

Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Environmental Statement

Appendix 2.1: Code of Construction Practice

Part A

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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 Relocation Project (CWWTPRP) 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 (App Doc Ref 5.2.2).

1.3.3 The purpose of the proposed Cambridge 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 Proposed Development of Waterbeach New Town lies to the north of Cambridge. The Waterbeach new town development when built out 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 Cambridge WWTP becoming operational. In that case, either a later connection would be made to the proposed Cambridge 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 Code of Construction Practice

- 2.1.1 This Code of Construction Practice (CoCP) describes the standards and measures, based upon current legislation and best practice, which will be adopted by the Applicant and its Principal Contractors to manage, mitigate and monitor potential impacts during the construction phase of the Proposed Development. Compliance with the CoCP will be secured through a requirement of the DCO.
- 2.1.2 The purpose of the CoCP is essentially twofold:
- to provide effective planning, management and controls during the construction period with the aim of controlling potential impacts on the local community, natural and historic environments; and
 - to set out a framework for engagement with the local community, their representatives and other stakeholders throughout the construction period.
- 2.1.3 For the purpose of the CoCP, the term 'construction' includes all site preparation works, engineering and construction activities associated with the construction of the scheme including deliveries and waste removal. Commissioning of the new infrastructure also falls within the remit of this document. The only decommissioning activities within the DCO application relate to the activities required to take the existing Cambridge WWTP out of service and to rescind the associated Environment Agency Permits. No demolition work is included. The CoCP has been split into two parts: Part A 'General Requirements' and Part B 'Site Specific Measures'.
- 2.1.4 Part A of the CoCP, which is this document, sets out overarching and general principles including the following:
- legislative requirements, guidelines and Best Practice Measures (BPM) to be implemented and followed during construction;
 - where relevant obligations which will be imposed upon the Applicant and its contractors; and
 - plans, control measures and monitoring procedures for managing and mitigating potential environmental impacts relating to the construction period.
- 2.1.5 Part B of the CoCP sets out site specific measures which supplement and refine the general requirements in Part A. The need for site specific measures for certain locations is due to the varying factors including but not limited to, the presence of sensitive receptors which require specific mitigations measures and the need for specific construction activities or construction methodologies not widely used across the rest of the Proposed Development.
- 2.1.6 The CoCP is submitted for approval by the Secretary of State as part of the DCO application. Compliance with the measures set out within the CoCP will be secured by the requirements contained in the DCO (App Doc Ref 2.1). This will include a requirement for the preparation and approval of a Construction Environmental

Management Plan(s) (CEMP) which will be supported by a series of topic-based management plans.

- 2.1.7 The final CEMP(s) will be prepared by the Principal Contractor(s) appointed by the Applicant to carry out the construction works. This commitment is detailed further in Section 4.4 below.
- 2.1.8 To ensure compliance and to secure the requirements set out in the CoCP, the Applicant will ensure that the commitments set out herein are incorporated into contracts of delivery contractors and their agents. The delivery contractors and their agents may exceed these standards voluntarily within their own CEMP(s).
- 2.1.9 Adherence to the CoCP will not however, absolve the Applicant or its contractors from compliance with other legislation or permitting requirements relating to construction activities.

3 Community & Stakeholder Engagement

- 3.1.1 The Applicant will adopt a proactive approach to communication with the local community and stakeholders in order to keep landowners, occupiers of nearby properties, Parish Councils and the local authorities informed of the works taking place, including durations, particularly where these will involve works outside of the core working hours or impact community facilities and business and local infrastructure such as Public Rights of Way (PRoW)/cycleways. The Applicant will require the same proactive approach from its Principal Contractor(s) as part of their communications strategy.
- 3.1.2 An Outline Community Liaison Plan has been prepared by the Applicant and is submitted as part of the DCO application (App Doc Ref 7.8).
- 3.1.3 The plan will be developed into a final Community Liaison Plan during the DCO examination through consultation with the local community and approved by the relevant local authorities. It will be secured through a requirement of the DCO (App Doc Ref 2.1). The plan will be put in place prior to the commencement of construction activities and will thereafter be implemented during the construction phase by the Applicant and its contractor(s).
- 3.1.4 The aims and objectives of the Community Liaison Plan are as follows:
- to create a simple process through which local people can contact the project team with questions or concerns;
 - to respond to questions and concerns clearly and promptly;
 - to update the local community of key project activities and development;
 - ensure two way communication channels to ensure that feedback is received back into the project community; and
 - to be socially responsible, building relations with the local community and being a good neighbour.
- 3.1.5 The outline Community Liaison Plan sets out the overarching approach to community engagement including the structure of that engagement, proposed engagement channels, frequency of communications, procedures for dealing with enquires and complaints, monitoring and elevation of the plan.
- 3.1.6 The outline Community Liaison Plan also includes a commitment to the appointment of a Community Liaison Officer. The roles and responsibilities of the Community Liaison Officer are set out in full in the Outline Community Liaison Plan but include the following:
- finalising and obtaining sign off (internally and with relevant authorities) of the Community Liaison Plan;

- maintaining and updating the Community Liaison Plan and stakeholder database;
 - promotion and development of positive relationships with local communities;
 - being the main point of contact for stakeholders, providing briefings on construction activities, promoting the project and resolving issues of concern;
 - being the main point of contact for landowners, making them aware of what activities will occur on or adjacent to their land and how any potential risks will be managed (e.g risk of contamination to private wells);
 - maintaining an enquiries and complaints log and disseminate identified comments for response and implementation of action. Ensuring that matters raised are fed back to the Principal Contractor(s) in a timely manner, for incorporation into the onsite communications;
 - working with and providing updates on community engagement to relevant internal teams including the CWWTPRP Board and the Anglian Water Services Limited Communications Team;
 - working collaboratively with the Principal Contractor (s) to ensure that the various elements of the stakeholder liaison and associated consents and commitments are coordinated and monitored to comply with all statutory and contractual obligations;
 - organising and attending meetings and forums with community stakeholders; and
 - working with the Anglian Water Services Limited Education Programme Team to promote educational opportunities within the local communities including to local schools and colleagues.
- 3.1.7 The Community Liaison Officer will deal with initial queries from landowners and will pass these onto specialist colleagues to respond to as required.
- 3.1.8 The Outline Community Liaison Plan includes a commitment to the provision of a 24-hour help line service to deal with complaints and Frequently Asked Questions (FAQs). A minicom text facility will be made available for people with speech or hearing difficulties as will a free telephone translation service for people whose first language is not English. Details of the help line will be promoted by various means including press releases and on the Applicant's website.
- 3.1.9 An enquiries and complaints procedure will also be developed and implemented during the construction process. All enquiries and complaints will be logged, investigated and the response recorded. The outcome will be reported to the complainant by the Applicant within 10 working days.
- 3.1.10 The Applicant will also explore the feasibility of setting up a Construction Forum with other nearby developers such as the Marshall's Group, to help co-ordinate communication regarding developments in the local area. Representatives from the local authorities (notably Environmental Health) would be invited to participate in

any such group. Engagement with technical stakeholders such as Natural England has been carried out through a number of Technical Working Groups. Continued engagement with technical stakeholders and 1 to 1 meetings will be arranged by the Applicant and/or the Principal Contractor(s) as required as part of the engagement on the CWWTPRP.

4 General Requirements

4.1 Health and Safety

- 4.1.1 The Applicant takes the health, safety and wellbeing of everyone who both works for or anyone affected by its activities extremely seriously. Health, Safety and Wellbeing is one of its core values. The Applicant's business plans include health and safety objectives and measurable targets which it is committed to meeting and exceeding through continuous improvement, not only to meet legal obligations but to achieve best practice.
- 4.1.2 This commitment is outlined in the Applicant's Health, Safety and Wellbeing Charter and Policy, see Figure 4.1 below.

Our Health, Safety and wellbeing Charter and Policy

Happier, Healthier and Safer employees for LIFE

Good health and safety performance, and the health, safety and wellbeing of everyone who works for us or is affected by our activities, is critical to the on-going success of our business. Our business plans include health and safety objectives and measurable targets which we are committed to meeting and exceeding through continuous improvement.

We are committed to a goal of no accidents and no harm to people

Slow down
Nothing is so important that we cannot **take the time to do it safely.**

Be aware
We will **never knowingly walk past** an unsafe or unhealthy act or condition

Think
We believe that work should have a positive affect on physical and mental health and wellbeing, and that **all accidents or harm are preventable.**

Health and safety is a business priority and a key measure of leadership. Our Directors, Senior Leaders and Managers will lead by promoting best practice and by providing the equipment, facilities, documents and support needed as well as ensuring adequate investment in people through training. Health, safety and wellbeing will be the first item at any meeting. Directors and all levels of management will carry out front line visits and stay in touch with day to day operations.

We are committed to the reduction of occupational health and safety risks. We will carry out health and safety risk assessments that will be regularly reviewed. Managers will ensure that significant hazards that cannot be eliminated are adequately controlled to reduce the risk of harm and ill health to our employees and others.

By engaging and collaborating with our partners, contractors and suppliers everyone will carry out their activities in line with this policy and will actively contribute to improving health, safety and wellbeing standards. We set clear expectations in our procurement policies and regular reviews.

