proposed Development. The river typically contains mute swans, mallard, geese, grey heron and little egret.

5.2.6 Immediately to the south of the CCA's boundary are three large waterbodies adjacent Cherry Hinton Brook. These are considered likely to attract the same bird species as mentioned above.

Landfills

5.2.7 Waterbeach (Cottenham Long Drove) Landfill is a large active municipal waste site located approximately 9km from CCA and approximately 7.5km north of the Proposed Development. The site, operated by Amey, often has substantial aggregations of gulls and corvids. A large rookery is located to the immediate south-east of the site. The site is located to the north of Cambridge and is approximately 9km from CCA and approximately 7.5km north of the Proposed Development.

Avifauna activity

Bird surveys and desk study

5.2.8 There is no publicly available data that captures the number of confirmed birdstrikes on aircraft using Cambridge Airport that originate from birds within the Proposed Development.

5.2.9 Bird surveys completed for the Environmental Statement for the Proposed Development found that the avifauna of the rural areas was typical of lowland agricultural areas. These are reported in Ornithology Baseline Technical Report (App Doc Ref 5.4.8.4). Small groups of corvids and woodpigeons noted within the vicinity of the Proposed Development, with geese and gulls observed less frequently. It is noted that the primary targets for the baseline surveys were species of conservation concern, however the survey data demonstrate that the avifauna of the area is what would be expected. Soil stripping and planting activity are expected to lead to a temporary increase in the number of such species, as well as starlings, present in the area but this is expected to be for a temporary period only as work is undertaken.

5.2.10 Concentrations of species likely to pose a birdstrike risk are most likely to occur during autumn to early spring.

5.3 Species of birdstrike risk for CCA

5.3.1 The bird species most likely to present a birdstrike risk for CCA are provided in Table 5-1. Information in this table is derived from local knowledge of the area by locally-based professional ornithologist and Aviaire Ltd (Aviaire Ltd, 2021).

Table 5-1: Species of greatest birdstrike concern for Cambridge City Airport

Common Name	Priority months/periods	Likely presence within the Proposed Development
Carrion crow *Corvus corone*	All Year	Frequent
Rook *Corvus frugilegus*	All Year	Frequent
Starling *Sturnus vulgaris*	Winter	Frequent
Woodpigeon *Columba palumbus*	All Year	Frequent
Black-headed gull *Chroicocephalus ridibundus*	Autumn/Winter	Probable
Common gull *Larus canus*	Autumn/Winter	Probable
Lesser black-backed gull *Larus fuscus*	All Year	Probable
Feral pigeon *Columba livia*	All Year	Occasional
Jackdaw *Coloeus monedula*	Autumn/Winter	Occasional
Herring gull *Larus argentatus*	Autumn/Winter	Occasional
Common buzzard *Buteo*	All Year	Occasional
Magpie *Pica*	All Year	Occasional
Canada goose *Branta canadensis*	Jan - Mar	Remote
Cormorant *Phalacrocorax carbo*	All Year	Remote
Greylag goose *Anser anser*	Jan - Mar	Remote
Mallard *Anas platyrhnchos*	All Year	Remote

6 Risk Assessment and Management

6.1 Birdstrike risk features of the Proposed Development

6.1.1 This section describes those landscape features and activities associated with the construction and operation of the Proposed Development which may potentially enhance the risk of birdstrike for CCA.

During construction

6.1.2 The proposed construction phase works which may potentially increase birdstrike risk are described below:

- Topsoil strip creating areas of open soil that provide novel foraging habitat. Topsoil strip is required for construction works, including the proposed WWTP and associated access roads, the pipeline corridors associated with the Final Effluent and Storm Pipeline and the Waterbeach Pipeline (see Figure A.2, Appendix A for the location of proposed topsoil stripping). The Waste Water Transfer Tunnel and shafts are not likely to create conditions that would enhance birdstrike risk and are therefore not considered further.
- A temporary lagoon at the proposed WWTP required for wet commissioning works. The actual size will be determined by the depth of the lagoon, but the maximum size is anticipated to be 70m by 70m if square and assuming a depth of 1m; and
- Presence of waste containers in temporary compounds.

Topsoil strip

6.1.3 During construction (year 1 expected in 2025), up to 80ha of arable fields will be cleared of vegetation and topsoil for the construction of the proposed WWTP, the land required for the landscape masterplan, access routes and compounds just east of Horningsea Road (please refer to Figure A.2, Appendix A). This represents the largest single area of cleared vegetation and topsoil required for construction.

6.1.4 Cleared topsoil can attract gulls and corvids due to the availability of exposed invertebrates such as earthworms and beetle larvae.

6.1.5 There will be further topsoil stripping along a narrower corridor associated with the open trench sections of the Waterbeach Pipeline extending south from Waterbeach Water Recycling Centre (WRC), past the proposed WWTP location, underneath `the A14 and eventually turning westwards to enter the existing Cambridge WWTP (please refer to Figure A.2, Appendix A). The Agricultural Impact Assessment (Application Document Ref 5.4.6.2) calculated that approximately 60ha of agricultural land will be affected by the Waterbeach Pipeline works. This will be stripped in phases as the open trench works for the pipeline are carried out.

6.1.6 Generally, only a limited width of around 30m would be stripped back along the Waterbeach pipeline route. The length stripped at any one time will be determined

by the contractor on site. The limited width being stripped means that this is less likely to attract significant numbers of gulls and corvids to the working areas.

Food waste present on site during construction

6.1.7 There is potential for limited quantities food waste associated with construction staff bring food to site for consumption during the working day. This waste could provide an attractive food source for some birds if not managed. All construction works will be carried out under the requirements of the Code of Construction Practice Part A (Application Document Ref 5.4.2.1) which has a series of requirements on food waste management, including on how any food waste is managed on site. Therefore, this potential food source is not considered further.

Cranes and other tall structures providing temporary roosts

6.1.8 The only tall structures likely to be within the construction area of the proposed WWTP would be mobile tower cranes. All cranes, regardless of location, will be notified to the UK CAA or CCA. CCA (2019) by the Principal Contractor prior to erection if at any point during the planned lifting operations the highest point of the crane or load would exceed 10m above ground level or the surrounding structures or trees (if higher). A consultation with CCA may be required for cranes within 6km of the airport and a permit sought. These mobile cranes will be limited in number and are not considered to present a significant habitat to attract significant numbers of birds of concern.

6.1.9 Any other tall structures on site such as a concrete batching plant (if required) will also be notified to CAA and the operator of CCA, and any safety recommendations incorporated into the site set up.

6.1.10 If during construction it was found to be the case that some birds were roosting on the tower cranes or other tall structures, the Principal Contractor will be required to ensure that the birds are deterred from doing this.

6.1.11 Cranes and other temporary tall structures are not considered further in this assessment.

Open waterbodies

6.1.12 The only open waterbody required to be constructed as part of the Proposed Development is a temporary lagoon to hold water during wet commissioning and testing works at the proposed WWTP. It is anticipated this would be around 1m deep and about 70m x 70m (or of a dimension that provides a surface area of around 4,900m^2 and a depth of 1m). It would be required for a period of approximately 5.5 months (the time currently planned for wet commissioning of the proposed WWTP works).

During operation

Open water

6.1.13 There are few operational structures likely to attract birdstrike risk species to the proposed WWTP as all water/sludge tanks are likely to be sealed or too small to be of interest to birds.

6.1.14 There will be a requirement to store storm overflow water. This is designed to be for a volume of 23,000m^3 as per Environment Agency requirements. This will be held in five off-line storage tanks located within the proposed WWTP. These tanks will be open top tanks but the open tops will be relatively small in area (maximum surface area is proposed to be 3774m^2) and within concrete walls (please refer to Figure A.3, Appendix A). These are not likely to create habitat that would attract species of birdstrike concern.

Landscape planting

6.1.15 There will be a significant area of landscaping included in the Proposed Development (please refer to Figure A.4, Appendix A) which will include grass, tree and shrub planting. The landscaping planting has the potential to:

- Create dense vegetation (once mature) that may provide roosting opportunities for species of birdstrike concern;
- Once mature, this may provide an autumn and winter food supply in the form of berries
- Create standing water or watercourses that attract gulls and waterbirds; and
- Result in areas of short grass that provide feeding opportunities for a wide range of bird species with the potential to form flocks, such as starlings.

6.1.16 The landscaping proposals and the management of the landscaping are set out in the Landscape Ecological and Recreational Management Plan (LERMP) (Application document reference 5.4.8.14). The landscape planting will mature over 15 years or more and could create new habitat that might increase birdstrike risk.

6.1.17 The overall strategy for the landscape planting plan has been to provide new habitat for a range of species and to provide visual screening and landscape integration of the proposed WWTP. The proposed planting is not intended to create significant areas of dense scrub and woodland[1] that could provide large roosting areas for significant numbers of species of birdstrike risk.

6.1.18 To mitigate the visual effects of the plant infrastructure there will be a combination of new woodland blocks with hedgerow and tree planting on the earth bank which will surround the proposed WWTP.

[1] Dense vegetation, such as thorn thickets, game coverts and young un-thinned conifer screening belts, can provide nesting sites for woodpigeons, small passerines (perching birds) and corvids, as well as roosting sites for potentially large flocks of starlings CAP 772 - Wildlife hazard management at aerodromes (Civil Aviation Authority)

6.1.19 There will also be a mosaic of grassland planting, hedgerows, woodland blocks, seasonal ponds and individual trees that will be planted adjacent to the proposed WWTP. This planting will provide greater ecological connectivity to the wider area. The planting will be split into three phases to maximise the opportunity for hedgerows and woodland to become established as early as possible. The phases will be Phase 1 – planting prior to construction; Phase 2 - planting in areas once construction has finished and Phase 3 – planting once the proposed WWTP is fully operational.