We consult, listen and respond openly to our employees, partners, contractors, suppliers, customers and legitimate public interest groups. We are committed to the active participation of our employees, their representatives and other relevant stakeholders in matters regarding health, safety and wellbeing.

We will obey the law and follow best practice. We are committed to the continual improvement of the: Occupational Health and Safety Management System; the physical and mental wellbeing of our employees; and the health and safety on our sites.

We have a culture where unsafe behaviour is challenged and people are supported in doing so.

We openly report on our health and safety performance.

We encourage, recognise and celebrate those who demonstrate positive health, safety and wellbeing behaviour.

We aim to create a leading culture of care and concern where we build strong relationships, have good conversations including mental wellbeing and look out for one another.

Peter Surry

10 June 2020

Make it **safe.**
Make it **home.**

Figure 4.1: Extract from Anglian Water Service’s Health, Safety and Wellbeing Charter

- 4.1.3 These commitments are delivered through a Health and Safety Strategy with five clear goals. Health and safety is improved through continued worker engagement; risk management controls; ensuring hazardous processes are understood and controlled and ensuring that health and safety requirements are understood and followed.
- 4.1.4 The Applicant also requires that its partners, contractors and suppliers carrying out activities on its behalf achieve the same high level of health and safety standards.
- 4.1.5 The Applicant will ensure that arrangements are in place for the discharge of its duties under the Construction (Design and Management) Regulations (CDM Regulations).
- 4.1.6 As required under the CDM Regulations information about or affecting the site collected prior to the commencement of construction. This will involve approaching the relevant authorities and stakeholders. The Principal Contractor(s) will be responsible for the production and implementation of the Project Health and Safety Plan in accordance with CDM Regulations. This will set out how health and safety matters on the site are to be managed and how risks are to be identified and managed in accordance with current best practice and legal requirements. The Health and Safety Plan will focus on the health and safety of construction workers; however, the Principal Contractor(s) will also be responsible for ensuring the health and safety of any visitors to the site and of the general public in the vicinity of construction activities.

4.2 Environmental and Health & Safety Management Systems

- 4.2.1 The Principal Contractor(s) appointed by the Applicant will be required to be accredited to British Standard (BS) EN ISO 14001: Environmental Management and ISO 45001: Health and Safety Management Standards.
- 4.2.2 This will align with the Applicant's environmental and health & safety management systems and will set out:
- the contractor's environmental and health and safety policy;
 - the procedures to be implemented to deliver and monitor compliance with environmental and health & safety legislation;
 - staff competence and awareness requirements and how these are achieved and maintained; and
 - the procedures to be implemented to deliver and monitor compliance with the environmental provisions in this CoCP, and the construction management plans, including CEMP(s).
- 4.2.3 The Applicant will require the Principal Contractor(s) to have a robust audit and review process to ensure and demonstrate that all the environmental controls of the

contract and all relevant legislation, standards, regulations and consents are being meet/complied with.

4.2.4 The Principal Contractor(s) will be required to have mechanisms in place for incident, near miss and dangerous occurrence reporting. This will include review processes to ensure corrective actions, lessons learnt and continuous improvement.

4.2.5 As part of its Environmental Management System, the Applicant will require its Principal Contractor(s) to comply with the Construction Logistics and Community Safety (CLOCS) Standard. CLOCS is a national industry standard which requires stakeholders to take responsibility for health and safety 'beyond the hoardings' to ensure the safest construction. Its mission and primary goals are as follows:

- zero collisions between construction vehicles and the community;
- improved air quality and reduced emissions;
- fewer vehicle journeys; and
- reduced reputational risk.

4.3 Considerate Constructors Scheme

4.3.1 In addition to meeting the commitments in the CoCP, the Applicant will sign up to the Considerate Constructors Scheme (CCS).

4.3.2 Companies and suppliers registering with the CCS agree to abide by the Code of Considerate Practice which is designed to encourage best practice beyond statutory requirements with aim of raising standards through the industry.

4.3.3 Contractors signing up to the CCS are required to ensure that their sites appear professional and are well managed, to respect the community within which they are working, to protect the environment, to care about health and safety and to value their workforce. Respect for the community includes informing, respecting and showing courtesy to those affected by the work, minimising the impact of deliveries, parking and work on the public highway, contributing to and supporting the local economy and working to create a positive and ensuring impression and promoting the CCS.

4.3.4 Delivery contractors appointed by the Applicant will be expected to abide by CCS principles.

4.4 Construction Environmental Management Plan (CEMP)

4.4.1 As set out under section 2, the Principal Contractor(s) appointed by the Applicant will be required to produce a Construction Environmental Management Plan (CEMP) before works associated with each part of the Proposed Development commence. This will contain the detailed commitments derived from the measures set out in this CoCP and approved as part of the requirements of the DCO. It is intended that

different CEMPs are produced for separate parts of the Proposed Development to assist with construction phasing.

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

4.4.3 The principles which will be covered by the other management plans are outlined in the relevant parts of section 7.

4.4.4 The management plans which will be prepared are as listed below. Outline plans of those highlighted in **bold** are submitted as part of the DCO application and will be secured through the requirements (App Doc Ref 2.1):

- **Community Liaison Plan (See section 2)*;**
- Emergency Preparedness Plan (See section 4.6)*;
- Pollution Incident Control Plan (See section 4.6)*;
- Outfall Management and Monitoring Plan (See Section 5.13);
- **Wildlife Hazard Management Plan (see section 5.15)*;**
- **Soils Management Plan (See section 7.5)*;**
- **Decommissioning Plan (See section 7.4);**
- **Commissioning Plan (See Section 7.5)**
- Construction Water Quality Management Plan (see section 7.5)*;
- **Construction Traffic Management Plan (See section 7.6)*;**
- **Construction Workers Travel Plan (see section 7.6)*;**
- Noise and Vibration Management Plan (See section 7.7)*;
- Air Quality Management Plan Plan (see section 7.8)*;
- Site Waste Management Plan (See section 7.9)*; and
- Materials management Plan (See section 7.9)**

** The above documents with asterisks are documents that will either be produced or updated prior to the commencement of the enabling phase.*

*** Only to be produced where deemed necessary.*

5 Site Set Up and General Arrangements

5.1.1 The Works Plans (App Doc Ref 4.3) submitted as part of the DCO application show the proposed working areas for the different parts of the Proposed Development and detail where various construction activities will take place. Construction compounds will be located within these working areas.

5.2 Training and site induction

5.2.1 All construction staff will receive appropriate training on their responsibilities for minimising the risk to the environment and implementing the measures set out in CoCP/CEMP(s) and the associated management plans. The Applicant will require that the Principal Contractor(s) and their contractors/subcontractors employ an appropriately competent workforce with the appropriate recognised qualifications and experience. All contractors working on behalf of the Applicant will be expected to complete Construction Skills Certificate Scheme (CSCS) training and to carry CSCS cards or approved equivalents. Electrical operatives will be required to comply with the Electro technical Certification Scheme (ECS), Site Managers with the Site Management Safety Training Scheme (SMSTS) and supervisors with the Site Supervision Safety Training Scheme (SSSTS).

5.2.2 The Principal Contractor(s) will also be responsible for identifying the training needs of their personnel to enable appropriate training to be provided.

5.2.3 The Applicant will require training to include safety induction, site briefings and toolbox talks to equip the workforce with the necessary knowledge on health, safety, environmental matters and the relevant environmental control measures pertinent to the task being undertaken. Regular monitoring will be carried out by the Applicant and the Principal Contractor(s) Health and Safety advisors.

5.2.4 A site induction will be provided for all personnel before they are allowed to work on or visit the site. The Principal Contractor(s) will determine how often refresher site inductions should be conducted. The form of the site induction will be agreed with the Project Director and may include a training video with input from relevant specialists such as the Environmental Manager and the Ecological Clerk of Works (ECoW, see Section 6.3 below). The site induction will as a minimum cover the following key aspects:

- project overview and roles and responsibilities;
- site safety including site specific hazards;
- regulations governing storage, handling, treatment and disposal procedures for all wastes;
- the DCO Scheme Order Limits;
- environmental constraints onsite;
- traffic management measures including routes to access the working areas;
- environmental protection measures;
- expectations regarding behaviour and conduct whilst on site including respecting and showing courtesy to and supporting the local community;
- pollution prevention;
- incident and Near Miss Reporting;
- fire and Emergency procedures;
- first Aid provision;
- housekeeping;
- welfare Facilities; and
- a test on completion of the induction.

5.2.5 The induction will reflect approved mitigation measures where relevant.

5.2.6 The Principal Contractor(s) will be responsible for ensuring all personnel working onsite including other contractors and sub-contractors have been properly inducted and have the required Personal Protective Equipment (PPE). Any person including visitors who do not have this will not be permitted to enter the working areas.

5.3 Site compound set ups, security and fencing

General

5.3.1 As referenced above, site compounds will be located within the working areas.

5.3.2 Good housekeeping practices will be applied at all times in accordance with the following principles.

5.3.3 The Principal Contractor(s) appointed by the Applicant will be responsible for setting up construction compounds and maintaining these in a safe, clean and tidy condition. Welfare facilities including toilets, kitchen and dining facilities and drying rooms will be provided within the main construction compounds as required by the CDM Regulations. The facilities will be connected to mains services and drainage where reasonably practicable. Alternative arrangements in line with Health and

Safety Executive (HSE) standards, will be made if connection to the mains is not possible.