6.1.20 Some of the plant species included within the indicative planting mixes are known to be attractive to birdstrike concern species. Table 6-1 below shows initial early-stage planting mixes for the proposed WWTP and the surrounding Horningsea Road/Low Fen Drove Way.

Table 6-1: Initial landscape planting around the proposed WWTP

Purpose	Type of plant	Species	Common Name	Percentage mix	Quantity
Screening edges – from the A14	Trees	*Acer campestre*	Field maple	30%	776
		Quercus robur	Pendunculate oak	15%	388
		Quercus petraea	Sessile oak	15%	388
		Ulmus glabra	Wych Elm	1%	26
		Betula pendula	Silver birch	5%	129
		Malus sylvestris	Crab apple	5%	129
		Betula pubescens	Downy birch	5%	129
		Ilex aquifolium	Holly	2%	52
		Carpinus betulus	Hornbeam	5%	129
		Salix cinerea	Grey sallow	5%	129
	Shrubs	*Corylus avellana*	Hazel	2%	52
		Crataegus monogyna	Hawthorn	2%	52
		Prunus spinosa	Blackthorn	1%	26
		Sambucus nigra	Elder	1%	26
		Viburnum opulus	Guelder rose	1%	26
		Salix caprea	Goat willow	1%	26

Purpose	Type of plant	Species	Common Name	Percentage mix	Quantity
		Viburnum lantana	Wayfaring tree	1%	26
		Cornus sanguinea	Dogwood	1%	26
		Euonymus europaeus	Spindle	1%	26
		Rhamnus cathartica	Purging buckthorn	1%	26
Screening from Horningsea Road and Low Fen Drove Way	Trees		Pendunculate oak	25%	12
		Tilia cordata	Small leaved lime	30%	14
			Field maple	35%	16
			Sessile oak	10%	5
Hedgerows	Shrubs		Hawthorn	55%	3245
			Blackthorn	7.5%	443
			Dog rose	7.5%	443
			Wayfaring tree	5%	295
			Dogwood	5%	295
		Ligustrum vulgare	Wild privet	5%	295
			Purging buckthorn	5%	295
			Spindle	5%	295
	Climbers	*Hendra helix*	Ivy	2%	118
		Tamus communis	Black bryony	3%	177

Source: LERMP (Application Document Ref 5.4.8.14)

6.1.21 The mix includes large percentages of hawthorn and other berry-producing species which may potentially attract bird species.

Solar panels

6.1.22 Solar/photovoltaic (PV) panels will be installed on selected building roofs and the inner sides of the earth bank covering an area of up to 7ha. Birdstrike concern species, typically pigeons, may nest behind these panels attracted by the warm and dry conditions. However, due to the limited installation of PV, it is not thought that this will attract significant numbers of nesting birds.

Green roofs

6.1.23 The Gateway building at the entrance to the proposed WWTP will have a flat blue/green roof with rows of photovoltaic (PV) panels. Any flat roofs may potentially be used by birdstrike concern species, such as gulls, for loafing and or breeding

purposes. Due to the limited amount of green and flat roofs to be installed (and the relatively small size of these structures), it is not thought that they would be used by substantial numbers of species of birdstrike concern.

Sustainable Drainage System

6.1.24 The Sustainable Drainage System (SuDS) system will comprise swales/lagoons within the proposed WWTP facility and once full, connections to the seasonal ponds and a drainage ditch around the base of the earth bank where surface water can be attenuated and allowed to infiltrate into the ground.

6.1.25 It is not thought that the SuDS will attract birdstrike concern species due to the disturbance caused by the operating of the proposed WWTP.

6.2 Risk Assessment

Construction phase assessment

6.2.1 An assessment of increased birdstrike risk attributable to the Proposed Development is provided in Table 6-2 below. This assumes no specific plans are implemented to reduce any increase in birdstrike risk other than already included in the Project Design and management plans mentioned previously.

Table 6-2: Risk assessment for construction of increasing birdstrike risk

Activity	Baseline bird presence	Potential to change bird presence during construction	Forecasted change	Risk
Topsoil strip	The existing arable farmland has associated woodpigeon, buzzard, gulls, corvid and starling populations. Large flocks may occur at certain times during the agricultural cycle such as tilling. Aggregations of geese species are known to occur in the area.	Topsoil strip will result in conditions attractive to species of birdstrike concern similar to existing seasonal tilling of arable land. At the proposed WWTP topsoil will be stripped and removed to be stored for landscaping use. The site will remain relatively active and greater human disturbance is anticipated compared to standard agricultural operations. On the Waterbeach pipeline topsoil strip will be limited to a narrow corridor and will be stripped in phases. Ongoing construction vehicle activity in the working area will create more disturbance than normal tilling by farmers.	Depending on the timing of the topsoil strip it is considered this is likely to create similar or lower birdstrike risk compared to standard agricultural operations. In the longer term the Proposed Development will lead to a reduction in annual tilling of arable fields on the WWTP site.	Predicted to be a **neutral** change in risk compared to activities that occur already in the area of the Proposed Development. There is potential for a minor long term reduction in birdstrike risk due to a reduction in the area of arable land.
Waste management	There are no food waste management activities in the immediate area of the Proposed Development that could attract species	Robust and controlled measures will be in place to ensure no food waste is permitted to accumulate on site that could increase birdstrike risk.	No change to current situation.	**Neutral**, no risk created during construction of the Proposed Development.

Activity	Baseline bird presence	Potential to change bird presence during construction	Forecasted change	Risk
	of birdstrike concern.			
Presence of tall structures creating roosting opportunities	No established roosts sites associated with tall structures are known to exist in the Proposed Development area at present.	Construction tower cranes will be used for some part of the works. These present a small opportunity for birds to roost of them.	Unlikely to generate large numbers of roosting birds. The Principal Contractor would implement standard measures to deter birds roosting on tower cranes.	**Neutral** as assumed standard practice to deter birds will avoid roosting birds during construction.
Creation of temporary open water features	There are no existing open water areas of substantial size in the Proposed Development Scheme Order Limits.	To carry out the wet commissioning of the works there will be a need to create a temporary storage lagoon for water used in testing. This is estimated to be no more than about 70m by 70m in size (and could be smaller). It would be in place for about 5.5 months. It is likely to have bare sides that would not be attractive as a nesting habitat. It could attract those species of birdstrike concern that typically roost on open water (e.g., gulls).	Given the relatively small size of the temporary pond it is considered unlikely to be attractive as a roost for substantial aggregations of gulls or other birdstrike risk species. Milton Country Park has larger permanent open water located approximately 1.2km west of the potential temporary storage lagoon. Whilst the temporary storage lagoon may attract some birds, it is not likely to lead to significant increase in birds roosting on open water.	A **minor temporary** increase in risk due to a potential increase in the attractiveness of the Proposed Development to roosting gulls.

Operational phase assessment

6.2.2 An assessment of the increase in risk attributable to the operation of the Proposed Development is provided in Table 6-3 below. This assumes no specific plans are implemented to reduce any increase in birdstrike risk other than already included in the Project Design and management plans mentioned previously.

Table 6-3: Risk assessment for operations increasing birdstrike risk

Activity	Baseline bird presence	Potential to change bird presence during construction activity	Forecasted change	Risk
Creation of open water suitable as a habitat for species of birdstrike concern within the proposed WWTP.	There is no existing open water within the Proposed Development footprint of significance.	The proposed WWTP will have six circular open water primary settlement tanks (PST) and eight circular open water final settlement tanks (FST) as part of its design (Figure A.3, Appendix A). In addition, there will be five storm water storage tanks to hold 23,000m^3 of storm overflow water. All these features will be open within the earth bank around the proposed WWTP. The tanks are concrete lined and narrow in extent and will therefore not attract birdstrike concern species.	Neutral. Although there will be some open tanks and settlement lagoons, these are within the operational site with moving equipment that will create disturbance. The scale of the open water will be limited and not likely to be attractive roosting species of birdstrike concern.	**Neutral** – no risk anticipated due to presence of open water on site.
Creation of open water outside the proposed WWTP	There are very limited areas of open water (a section of the River Cam and ditches) in the Proposed Development footprint at present. There is a complex of water filled gravel pits located within 5km to the south and north-west of the	The landscape plan includes for seasonal ponds located within woodland to attract a range of biodiversity, but these will be small and likely subject to seasonal drying. Unlikely to attract species of birdstrike concern.	Likely **negligible** as unlikely to attract significant numbers of waterbirds due to the small size. Potential to attract small numbers of wildfowl should any pond have permanent water.	**Neutral.** No increased risk of birdstrike.

Activity	Baseline bird presence	Potential to change bird presence during construction activity	Forecasted change	Risk
	airport. Wildfowl are present on the waterbodies and on the River Cam to the north-west.			
Landscape planting around the proposed WWTP.	Arable farmland with associated woodpigeon, buzzard, gulls, corvid and starling populations. Large flocks at certain times during the agricultural cycle such as tilling. Aggregations of geese are known to occur in the area.	Removal of arable habitats and hedges. Extensive landscape planting. New woodland blocks and grassland habitat to replace arable. Grassland will be managed but allowed to develop a taller sward of 150 – 200 mm, which should be effective at deterring use of the site by those grassland foraging species of birdstrike concern given elevated sward height. Grass planted around any area of either temporary or standing water should comprise the following native grass cultivars: 75% Granditte tall fescue, 20% Debussy tall fescue (both Festuca arundinacea) and 5% annual ryegrass (Lolium multiflorum).	**Reduction** in the number of species of birdstrike concern proportionate to the area of arable land utilised for the Proposed Development. **Reduction** in land area attractive to aggregations of geese. **Increase** in habitat suitable for roosting and breeding species such as corvids, woodpigeon and buzzard.	Predicted **reduction** in birdstrike risk due to reduced numbers of species of birdstrike concern. Predicted **minor increase in risk** due to enhanced roosting and breeding attractiveness from landscape planting.