- 5.3.4 Mobile welfare facilities in the form of eco-units or similar will be provided as required within the working areas during construction.
- 5.3.5 The Principal Contractor(s) will always be expected to maintain the site in a clean and tidy condition. Measures will be implemented to provide effective preventative pest and vermin control and prompt treatment of any pest and vermin infestation. These will include the following:
- all sites and work areas will have closed skips and bins for waste management;
 - cleaners will be present at the main site compounds;
 - all areas around the bottom of offices, welfare and storage containers will be netted to avoid nesting. Netting (or other suitable materials) will also be used along the bottom of site hoardings;
 - vermin management and control will be identified and covered in the site induction and toolbox talks;
 - all construction work areas will be regularly checked by designated staff for signs of vermin or pests;
 - regular inspections will be carried out by the Environmental Manager or his delegated support staff; and
 - if vermin are found to be present in an area, that area will be segregated and specialist contractors brought in as quickly as possible to remove it.
- 5.3.6 Smoking will only be permitted in designated areas located within the construction compounds. These areas will be equipped with containers for smoking wastes.
- 5.3.7 Open fires will be prohibited at all times and all necessary measures will be taken to minimise the risk of fire. Contractors will be expected to comply with the requirements of the Regulatory Reform (Fire Safety) Order 2005 and the Health and Safety executive (HSE) Health and Safety Guidance (HSG) 168 Fire safety in construction (HSE, 2010) guidance.
- 5.3.8 Waste from the construction areas will be stored securely to prevent wind blow and segregated to facilitate recycling.
- 5.3.9 No living accommodation will be provided within any construction working area.
- 5.3.10 All working areas will be regularly inspected in line with the CDM Regulations.
- 5.3.11 On completion of the construction works plant, temporary cabins, fencing and vehicles no longer required will be removed. All land temporarily occupied will be made good in accordance with requirements agreed with the landowners, relevant highway authority and/or any specific Requirements of the DCO.

Site security and access

- 5.3.12 Site security is an important issue for the Applicant. The Principal Contractor(s) will be required to ensure that the main construction compounds are suitably signed and secured to protect against unauthorised entry in accordance with HSE standards.
- 5.3.13 Additional security measures such as the use of CCTV and on-site security personnel will be used as appropriate. These measures are set out in more detail in Part B of the CoCP. The Principal Contractor(s) will be required by the Applicant to review these with the Police Service before works start on site and to make any additional provisions or amendments.
- 5.3.14 Working areas will be demarcated/fenced in a suitable way for the activity being undertaken.
- 5.3.15 All temporary fencing or other demarcation fencing will be maintained in a tidy condition and will be fit for purpose for the duration of the Proposed Development. It will be removed as soon as reasonably practicable after completion of the works and the land reinstated where relevant.
- 5.3.16 In locations where construction might result in disturbance to crops, livestock or horses, the working area will be delineated by post and rope fence except in fields where livestock is present, in which case livestock or horse fencing will be used.
- 5.3.17 Vehicle access into the main construction compounds and the working areas will be controlled and limited to specified entry points. All personnel entries/exits will be recorded for security and health and safety purposes.
- 5.3.18 Gates at vehicle access and egress points will be required to open inwards towards the site rather than outwards onto the highway, wherever possible. As far as is reasonably practicable, gates will be positioned to allow vehicles to drive into the site clear of any public highway. Where provided for noise control purposes, gates will be of a similar material and construction to the boundary fence in which they are situated and will be closed except when in use for access.
- 5.3.19 Site access, egress and internal site vehicle routings will adhere, as far as is practicable, to the HSE guidance HSG 144 (The Safe Use of Vehicles in Construction Sites, 2009).
- 5.3.20 Where possible, there will be separate entrances and exits to sites for vehicles and pedestrians. The layout shall, where practicable, have an internal circulation route or turning bays to turn lorries on site, so as to ensure vehicles exit the site in forward gear. If reversing on to the highway is unavoidable, the Principal Contractor(s) will be required to provide traffic marshals to facilitate the safe departure of the vehicle.

5.4 Lay down/storage Areas

5.4.1 A number of temporary laydown areas/storage areas outside of the main construction site compounds will be used for the storage of materials and equipment, in order to reduce the number of vehicle movements required. These areas will be secured as appropriate depending upon what equipment is being stored within them. They will be removed, and the land restored as soon as reasonably practical after the completion of the works associated with them. Unless indicated in Part B of the CoCP or the CEMP(s) temporary lay down/storage areas will not be lit outside of core working hours except in the event that unauthorised visitors are found in these area at nighttime.

5.5 Fire prevention and control

5.5.1 The Applicant will require the Principal Contractor(s) to have in place appropriate plans and management controls to prevent fires (in line with HSE standards). The measures to be put in place will include the following:

- fire inspection and risk assessments will be prepared and carried out for all relevant areas and buildings;
- a Fire and Emergency Plan(s) will be prepared. This will be reviewed regularly. The Site Managers will ensure that they are understood and complied with by everyone on site;
- office fire alarms will be inspected and tested in line with the Fire and Emergency Plan(s);
- nominated trained fire marshals will be appointed for each area as appropriate. The marshals will be clearly instructed in respect of their duties;
- fire marshals will be on site at all times;
- all personnel (including visitors) will receive instruction in fire precautions, action and evacuation in the event of fire;
- adequate and suitable fire-fighting equipment will be provided on each floor of any site buildings, in readily accessible locations and maintained in a serviceable condition;
- fire exit routes, fire/smoke doors will be clearly signed, and written fire instructions displayed at suitable points within the site compounds;
- an emergency muster point will be positioned away from the offices that it is easily accessible and large enough for all of the workforce at that location to assemble and be accounted for;
- weekly inspections of escape routes, fire brigade access, fire-fighting facilities and work areas will be carried out. This will include a check that the requirements of the site Fire and Emergency Plan are being followed;

- fire drills will be carried out at least twice a year and weekly tests on all alarm and detection devices installed;
- a written record will be kept of all checks, inspections, tests, fire patrols and fire drill procedures;
- a quarterly check will be made of the detailed arrangements and actual procedures for calling the fire brigade and, where appropriate, (i.e., on the more complex sites); liaise with them to arrange site inspections and familiarisation tours;
- any security personnel will be liaised with;
- a Disaster Recovery Plan(s) will be developed and maintained by the designated Emergency Coordinator;
- all fire extinguishers will be regularly calibrated; and
- colour coded extinguishers for different fires will be provided in site compounds.

5.6 Emergency procedures and Preparedness Plan

- 5.6.1 Emergency procedures will be developed in line ISO 14001 criteria and HSE standards by the appointed Principal Contractor(s) and incorporated into an Emergency Preparedness Plan(s). The appropriate content, relevant to their statutory remit, will be submitted to the Environment Agency for approval. The procedures will be standardised as far as possible and adapted to the anticipated hazards and specific layout including the site conditions and the requirement for tunnelling/deep shafts and river working. This will include liaison with the emergency services as appropriate. Further details where relevant are set out in Part B of the CoCP.
- 5.6.2 The Emergency Preparedness Plan(s) will include, amongst other matters, pollution incident control measures (based on Environment Agency guidelines) with associated escalation procedures to the Applicant, and where relevant local authorities, fire and site evacuation procedures and contacts including contacts for the local authorities, statutory stakeholders and local community representatives as instructions to the workforce. Standby equipment such as road signs will also be made readily available.
- 5.6.3 The emergency procedures will also contain emergency phone numbers, location of the nearest accident and emergency department and the method of notifying local authorities and statutory authorities. They will also set out procedures to be followed in the event of an alarm sounding on site.
- 5.6.4 The Principal Contractor(s) will be required to ensure that procedures are put in place to deal with potential flood events, as is relevant to the flood risk at each construction working area (see Section 7.5). This will include a requirement to sign up to the Environment Agency flood warnings, identification of an evacuation route

and potential refuge areas in the event of a flood to enable the workforce to leave the site.

- 5.6.5 Suitable spill kits will be provided and positioned in vulnerable areas and staff will be trained in their use.
- 5.6.6 A record will be kept of all pollution incidents or near misses to ensure that appropriate action is taken, and lessons learned. Regular 'toolbox talks' will be held to raise staff awareness of incident prevention and to share lessons learned. The Pollution Incident Control Plan will set out written procedures for dealing with spillages and pollution.
- 5.6.7 The plan will contain the following as a minimum:
- guidance on the storage and use of hazardous materials with the aim of preventing and containing spills and releases of potentially hazardous material;
 - guidelines on the degrees of containment that take account of the nature of the materials and the sensitivity of the environment;
 - procedures to be adopted in the event of an environmental incident, to contain and minimise any adverse effects;
 - procedures and appropriate information required in the event of any spill or release; and
 - systems for notifying the Applicant, appropriate emergency services, the Environment Agency, other relevant authorities such as local authorities and the contractor's personnel.