6.3 Management and monitoring

Construction phase controls

Initial planting

6.3.1 The approved landscape masterplan as part of the LERMP will be implemented during construction and operation of the Proposed Development. This includes measures to ensure that the landscape planting is maintained to deliver the key objectives of mixed habitat creation and visual screening.

6.3.2 Due to the relatively short term duration of the construction works (up to 45 months) any initial planting will not develop sufficiently to attract any significant numbers of birdstrike risk species, so no specific management measures are proposed during construction.

Construction management plans

6.3.3 The CoCP Part A (Application Document Ref 5.4.2.1) sets out required management plans to ensure the environmental impacts of the construction works are controlled. This includes the standards and the measures that would reduce risks of attracting birdstrike concern species birds to the works (e.g. due to waste management practices).

6.3.4 Management activities during construction will be set out within the Construction Environmental Management Plan(s) (CEMP). These will be supported by a series of topic-based management plans including the implementation of a WHMP. This is to ensure key roles and responsibilities are outlined to achieve optimized management, a successful delivery and with an adaptive risk management approach to changing environmental and wildlife factors.

6.3.5 As part of the construction site induction process, site staff will be given specific toolbox talks relating to wildlife and habitats. The toolbox talks will include actions to be taken should potential birdstrike issues be encountered during construction. Such actions include immediately informing the CCA, the environmental manager, or the Ecological Clerk of Works (ECoW).

Operational phase controls

LERMP

6.3.6 The initial planting mixes for woodland screening and hedgerows contain fruit-bearing species which may, in time, be attractive for species of birdstrike concern such as large aggregations of thrushes. These species also forage for invertebrates on grass, including airfields, although an effective long grass policy as proposed in LERMP should reduce this to a minimum.

6.3.7 The Proposed Development is in an area dominated by agricultural land suitable for foraging for invertebrates and so it is considered unlikely that thrushes would seek to supplement berries from the Proposed Development landscape planting by commuting across urban areas (which they usually avoid) to the airfield when there

are suitable feeding conditions close by. It is not proposed to alter the planting mix at this time.

6.3.8 Starlings can roost in a wide range of habitats including natural woodland, plantations, single trees, reedbeds and under bridges. In view of the range of habitats used by this species, almost any area of planting has the potential to attract roosting starlings. It would be unreasonable to remove potential roosting habitat from developments in all but the immediate vicinity of an airport. No change is proposed to the proposed planting plan at this time.

6.3.9 The Applicant will be responsible for the long-term implementation of the management plan, including ensuring trees are managed to avoid becoming attractive to significant numbers of roosting or nesting birds that can present an increase in birdstrike risk for CCA. Regular inspections and arboricultural management practices will be implemented to ensure this requirement is delivered. This may include thinning out trees if woodland blocks become dense enough to attract substantial numbers of species of birdstrike concern.

Green roofs

6.3.10 All plans for structures and their effect on potential on bird movements will be made to identify potential problems. Where there is the potential for gulls to nest, all structures will be required to have access to allow nest removal. Where this is considered likely, an agreed programme of monitoring will be required.

Drainage including SuDS

6.3.11 The detailed drainage design including SuDs features will consider the potential for attracting birds. The design of the temporary attenuation area will include assessment of the frequency, duration and potential depth of flooding to assess the potential risk associated with avifauna.

Management activities

6.3.12 Further to the LERMP the Applicant will implement an Environmental Management System (EMS) that will set out the responsibilities of the site management to control risks arising from the proposed WWTP during operations.

6.3.13 The EMS will also include appropriate definitions of roles and responsibilities to ensure compliance with any conditions related to the requirement to manage birdstrike risk from the Proposed Development.

6.3.14 This will include appointing an Environmental Manager who will be responsible for managing environmental issues through operational monitoring, including ongoing and adaptive risk management, subject to regular review. The Environment Manager will be responsible for the preparation and implementation of the operation WHMP including appointing suitably qualified and experience staff or contractors to undertake operational monitoring of birdstrike risk.

6.4 Further engagement with CCA

6.4.1 Detailed bird hazard management plans for construction and operation will be developed in consultation with the operators of CCA.

6.4.2 The detailed design for some elements of the Proposed Development provides opportunity for refining the design including of landscape enhancement and mitigation areas.