5.7 Pollution Incident Control Plan

- 5.7.1 The Applicant and the Principal Contractor(s) will develop and implement a Pollution Incident Control Plan(s).
- 5.7.2 The plan(s) will detail the practical measures which will be implemented to avoid pollution incidents and will have regard to best practice measures and guidance set out in the Environment Agency's pollution prevention guidance notes (PPGs). Whilst these have been withdrawn, they remain best practice with the UK Government providing guidance on pollution prevention for businesses.
- 5.7.3 The plan will detail procedures to deal with any pollution incident that may occur, including notification procedures including as relevant notification of the Applicant and where applicable local authorities, along with response procedures (including appropriate materials, equipment and resources, timescales and to minimise the effects. The plan will complement and be consistent with the Emergency Preparedness Plan(s).
- 5.7.4 The site procedures, methods of working and materials will be selected having regard to the risk of pollution incidents and include mitigation measures to reduce

the likelihood and impact of any incident. Preventative containment measures will also be considered and used where appropriate.

5.7.5 The storage, handling, use and disposal of any potentially hazardous materials will comply with the relevant statutory provisions, Environment Agency and HSE's codes of practice and guidance notes, together with any relevant manufacturers' recommendations.

5.7.6 The relevant statutory bodies will be consulted during the development of the plan as is appropriate.

5.7.7 The plan will contain the following as a minimum:

- an assessment of the type of materials to be used and the risk of contamination;
- guidance on the storage and use of hazardous materials, with the aim of preventing and containing spills and releases;
- guidelines on pollution prevention for works adjacent to the River Cam and watercourses;
- guidelines on the degrees of containment which take account of the nature of the materials and the sensitivity of the environment;
- procedures to be adopted in the event of a pollution incident, to contain and minimise any adverse effects;
- procedures and appropriate information required in the event of any incident such as a spill or release;
- systems for notifying as required by legislation and is appropriate emergency services, relevant authorities, statutory bodies, the Applicant and the site personnel including the Project Director, Construction Manager and Environmental Manager (Section 6 refers);
- details of standby equipment and materials; and
- relevant procedures and contacts for each working area for forwarding to the emergency services and appropriate authorities.

5.8 Health and Wellbeing

5.8.1 The Applicant will require the Principal Contractor(s) to comply with the following:

- First Aid;
 - ensure a sufficient number of full and part time first aiders are on site at all times site, based upon the size of the workforce and number of visitors on site at the time. Training should be provided through an identified first aid training;
 - first aid equipment to be provided in the site office;

- first aid stations to be provided within the construction working areas;
 - the site compound to include a designated first room/area;
 - defibrillators to be located in the main offices within the site compound areas and within the construction working areas;
 - all injuries to be recorded using the specified reporting system. The nearest hospital location will be included in CEMP(s), identified as part of site induction with details to be posted on the wall of the main site office within each main compound area; and
 - each site compound area to include a board which identifies the main roles and responsibilities on site including all first aiders and fire marshals.
- Health care;
 - appropriate occupational health checks to be carried out in line with the regulations;
 - mental health ambassadors to be available at all times during working hours either via telephone or present on site; and
 - regular ‘stand downs’ to be held to ‘check in’ with staff on site and to discuss their health and wellbeing/any improvement which could be made.

5.9 Site lighting

5.9.1 Temporary lighting will be required during the construction period to ensure that construction work can continue safely and effectively during periods of the working day when there is insufficient natural daylight and where special circumstances working, or continuous working is required (see Section 5.10 below). A temporary lighting strategy will be incorporated into the CEMP(s). This will include details of its location and hours of use.

5.9.2 Temporary lighting will comprise the following:

- mobile trailer-mounted, generator powered light plant. This will generally be used in connection with specific construction works such as works associated with the pipelines;
- more permanent site lighting will be used to light the construction compounds and certain working areas. The following types of lighting are likely to be used in these areas:
 - LED mounted floodlights;
 - LED street lanterns;
 - LED linear battens; and
 - LED wall luminaires.

- 5.9.3 Where possible lighting will be solar powered.
- 5.9.4 Temporary lighting will typically be no higher than 8 metres high and mounted on columns/ structures.
- 5.9.5 Construction lighting will be designed and positioned to ensure that any artificial light emitted from the working areas minimises glare, does not prejudice health including for residents, walkers or passing drivers/trains, or create a nuisance under the Environmental Protection Act 1990 and to protect reduce potential impacts upon the natural and historic environment. Temporary lighting will be designed to accord with The Institute of Lighting Professionals Advice Note- Guidance Note 1 for the Reduction of Obtrusive Light (GN01/21) (2021) or any later revisions of this document published by the Institute and Guidance Note 08/18 - Bats and Artificial Lighting In The UK - Bats And The Built Environment Series (2018). Construction lighting will be between 50-300 lux but will generally be between 50-100 lux. Higher lighting levels will only be used where required in conjunction with specific construction activities i.e., concrete pours. A plant pre-check list will also be completed and the data sheets provided for the lighting so that the correct type of lighting is used and is compliant with the lighting levels indicated in each area. The pre-check list will be completed and recorded by the electrical supervisor of the PC.
- 5.9.6 Any road lighting will be designed to comply with the provisions of BS5489-1:2020 Design of Road Lighting. Lighting of Roads and public amenity areas - code of practice, where applicable.
- 5.9.7 Further details are set out in Part B of the CoCP.
- 5.9.8 Relevant local stakeholders will be consulted in respect of the proposed temporary lighting strategy as appropriate prior to its installation on site.

5.10 Working hours

- 5.10.1 The Proposed Development will comprise a number of different working areas within which a range of construction activities will be carried out including the construction of a new WWTP, shaft and tunnel construction and pipe laying along with a new outfall to the River Cam, plus decommissioning activities at the existing site.
- 5.10.2 Table 5.1 below sets out the proposed working hours and describes the types of activity which would be carried out under each category. Some activities will require periods of working on a continuous 24 hour, 7 days a week basis.
- 5.10.3 Part B of the CoCP confirms the working hours proposed for each works area. It also identifies where further controls over working hours are required taking account of the proximity of sensitive receptors such as residential properties.
- 5.10.4 As set out under section 3, and in accordance with the Community Liaison Plan (App Doc Ref 7.8), the Applicant/the Principal Contractor(s) will keep the local community

regularly informed with regard to the construction activities taking place and the working hours associated with those activities. This will include notifying the local community and any other relevant stakeholders before an activity falling within the very special circumstances category takes place or before a period of continuous working commences. The notification will include a description of the activity which will be carried out and details of how long the activity will last.

Table 5.1: Proposed construction hours

Working Hours Categorisation	Description
Winter core working hours (October to March).	These are the core hours that will apply to the majority of work areas and activities.
7am to 6pm Monday to Friday. 8am to 4pm 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><u>Daily mobilisation/maintenance activities</u> These will include the following:</p> <p>Arrival and departure of the workforce to the construction compounds.</p> <p>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).</p> <p>Site meetings (briefings in compound buildings) and quiet walk overs or site inspections.</p> <p>Refuelling of vehicles, plant and machinery.</p> <p>Site cleaning and maintenance (which does not require the use of plant or hammering/banging).</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>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> <p>Arrival and departure of the workforce to the construction compounds.</p> <p>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).</p> <p>Site meetings (briefings in compound buildings) and quiet walk overs or site inspections.</p> <p>Refuelling of vehicles, plant and machinery.</p> <p>Site cleaning and maintenance (which does not require the use of plant or hammering/banging).</p>

Working Hours Categorisation	Description
<p>Very special circumstances extension for particular activities.</p> <p>6pm to 10pm Monday to Friday 6pm to 10pm on Saturdays 8am to 2pm on Sundays.</p> <p>These are more likely to be required during the first two years of the Proposed Development.</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"> • major concrete pours including base slabs; • abnormal load delivery including those escorted by the Police; and • contract lifts, i.e., lifting of pieces of equipment on crane.
<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"> • 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; • where over pumping takes place 24 hour call out will be needed in order to respond to any issues should they arise; • 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 • Horizontal Directional Drill shots will need to be a period of continuous working in order to complete the drill shots.
<p>Out of hours working.</p>	<p>It would be beneficial to carry out the following activities in addition to those identified above, 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"> • construction deliveries to utilise periods of low traffic flow - this will be set out in the CTMP; • works within the highway or footpaths; • connections into Anglian Water’s existing network so that these can be done during periods of low demand; and • utility connections as required by the relevant statutory undertaker so that these can be done during periods of low demand.

Working Hours Categorisation	Description
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 there would be a requirement for them to 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 there would be a requirement for them to be explained to the local community as part of the regular liaison which the Principal Contractor(s) will be expected to undertake.</p>
Working hours for decommissioning activities	Decommissioning works would be undertaken during core hours only, but may include exceptional working hours for activities which cannot be undertaken during normal working hours (e.g. abnormal load deliveries). Core working hours are set out at the beginning of this table.

5.11 Tunnelling

5.11.1 The contractor responsible for tunnelling will be required to follow and adhere to the Association of British Insurers/British Tunnelling Society’s Code of Practice for Risk Management in Tunnelling.

5.12 Cranes and other temporary tall structures

5.12.1 All cranes will be operated in accordance with the requirements of CAP1096 (Guidance to crane users on the crane notification process and obstacle lighting marking).

5.12.2 For all cranes, regardless of location, the Principal Contractor(s) will acquire the necessary permits from the operator of Cambridge Airport and the Civil Aviation Authority (CAA) 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).

5.12.3 Any other tall structures on site such as a concrete batching plant if required, will also acquire the necessary permits from the CAA and the operator of Cambridge Airport and any safety recommendations incorporated into the site set up.

5.13 River work

Outfall to the River Cam

- 5.13.1 The new outfall structure will be constructed within a cofferdam located on the eastern bank of the River Cam. Sheet-piling is currently proposed to be used, with a reinforced concrete capping beam, to align, form and protect the riverbank immediately up and downstream of the outfall. The outfall structure is to be constructed of reinforced concrete using either cast-in-situ or precast techniques. The structure will include separate compartments for each of the outfall pipelines (jointly referred to as the Final Effluent (FE) and Storm Pipeline), each featuring access manholes and non-return valves. The riverbed, immediately in front of the outfall structure, will be re-profiled and protected with an anti-scour material (such as riprap).
- 5.13.2 Any de-watering required from the cofferdam would be pumped to a temporary settlement lagoon to remove sediment before discharging back into the river.
- 5.13.3 Normal construction techniques will be used for the reinforced concrete works in the dry excavation with lifting provided by the crawler crane with a lattice jib.
- 5.13.4 Part B of the CoCP includes site specific measures for works associated with the construction of the new outfall.
- 5.13.5 An Outfall Management and Monitoring Plan (OMMP) will be produced prior to the commencement of the below construction activities:
- Outfall construction including preparatory works, clearance, temporary river works, construction, dewatering, reinstatement;
 - Compound set up;
 - Ditch works including pre works habitat creation, preparatory works at the works location, clearance, isolation of ditch, construction, dewatering/over pumping, reinstatement;
 - Navigational controls and communications with the Conservators of the River Cam and river users; and
 - General reinstatement of the footpath.
- 5.13.6 The OMMP will be a live document which will be updated as and when required to reflect the requirements and conditions of the relevant permits and consents to be sought outside of the DCO (see Other Consents and Permits Register (Application Document Ref 7.1)).

Culverts

- 5.13.7 Where there may be a need to provide a temporary crossing or access over a watercourse, such as for a temporary farm access, temporary culverts will be installed. The culvert length will be kept as short as possible and located as close to the existing watercourse alignment as reasonably practicable.
- 5.13.8 Any relevant permits will be obtained before the culvert is installed. Installation and removal will thereafter take place in accordance with the conditions of the relevant permit.

River crossings

- 5.13.9 The Proposed Development will cross the River Cam at a number of locations.
- 5.13.10 The Waste Water Transfer Tunnel will be constructed using a construction method known as pipe-jacking. It will be located below the depth of the riverbed and will not therefore have any direct impact upon the river or its banks.
- 5.13.11 It is proposed to install the Waterbeach Pipeline where it crosses the River Cam via Horizontal Directional Drill (HDD) to avoid any direct impact upon the river and its banks.

5.14 Watercourses/drainage channels

- 5.14.1 The Proposed Development will involve the crossing of number of other watercourses/channels, notably by the Waterbeach Pipeline.
- 5.14.2 Shallow ditches will be temporarily dammed and over pumped to maintain water flow whilst excavation works to lay the pipe are undertaken. These will be reinstated promptly once the pipe has been laid. Deeper/larger ditches will be crossed using trenchless crossing techniques with negligible impact to water levels, flows in the ditch or the adjacent banks.

Land drains

- 5.14.3 Where possible land drains will be avoided. If this is not possible then these will be repaired and restored to the functionality of the existing land drains to be as it was prior to commencement of works.
- 5.14.4 In localised areas where there is extensive land drainage, it may become necessary to install a Pre and Post works land drainage system in consultation with landowners, their tenants and/or land agents.
- 5.14.5 Extensive land drainage refers to the following:
- either the existing drainage system cannot be avoided during construction; and/or

- areas where repairs may not be sufficient to maintain adequate drainage (that is at least equivalent to the existing drainage arrangement)

5.14.6 The trigger regarding Pre and Post construction work are considered as follows:

- Pre construction work: this is the preparation(s) that must be carried out in advance of a construction activity that may encounter existing land drainage pipe/systems; an example of this is prior to trench excavation across a field(s) to enable a pipeline(s) to be laid.
- Post construction work: this applies to the restoration(s) that must be carried out after a construction activity that may have encountered existing land drainage pipes/systems; an example of this is after a pipe trench across a field(s) is backfilled.

5.14.7 As noted above the landowners and their tenants will be provided with an opportunity to consult and agree what drainage work is to be carried out. The details of this agreement will be documented in a Pre-start document before contractors enter the land.

5.15 Cambridge Airport

5.15.1 As set out above, the location and height of cranes and any other tall structures (above 10 metres) will be notified to the operator of Cambridge Airport (and the CAA as required) prior to their erection or use on site. Details of temporary lighting will also be made available. Any appropriate adjustments or additional safety measures will be incorporated into the CEMP(s) following this engagement.

5.15.2 An outline Wildlife Hazard Management Plan (WHMP) has been prepared (Appendix 8.18, App Doc Ref 5.4.8.18). This discusses both temporary and operational attractants and sets out measures to address associated risk and during the construction and operation of the Proposed Development. The plan will be updated as required before works commence on site.

5.16 Overhead lines

5.16.1 Where work has to be carried out close to or underneath overhead lines this will be done in accordance with Guidance Note GS6 published by the HSE.

5.16.2 A risk assessment will be undertaken by the Principal Contractor(s) to eliminate the risk and if this is not possible to ensure that suitable control measures in line with GS6 are put in place, based upon the voltage of the line.

5.16.3 All construction workers will be briefed on the risks and provided with instructions about the risk prevention measures. All works will be directly supervised by someone who is familiar with the risks and who can make sure that the required safety precautions are observed.

5.17 Rail and A14 crossing

- 5.17.1 The transfer tunnel and Waterbeach Pipeline will need to be constructed under the Cambridge to King's Lynn Railway Line. All works under and in close proximity to the railway line will be covered by the protective provisions in the DCO which secure the method of working and necessary protection measures. These are currently being discussed with Network Rail. and will include any monitoring requirements.
- 5.17.2 The Waste Water Transfer Tunnel, FE and Storm Pipeline and the Waterbeach Pipeline will also need to be constructed under the A14. All works under and in close proximity to the A14 will be covered by the protective provisions in the DCO which secure the mention of working and necessary protection measures including any monitoring requirements. These are currently being discussed with National Highways
- 5.17.3 Both Network Rail and National Highways will also of the agreed protective provisions specify when construction works can be carried out.

5.18 Utility works

- 5.18.1 The Applicant will require the Principal Contractor(s) to identify all utility diversions, including the Applicant's existing infrastructure within the existing Cambridge WWTP, as part of the detailed design along with new utility connections. These will be covered by the protective provisions in the DCO.

6 Construction Roles and Responsibilities

6.1 General

- 6.1.1 The following key construction roles and responsibilities have been identified to ensure that the impacts of the Proposed Development can be minimised.
- 6.1.2 Final job titles may vary from those listed below but the key responsibilities under each role are not expected to alter materially.

6.2 Recruitment

- 6.2.1 Anglian Water Services Limited believes that inclusion is vital to doing good business and supporting the long-term health of the organisation. It believes that a diverse workforce creates idea generation, and strengthens our adaptability to overcome future challenges. When recruiting personnel and providing opportunities for the Proposed Development Anglian Water Services Limited and the Principal Contractor will:
- engage with education teams to work with schools and colleges to provide work experience, where possible (some opportunities would be subject to age restrictions for Health & Safety purposes);
 - work with the early careers teams to link with colleges and universities to promote potential graduate, apprentice and internship opportunities seeking to attract applicants from underrepresented areas;
 - engage with stakeholders, including local authorities to identify local platforms and channels for job advertisements;
 - work with recruitment teams to encourage applications from diverse range of candidates by providing support with employability skills, application, and interview techniques and liaising with, and potentially attending, job centres.

6.3 Project Director or similar

- 6.3.1 Given the scale of the Proposed Development, a Project Director will be appointed. The Project Director will have overarching responsibility, under whom there will be a number of Construction Managers who will be responsible for delivery of specific aspects of scheme i.e., the Waterbeach Pipeline, etc.
- 6.3.2 The Project Director will be responsible, amongst other matters, for ensuring systems are in place to maintain and update the CEMP(s) where appropriate; to ensure environmental standards are adhered to and for monitoring compliance during construction; including the carrying out regular monitoring and inspections of construction work activities; and for induction courses on environmental issues.

6.4 Environmental Manager or similar

- 6.4.1 The Environmental Manager will be responsible for the interface between the environmental specialists and the contractors. The Environmental Manager will have primary responsibility for managing environmental issues through construction and post-construction monitoring and for obtaining any relevant licences and consents not secured when construction commences. There will be a series of specialists to support this role and the management of environmental issues on site, such as an Ecological/Environmental Clerk of Works (ECoW) who will oversee specific construction activities and will also ensure that construction works are carried out in accordance with the requirements of the protected species licences. Specialist ecologists will be appointed as required (i.e. an ornithologist in the event Schedule 1 species of breeding birds are found to be present on site).