6.4.3 The Applicant will consult with the airport operators in relation to the need for:

- the management of temporary features in construction (for example temporary ponds, areas of stripped soil, structures that may serve as roosts)
- monitoring approaches and reporting frequency in construction once detailed construction methods and programme are established
- refinements to the design of buildings and treatment infrastructure to reduce risk of attracting undesirable bird assemblages
- the ongoing management of habitats during operation that may be required to reduce risk of birdstrike occurring

6.5 Detailed plan preparation

6.5.1 Construction and operation stage WHMP will set out the measures to reduce the risks to acceptable levels.

6.5.2 The construction stage plans will cover the following:

- establishing habitat and site management procedures to minimise birdstrike risk;
- informing CCA if any changes in the nature of the site are likely to enhance the risk of birdstrike;
- clear lines of communication with CCA (including contact details of accountable persons at CCA/the Proposed Development site) as well as providing any information required by CCA at intervals agreed with CCA;
- training of staff responsible for ecological monitoring and any control measures required (including recording control activities); and
- logging species, observations and subsequent data analysis.

6.5.3 The operational stage plans will cover the following:

- habitat and site management of the landscape masterplan area and proposed WWTP to minimise the attraction for birds;
- monitoring approaches for the detection of hazardous concentrations of birds within proposed WWTP and landscape masterplan extent;

- measures to discourage hazardous species should monitoring indicate the need;
- communication methods with CAA and any information required by CAA at intervals agreed with CAA;
- training of staff responsible for ongoing ecological monitoring and any controls measures required;
- monitoring and reporting methods and frequencies; and
- details of any required ongoing safeguarding consultation with CAA.

6.6 Post application

6.6.1 The detailed WHMP for construction will be prepared to the satisfaction of CCA and in place prior to the commencement of works. The WHMP will include practical measures such as removal of topsoil on a phased basis and the maintenance of a sloping profile to significantly reduce birdstrike risk.

6.6.2 The construction phase plan will take account of:

- the final landscape planting schemes as part of the detailed design process for feeding opportunities (within 2km of the airport) or nesting/roosting habitat for rooks and starlings (within 4 km of the airport). The final planting mixes should be circulated to the airport operators for agreement prior to implementation of the LERMP;
- the detailed design of buildings in particular green roofs, and the extent and location of solar panels; and
- the detailed drainage design including SuDs features. The forecast hydrology of the temporary attenuation area, including a review of the expected frequency, duration and depth of flooding to assess the potential risk associated with waterfowl and gulls.

6.6.3 There should be continued engagement with CCA and the production of a detailed WHMP for the operation and maintenance of the Proposed Development. The operational WHMP will align with changing landscape management activities and take account of the results of ecological monitoring of bird populations in the areas of land required for the landscape masterplan.

7 Conclusions

7.1 During construction

7.1.1 A limited number of construction activities may potentially lead to an increase in birdstrike risk for Cambridge City Airport. The main activity is the topsoil strip required for the works. However, the area of the Proposed Development is already subject to regular agricultural operations which attracts birds to the area.

7.1.2 The topsoil strip will be in those areas subject to ongoing construction activity resulting in more human disturbance during the topsoil strip compared to agricultural operations. Some of the topsoil strip will be in smaller constrained areas within the pipeline corridors, and on the proposed WWTP. Unlike agricultural operations, the topsoil strip will be a one-off event, as opposed to a regular annual event, over a number of field parcels that will replicate the current birdstrike risk resulting from agricultural operations. In the case of the Waterbeach Pipeline, the land stripped or topsoil will be returned to agricultural use.

7.1.3 The creation of a temporary open lagoon for storing water for wet commissioning is considered to present a neutral risk of increased birdstrike as the size of the lagoon is unlikely to large enough to be of sufficient size for substantial bird aggregations.

7.1.4 There are no other risks associated with construction.

7.2 During operation

7.2.1 Any open water present in the proposed WWTP is considered unlikely to generate risk of birdstrike. The risk is considered neutral compared to baseline conditions.

7.2.2 The proposed landscape planting has the potential to attract birdstrike concern species to the area due to the increase in potential roosting habitat (starlings, corvids).

7.2.3 The grassland areas will be cut bi-annually thereby allowing a taller sward than regular mowing and so reducing its attractiveness to starlings and other flocking species.

7.2.4 The long-term management regime for the landscape planting will ensure that if woodland blocks become dense enough to increase birdstrike risk from roosting or nesting birds, the blocks would be thinned out.