6.5 Health and Safety Lead

- 6.5.1 A Health and Safety Lead will be appointed to support and advise the Project Director and their team on health and safety matters as construction works are undertaken.

6.6 Logistics Manager

- 6.6.1 A Logistics Manager will be appointed by the Principal Contractor(s) and will have overarching responsibility for the delivery and implementation of the detailed CTMP.

7 Management of the Environmental Effects

7.1 General

7.1.1 This Section identifies a number of overarching general mitigation measures which are proposed to avoid and minimise the impacts of the Proposed Development during the construction period. The measures set out below are based upon standard industry guidance and best practice. They have also been informed by the EIA process and through consultation and engagement with the local community and stakeholders. Site specific measures are set out in Part B of the CoCP.

7.2 Ecology and Nature Conservation

- 7.2.1 Construction works will be carried out in such a way as to make sure that disturbance to nearby ecological interests are controlled, appropriate measures are in place to protect the ecology of these areas and to avoid impacts on protected species in accordance with relevant good practice and statutory provisions/legislative requirements.
- 7.2.2 Detailed ecological/arboriculture surveys have been carried out to inform the ES (Chapter 8: Biodiversity, App Doc Ref 5.2.8). The results of these surveys have also been and will continue to be used to inform construction techniques and methodologies, to avoid or minimise the impact of the Proposed Development on habitats and protected species.
- 7.2.3 Protected species/conservation licences will be obtained from Natural England prior to any works starting within the area where a protected species has been identified and a licence is required. At this stage it has been confirmed that Natural England licences will be required for bats, badgers and water vole. The requirement for further protected species licences will be kept under review and informed by pre-commencement surveys. All works will be carried out in accordance with the conditions of the licences.
- 7.2.4 Mitigation measures will be implemented to protect other species including nesting birds, otters, bats, fish, invertebrates and reptiles.
- 7.2.5 In accordance with the Wildlife and Countryside Act 1981 (as amended) it will be a requirement for construction activities to take reasonably practical measures to minimise harm to and disturbance of wildlife caused by noise and vibration, dust and other air pollution, to consider the impact on wildlife when erecting site lighting and to provide construction staff with training on how to avoid damaging site ecology during construction.
- 7.2.6 A number of ecological commitments have been made in the ES (Chapter 8: Biodiversity, App Doc Ref 5.2.8). These will be incorporated into the CEMP(s) and the Principal Contractor(s) will be required to adhere to these during the construction process.

General Mitigation Measures

- 7.2.7 The following general approach is proposed.
- 7.2.8 Pre-commencement surveys will be undertaken within each works area (based upon the DCO Works Plans, App Doc Ref 4.3) to confirm the presence or absence of protected species. The timing of these will be appropriate for the species to which they relate and the phase during which the works will be undertaken. Further adjustments to construction techniques or the phasing of the works will be made if it is appropriate and feasible to do so following these surveys or any additional mitigation measures identified. All surveys will be undertaken sufficiently in advance of the works start time to enable any such mitigation to have been undertaken. Areas of habitat which could support protected species will be cleared sensitively in accordance with all relevance guidance.
- 7.2.9 As part of the site induction process site staff will be given specific “tool-box talks” relating to protected species and habitats and the methodologies appropriate for working within areas containing these. The toolbox talks will include details of the actions to be taken should they encounter wildlife during construction, such as immediately informing the environmental manager or the ECoW, along with details of the Natural England licences covering the Proposed Development including the agreed working methodologies. As a minimum there will be specific talks on the following:
- Reptiles;
 - Water vole;
 - Bats;
 - Nesting birds; and
 - Badger.
- 7.2.10 The Environmental Manager alongside the ECoW will observe operations particularly during the initial phases of fencing installation, vegetation clearance and earthworks, during any habitat creation operations and within areas where protected species have been identified. Existing vegetation will be retained where feasible.
- 7.2.11 Sensitive ecological areas will be identified at an early stage and fenced off with appropriate fencing to restrict the movements of staff and machinery into them.
- 7.2.12 The measures outlined under Sections 7.4, 7.5 and 7.8 below in respect of control of run off, the storage of materials and the management of dust will be implemented to avoid the pollution of designated sites and the local water environment during construction.
- 7.2.13 Construction lighting will be sensitively designed to minimise impacts upon protected species as set out in Section 5.9.

- 7.2.14 If protected species are found during construction, then works will cease in the immediate area and the Environmental Manager will attend site to manage the issue, with input from the ECoW as required. Works will only recommence at the direction of the Environmental Manager (as advised by the ECoW). This may require appropriate mitigation and compensation.
- 7.2.15 If other species are found to be present within the working area, such as deer, the Environmental Manager will be notified and works within the area will cease until appropriate management measures, such as the use of fencing, have been put in place. Works within that area only recommence at the direction of the Environmental Manager.

Nesting Birds

- 7.2.16 If feasible, suitable habitat for breeding birds such as skylarks, including hedgerows, will be cleared between September and mid-February, so it is outside of the breeding bird season.
- 7.2.17 Where this is not feasible vegetation will only be removed after it has first been inspected by a suitably experienced ecologist at the instruction of the Environmental Manager, who will monitor construction activities during the breeding bird season.
- 7.2.18 If any active nests are discovered these will be retained along with a suitable buffer around them (to be advised by the Environmental Manager with advice from specialist advisors as appropriate i.e., from an experienced ornithologist in relation to any Schedule 1 bird species (as identified under the Wildlife and Countryside Act) nests, along with any requirements for mitigation.
- 7.2.19 Any active nests will be monitored by the Environmental Manager or the appointed ornithologist during construction for signs of disturbance and if necessary, methods will be altered or works delayed to prevent negative impacts to birds, their nests and any eggs or dependent young.
- 7.2.20 Some species of bird may nest outside of the core breeding season (i.e., within the September – mid February period). Should a nest be discovered outside of this period appropriate buffers will be put in place and the measures outlined above followed.
- 7.2.21 Planting and landscaping which may involve potentially destructive and noisy machinery will be managed to ensure works are completed at times to avoid impacts upon nesting birds.

Bats

- 7.2.22 All licensable works affecting bats will be undertaken in accordance with the relevant licence conditions. This will include any necessary monitoring of construction activities.

- 7.2.23 No trees identified within the ES as having bat roosts will be felled (App Doc Ref 5.3.8) although there may be some disturbance to the roosts within the proposed WWTP may be disturbed as a result of construction activities.
- 7.2.24 Further pre-construction bat surveys of trees identified as having the potential to support bat roosts will be undertaken by an ecologist if there is a risk of impact. Preconstruction assessment, climbed/aerial survey and/or dusk to dawn surveys (or surveys as supported by the most up to date guidance) will be carried out as appropriate to re-assess the status of roosting bats.
- 7.2.25 To minimise breaks in bat flight line connectivity, the area of hedgerow removal within known bat flight lines and foraging areas will be kept to a minimum and functional hedgerow reinstated promptly in the first planting season post construction. The ECoW will be responsible for producing a report to confirm habitat reinstatement has been satisfactorily carried out.
- 7.2.26 Where required by licences, compensatory features will be installed to provide to continued roosting provision (for example appropriate bat boxes) where any roost is lost. Additional roosting provision will be provided on newly planted trees once mature, or within Low Fen Drove Way CWS. Early planting of larger specimen trees and hedgerow plants will support linkages to facilitate retained commuting and foraging corridors.
- 7.2.27 Additional “thickening” of retained hedgerows will be considered to promote habitat connectivity for bats, in particular making use of hedgerow removed from land permanently required. Any works to hedgerow would be under the supervision of a suitably experienced ecologist.
- 7.2.28 A temporary Lighting Strategy will also be developed in accordance with Guidance Note 01/21 The Reduction of Obtrusive Light Guidance (Institution of Lighting Professionals, 2021) and Guidance Note 08/18 Bats and Artificial Lighting in the UK (Institution of Lighting Professionals, 2018).

Badgers

- 7.2.29 The pipeline routes and temporary construction areas have been designed to avoid direct effects upon badger setts as far as is feasible. To prevent disturbance of a badger sett whilst occupied, a buffer zone of at least 30m will be adopted where possible between the construction working area and the known extent of the active sett.
- 7.2.30 Pre-construction badger surveys, a minimum of 3 months prior to construction, will also be undertaken to determine if the badger distribution has changed since the ES surveys were undertaken and to establish which setts remain in active use along with the extent of their use. The pipelines will be micro sited within the limits of deviation to reduce any impact as far as is feasible.

7.2.31 Where there is the potential for active badger setts to be damaged or destroyed by construction work or unacceptably disturbed (i.e., by vibrations), these will be closed using appropriate methods and timings subject to the necessary licence from Natural England being obtained. This will include any necessary monitoring.

7.2.32 The ecological surveys have also identified that badgers forage within the working areas. A Natural England protected species licence will be in place to legally allow for the disturbance badger, with mitigation measures including supervised working under an agreed method statement (ES Chapter 8 Appendix 8.21 Confidential Badger Ghost Licence Method Statement) by a licenced ecologist. As there is the potential for badgers to be using the working area for foraging activities, the following general measures will be referred to within the species licence; as illustrated in ES Chapter 8 Appendix 8.21 Confidential Badger Ghost Licence Method Statement.

7.2.33 These measures will also be relevant/appropriate for other protected species such as otters:

- excavations will be closed overnight, or shallow ramps / planks of wood used to provide a means of escape;
- any chemicals will be stored in containers overnight and any spillages cleaned up immediately;
- site staff will be informed of badgers using the site through the site induction and a Toolbox Talk;
- if appropriate and practical vehicles may be prevented from accessing certain areas which will be marked by fencing and signage;
- pipes over 120mm diameter will be capped off during storage to prevent access by badgers and other wildlife;
- material or equipment which poses a risk of injury will be securely covered or fenced off, such as sharp objects or cement;
- in order to avoid attracting badgers to the site compound areas any food waste will be disposed of in appropriate bins or removed from site at the end of each day;
- construction working areas will be demarcated and fenced (Heras fencing) in a suitable way so as to control working areas in sensitive locations, but also with the added benefit of keeping badgers away from construction areas;
- a temporary lighting to be designed to accord with The Institute of Lighting Professionals Advice Note-Guidance Note 1 for the Reduction of Obtrusive Light (GN01/21) (2021) or any later revisions of this document published by the Institute and Guidance Note 08/18 - Bats and Artificial Lighting In The UK - Bats And The Built Environment Series (2018). This also will include details of lighting location and hours of use;
- works to setts timed between 1 July and 30 November;

- use of machinery within 10 metres of setts will be restricted to hand-held machine tools or small machinery; and
- lighting where required will be minimised and directed away from setts.

Water vole

- 7.2.34 All works affecting water vole will be undertaken in accordance with the requirements of a conservation licence for water vole and agreed method statement. Where possible works within ditches identified as water vole habitat will be undertaken within the period between 15th February and 15th April (or as otherwise agreed with Natural England).
- 7.2.35 Prior to the commencement of works to ditches the ECoW will give a toolbox talk to site staff. The ECoW (or other suitably experienced ecologist as identified by the ECoW , will undertake a pre-commencement check of suitable habitats and supervise vegetation clearance. Pre-construction water vole surveys will be undertaken as far as is feasible between April – October to re-assess and determine the status of water vole on watercourses which are crossed by construction activities and were previously identified as being suitable to support them.
- 7.2.36 For works within the vicinity of watercourses known to support water voles, but where the watercourse itself is not crossed by open cut techniques, a minimum buffer zone of at least 10 metres will be maintained between the edge of the bank and the construction area. Demarcation fencing will be erected to prevent encroachment of vehicles and materials storage into the water vole habitat, unless the Environmental Manager advises this is not required due to the offset with the watercourse.
- 7.2.37 Where water vole are present and wherever possible, pipelines will be micro sited to cross the watercourse at locations where there is lower quality water vole habitat. Bank habitat disturbance will be kept to the minimum practicable for the laying of the pipeline and to allow for safe working practices.
- 7.2.38 Burrows within the affected area will be removed following habitat manipulation (strimming and vegetation removal) and displacement measures in line with the displacement methodology outlined in Box 9:C of the Water Vole Conservation Handbook – Third Edition (WCRU 2011). The displacement area will include the area to be directly affected by the works as well as an appropriate buffer to ensure that burrows adjacent to the works are not incidentally damaged. The retained habitat adjacent to the working area will be demarcated to prevent encroachment.
- 7.2.39 Where practical, works at watercourses known to support water vole will be undertaken as soon as the displacement measures are complete. Where this is not possible the area will be maintained free of water vole by regularly strimming the affected area or enclosing the area using water vole proof fencing, with regular monitoring and inspections to ensure water vole are still absent in accordance with the conditions of the license.

- 7.2.40 Habitats will be reinstated as soon as possible on completion of the crossings. Topsoil stripped from the banks will be stored separately in accordance with the Outline Soil Management Plan (Appendix 6.3, App Doc Ref 5.4.6.3) and reinstated following completion of the works. Bank side grassland habitat will be re-seeded with an appropriate seed mix to aid revegetation. Where agreed with the landowner plant species which are favoured by water vole e.g., rushes, sedges or reed will be included in the seed mix.
- 7.2.41 A record of all actions completed and the mitigation measures implemented will be reported back to Natural England in accordance with the license conditions.

Otter

- 7.2.42 Pre-construction otter surveys will be undertaken at watercourse crossings where otter have been identified. This will avoid impacts upon otter holt sites and to ensure there are no otter holts or potential holts or couch sites which may be affected by the Proposed Development.
- 7.2.43 In order to maintain the free movement of otter along riparian corridors, there will be a stand-off from the banks, where a non-open cut crossing is to be made on a watercourse where otter are present.
- 7.2.44 As otter are mainly nocturnal, working of hours of darkness will be restricted where practicable in proximity to known otter habitat, to avoid disturbance to otter moving throughout their territory.
- 7.2.45 Where nighttime working is required at river crossings where non-open cut techniques are used, the HDD pits will be positioned as far away from watercourses as is practical. Lighting of the working area will, as far as is safe and practical, be positioned to avoid the watercourse and bank side habitat being lit to provide a safe transit route for otters. Directional lighting or a screen to provide a visual barrier between the works and the river will be placed along the riverward side of the working area where possible. Site compounds and storage or waste storage facilities will be located away from otter habitat. The measures set out in Section 7.2.38 above will also help mitigate any impact upon otters. To minimise the loss of riparian otter habitat at watercourses confirmed to support otter, the working width for open cut crossings and the area of bank habitat disturbed by construction access works will be kept to the minimum required for safe working practice and will be clearly demarcated/fenced to prevent encroachment into the surrounding habitat.
- 7.2.46 On completion of the works bank side vegetation will be reinstated.

Reptiles

- 7.2.47 A Reptile Mitigation Strategy will be produced by the contractor prior to works commencing on site. The strategy will include a method statement of works that will be agreed by the local authority ecologist. It is proposed that the impact upon reptiles be mitigated during the construction period through a combination of reptile

fencing (around the proposed WWTP), sensitive vegetation clearance and management including hard searches as appropriate, and local translocation. Herpetofaunal fencing may be required to be installed and maintained during works in areas of higher density reptile populations or as directed by the agreed method statement. The ECoW will provide a reptile specific 'tool-box talk' to site staff prior to any work being carried out.

7.2.48 The Reptile Mitigation Strategy will take into consideration other local development and will provide a coordinated approach to prevent any animals being double-handled during any translocations.

7.2.49 The ECoW or their nominated ecologist will be present once construction begins and will be available to check areas of habitats prior to removal. Where vegetation management is required, this may require vegetation is removed in a phased two-stage approach, with this outlined within the agreed method statement and guided by the ECoW or other suitably experienced ecologist identified by the ECoW.

7.2.50 Should any reptiles be found during construction this will immediately be reported to the Environmental Manager who will arrange for them to be safely relocated to equivalent and appropriate habitat outside any impactful zone by a suitably experienced person.

7.2.51 The Reptile Mitigation Strategy will also include a post construction monitoring programme for locations where reptiles and reptile suitable habitat is present. Requirements of this monitoring programme will include:

- All monitoring to be carried out by a suitably qualified ecologist;
- Where low populations of reptiles have been identified 1 year of post construction monitoring will be undertaken;
- For the Waterbeach Pipeline post construction monitoring will be undertaken in Years 1, 3 and 5;
- For the Waterbeach Pipeline survey type is to include both presence/absence surveys and population size class assessments; and
- All monitoring events will include habitat suitability assessments.

Riparian and aquatic habitat

7.2.52 Areas of riparian habitat that will be temporarily disturbed as part of the Proposed Development will be kept to a minimum as far as is practical. The working area will be delineated prior to the commencement of construction and until works are complete to prevent damage to the surrounding habitats.

7.2.53 Bank and any aquatic vegetation will be left in place for as long as practicable. Topsoil from the banks will be removed and stored separately for reinstatement after construction in accordance with the Outline Soil Management Plan (Appendix 6.3, App Doc Ref 5.4.6.3).

- 7.2.54 The working width through the channel will be kept to the minimum required for safe working practice and will be clearly marked to prevent encroachment. The channel bed material will be removed prior to the excavation of the trench, stored separately and replaced once construction works are complete to promote rapid colonisation of the area by aquatic invertebrates and aquatic plants. Where appropriate, marginal vegetation of ecological value will be removed from the watercourse and stored upstream for use in reinstatement.
- 7.2.55 The proposed working method will incorporate measures to maintain the flow downstream of the crossing point.
- 7.2.56 The preconstruction bank and channel profiles will be restored on completion of the pipeline crossings. Channel bed-substrates will be replaced to the same composition and topsoil reinstated to the banks.
- 7.2.57 Where fish are identified and where feasible works will be carried out between August and October and in low flow conditions to protect potential fish spawning or nursery sites.

Other protected species

- 7.2.58 No Great Crested Newts have been identified within the survey area. No impacts are therefore anticipated. Pre-construction presence/absence surveys will, however, be undertaken by licenced ecologists in the appropriate season (March-June) before works commence on site.
- 7.2.59 If Great Crested Newts are found to be present a mitigation strategy will be developed in accordance with the Great Newts Newt Guidance (Natural England 2011) and any necessary licences obtained from Natural England.