7.2.5 The overall risk from the operation of the site is considered to be neutral as a result.

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9 Appendix A

A.1 Map showing the 13km Airfield Safeguarding Area for Cambridge City Airport and the Scheme Order Limits for the Proposed Development

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Client

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Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	03/11/22	KL	First Draft	AW	CS

Title

Cambridge Waste Water Treatment Plant
Relocation Project
Wildlife hazard
Aviation safeguarding zone

Drawn	KL
Checked	AW
Approved	CS
Scale at A3	1:110,000

Drawing Number

Figure A.1

Security	Status	Rev
STD	PRE	P1

A.2 Approximate location of topsoil strips associated with the construction of the new waste water treatment plant and the effluent transfer pipeline

Scheme Order Limits
Compound
Main landscaping area
Proposed transfer tunnel
Waterbeach pipeline

Waterbeach pipeline

Proposed outfall

Existing Cambridge WWTP

Route of transfer tunnel

Proposed WWTP

Data Sources
Scheme Order Limits, scheme elements: Anglian Water Services @One, 2022,
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0 500 1,000 1,500 Metres

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P1	17/11/22	KL	First Draft	AW	CS

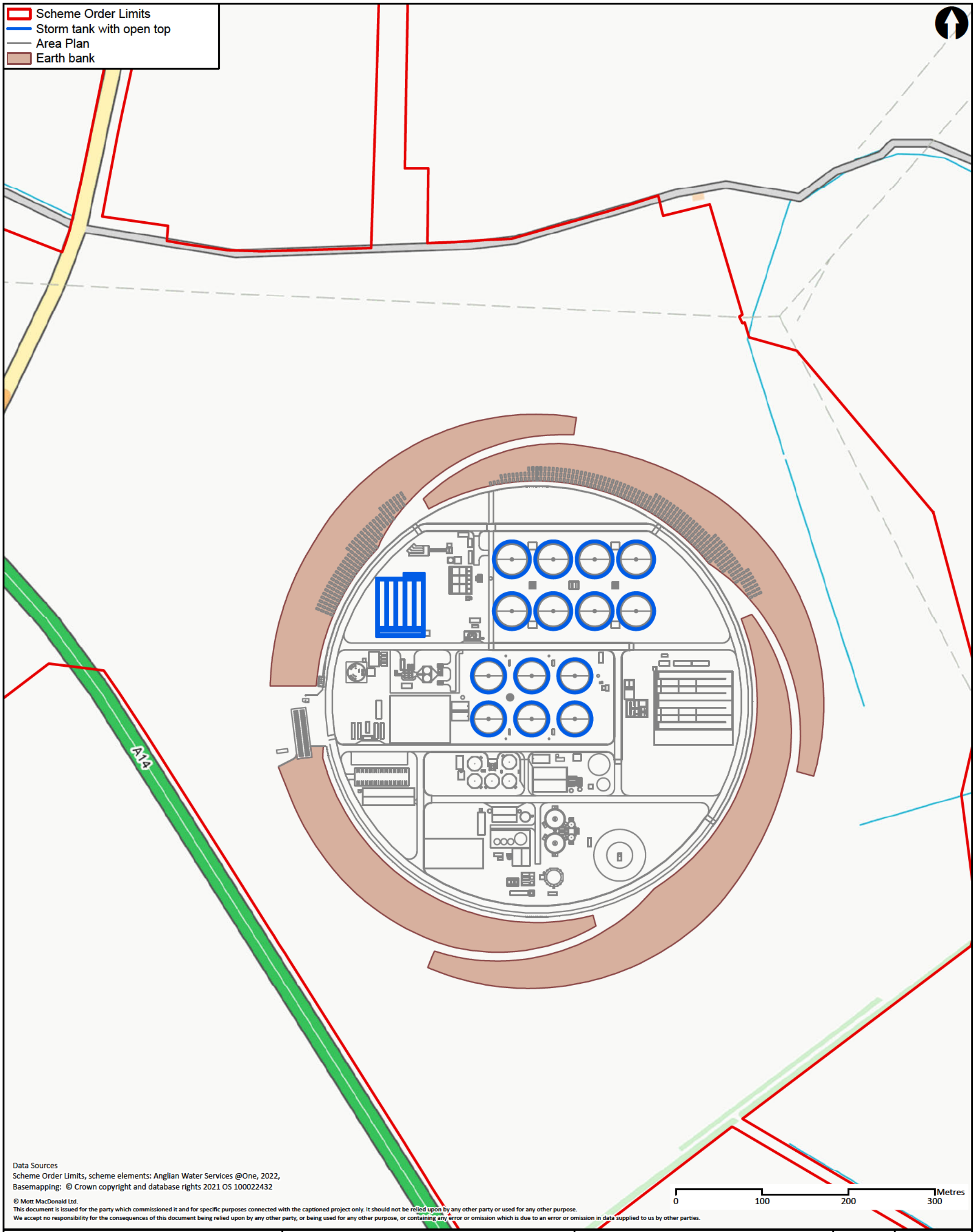
Title
Cambridge Waste Water Treatment Plant Relocation Project
Wildife hazard
Approximate location of topsoil strips associated with the construction of the new waste water treatment plant

Drawing Number
Figure A.2

Drawn	KL
Checked	AW
Approved	CS
Scale at A3	1:20,000

Security	Status	Rev
STD	PRE	P1

A.3 The location of open tanks within the proposed waste water treatment plant



Data Sources
Scheme Order Limits, scheme elements: Anglian Water Services @One, 2022,
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Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	09/11/22	KL	First Draft	AW	CS

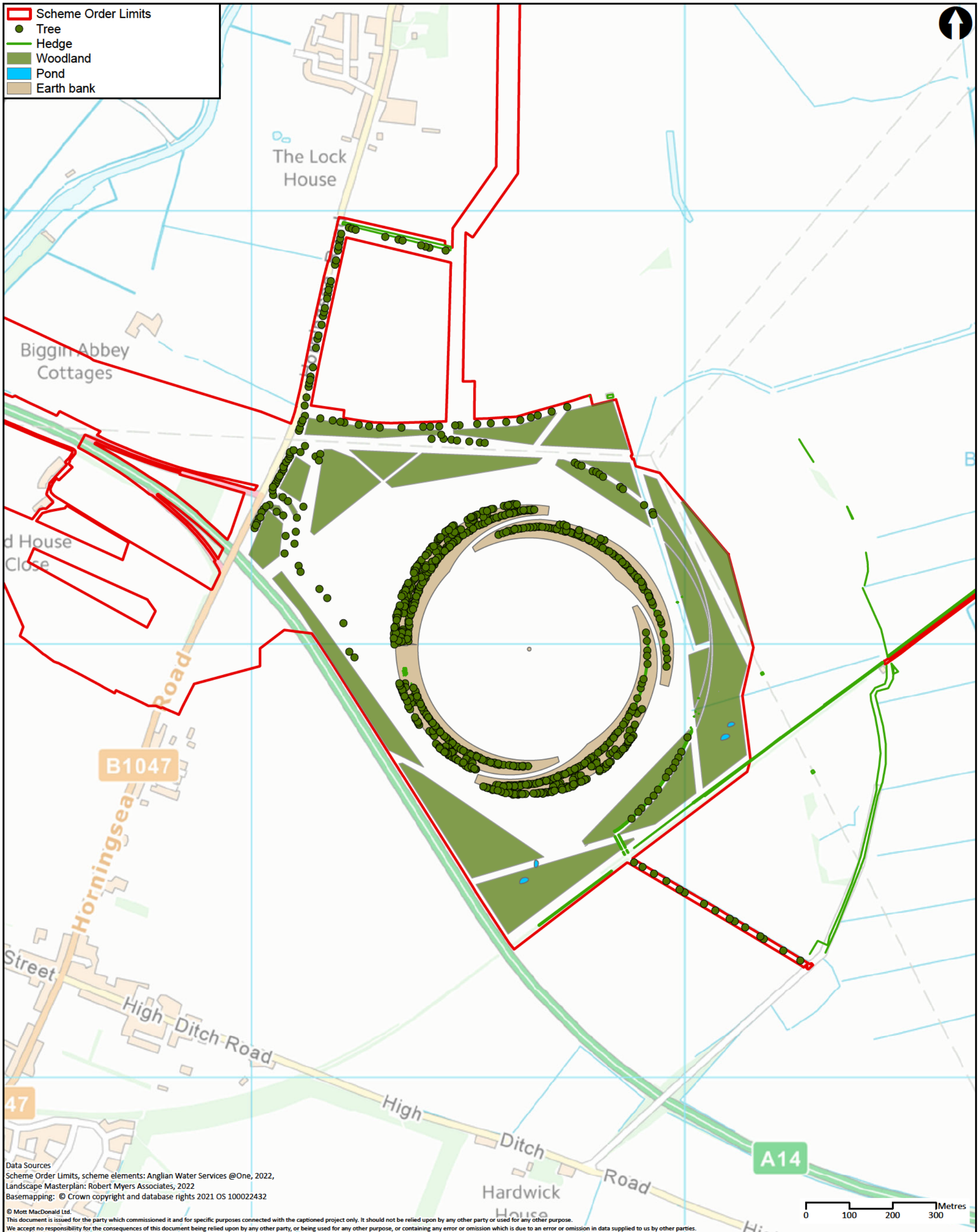
Title
Cambridge Waste Water Treatment Plant Relocation Project
Wildlife hazard
Location of open tanks within the new waste water treatment plant

Drawn	KL
Checked	AW
Approved	CS
Scale at A3	1:4,000

Drawing Number: Figure A.3

Security	Status	Rev
STD	PRE	P1

A.4 The landscape plan showing proposed habitats and planting scheme for the operational phase



Data Sources
Scheme Order Limits, scheme elements: Anglian Water Services @One, 2022,
Landscape Masterplan: Robert Myers Associates, 2022
Basemapping: © Crown copyright and database rights 2021 OS 100022432

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Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	18/11/22	KL	First Draft	AW	CS

Title
Cambridge Waste Water Treatment Plant Relocation Project
Wildife hazard
Landscape Masterplan

Drawing Number
Figure A.4

Drawn	KL
Checked	AW
Approved	CS
Scale at A3	1:8,000

Security	Status	Rev
STD	PRE	P1

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Visiting our website at [redacted]

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/