Invasive species

- 7.2.60 To prevent the spread of invasive species the following measures will be implemented if necessary:
- pre-construction surveys will be undertaken to identify invasive species listed in Schedule 9 of the Wildlife and Countryside Act 1981 and Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019;
 - any contaminated areas will be marked out with appropriate fencing along with associate signage to prevent site staff from entering the contaminated area. Site staff will receive training as part of the 'tool box talks' to enable them to identify invasive species including Floating Pennywort, and they will be required to immediately report any new areas of invasive species found during the construction period to the Environmental Manager;

- where invasive species cannot be avoided an appropriate strategy for their removal will be prepared by the Environmental Manager in consultation with the Environment Agency and any necessary permits obtained. All works will thereafter be carried out in accordance with the approved strategy/permit; and
- construction method statements will be prepared with reference to best practice guidelines, such as 'Managing invasive non-native plants in or near fresh water' (Environment Agency 2010). These will also ensure that new pathways for invasive or non-native species are not created such as between Bannold Drain, the River Cam and Black Ditch. The construction method statements will include the following measures to prevent the spread of these species:
 - no equipment or materials will be stored in the contaminated area and no vehicles with caterpillar tracks will work within contaminated areas;
 - contaminated soils (containing the plants, their roots or their seed) will be carefully excavated, removed from site and disposed of correctly at a licenced disposal site. Contaminated soils will not be stored or used in any other areas of the site; and
 - machinery or equipment (including work boots) will be cleaned and checked before being brought on to site and before leaving the area.

Biosecurity measures

7.2.61 The Applicant will also require the Principal Contractor(s) to put in place appropriate biosecurity measures. As required, these will include the following:

- site staff and visitors will be expected to arrive on site with clean footwear and in a clean vehicle;
- established tracks will be used where possible and vehicles parked on hard standing;
- facilities to be provided on site to clean footwear and equipment;
- whenever possible footwear and equipment will be allowed to thoroughly dry before reuse (drying rooms will be provided within the main site compound areas);
- vehicles are to be kept clean and any accumulated mud removed;
- measures to control and limit access to waterbodies; and
- keep contact time between equipment and raw water to be kept to a minimum.

7.2.62 Any soil/sediment used in works shall only be used where known to be free of invasive non-native species. If the soil/sediment originated from off-site, it shall be obtained from a source confirmed as uncontaminated with invasive non-native plant species and/or their propagules.

7.2.63 In the event that there are any exotic notifiable diseases identified as affecting the local area (for example Avian Influenza) any guidance issued by Defra would be strictly adhered to.

Tree/Hedgerow removal and protection

7.2.64 Where feasible impacts upon existing trees and hedgerows will be reduced through a reduction in the working areas and micro sitting of pipelines to utilise existing gaps in hedgerows or areas where the hedgerow is weaker.

7.2.65 Tree/hedgerow protection measures are shown on the Tree Protection Plans within the Arboricultural Reports (Appendices 8.17 & 8.19, App Doc Ref 5.4.8.17 & 5.4.8.19). The type of protection proposed will depend upon the nature of the activity being undertaken but will accord with BS5837 Trees in relation to construction (2012) and National Utilities Group (NJUG) Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees (2007). Specific measures can be found in the Code of Construction Part B (App Doc Ref 5.4.2.2).

7.2.66 For root protection areas, the extent of the root protection areas (RPAs) will be marked out by rope and post barriers (location as shown on the drawings in Appendix 3 (Appendix 8.19) and Appendix A.1 (Appendix 8.17)). Where access is required and the RPAs extend beyond the protective barrier, ground protection will be used to prevent compaction damage to the soil. RPA distances as set out in Appendix 8.17 & 8.19 will be used to correctly place the protection zone to ensure all the RPA is enclosed to allow for any drift of the GPS signal during plotting. All measurements will be taken from the nearest trunk of the tree/group to the work area.

7.2.67 Tree/hedgerow works required to facilitate the relevant phase of the Proposed Development will be carried out prior to the commencement of on-site operations associated with that phase. Clearance will be sufficient to enable construction works to be implemented without damaging retained trees.

7.2.68 Any unforeseen works associated with the Proposed Development that could affect the existing trees will be discussed and approved by a qualified Arboriculturist prior to commencement of any works.

7.2.69 Early delivery of a number of areas of landscaping associated with the new WWTP works is proposed as set out in the LERMP (Appendix 8.14, App Doc Ref 5.4.8.14). In order to protect these areas during construction an exclusion area will be marked out using highly visible demarcation with appropriate signage.

7.2.70 The measures set out under section 7.4 in respect of Soil Management and in the Outline Soil Management Plan (Appendix 6.3, App Doc Ref 5.4.6.3) will ensure the rapid and effective reestablishment of habitats especially hedgerows and trees.

Reinstatement

Habitats

- 7.2.71 Temporary habitat loss will occur during construction (for example because of land temporarily required for haul routes, access roads, compounds, spoil heaps, shafts as well as open cut areas for pipeline installation). These habitats will be reinstated post works to match those of habitats currently present (unless agreed otherwise with the landowner).
- 7.2.72 Pre construction surveys shall include checks for plant species identified in Table 3-1 of Appendix 8.10 (App Doc Ref 5.4.8.10). Where these are identified, measures should be taken to avoid these such as refinement of working areas or local amendment of access tracks. Where avoidance is not possible the plants and or soils containing the plants should be either locally translocated or where practicable replanted. The translocated area should be protected during construction (i.e. fencing to prevent access). As required by the SMP disturbed areas will be returned to existing use once excavation/earthworks have ceased.
- 7.2.73 Reinstatement planting to reestablish habitats will be undertaken in the first available planting season following construction. Species mixes will match the existing habitat.
- 7.2.74 Any reinstatement of habitats carried out as part of the Proposed Development will be monitored for five years from completion of the construction phase. Any which fails to establish or becomes seriously damaged or diseased within five years after completion of construction will be replaced in the first available planting season with stock of the same species and size as that originally planted unless otherwise agreed with the Local Planning Authority and as agreed with the landowner.

Trees and Hedgerows

- 7.2.75 Replacement hedgerow planting will be of native species, of British origin and appropriate for the local area. Hedgerows will be enhanced with species rich planting where possible.
- 7.2.76 Where tree removal is required, reinstatement planting will be carried out as close as reasonably practicable to the removal location. Reinstatement species will be one of the following:
- the same species;
 - a native species of British origin; or
 - in the case of Ash species, a native species of British origin which supports the same biodiversity as Ash.
- 7.2.77 Any reinstatement planting carried out as part of the Proposed Development will be monitored for 5 years from completion of the construction phase. Any planting which dies or becomes seriously damaged or diseased within the 5 years after completion of construction will be replaced in the first available planting season with

stock of the same species and size as that originally planted unless otherwise agreed with the Local Planning Authority.

7.3 Historic Environment

- 7.3.1 Detailed archaeological/built heritage surveys of the Proposed Development area have been undertaken. These include geophysical surveys, heritage setting surveys and intrusive archaeological evaluation.
- 7.3.2 Before works commence on site an Archaeological Investigation Mitigation Strategy (AIMS) will be produced in line with an archaeological brief which will be issued by the Cambridgeshire Historic Environment Team.
- 7.3.3 An archaeological contractor will be appointed by the Applicant. The archaeological contractor will be responsible for the delivery of the archaeological mitigation programme as set out in the AIMS. This will include the preparation of the site-specific schemes of investigation, reporting and publication.
- 7.3.4 It is expected that the AIMS will be structured as follows:
- Part 1 - the detailed archaeological mitigation strategy. This will describe the principles to be applied in undertaking archaeological mitigation on the Proposed Development. It will detail the relevant archaeological baseline, survey results and rationale for mitigation for each of the identified mitigation areas; and
 - Part 2 - the overarching scope of works. This will discuss the strategy for each of the mitigation approaches and present outline method statements. These will form the basis of the works detailed in the site-specific schemes of investigation. It will also outline the requirements for communication, monitoring and reporting along with the procedure for completing the archaeological works.
- 7.3.5 The archaeological investigations will be monitored by the Cambridgeshire Historic Environment Team and the appointed archaeological contractor on behalf of the Applicant.
- 7.3.6 Where possible impacts to non-designated archaeological remains will be mitigated by avoidance of the identified areas. Where non-designated archaeological assets fall within a construction area but can be avoided by the construction works, a physical barrier will be installed around the asset at the commencement of the construction works and thereafter retained until works in that area are complete.
- 7.3.7 Where non-designated archaeological assets are identified within the construction area and impacts cannot be avoided, archaeological investigation mitigation may be required. The details and areas where archaeological investigation is required will be set out in the Archaeological Investigations Mitigation Strategy.

- 7.3.8 A chance find strategy will also be developed for the construction phase. The strategy will comprise an archaeological briefing which will be included in the site induction and as part of the site procedures. The induction will include details on what to do if archaeological finds are encountered.
- 7.3.9 Remains of potential archaeological interest uncovered by any construction works not subject to active archaeological monitoring will be protected and left open for inspection by the appointed archaeological contractor who will be informed promptly of any such discovery. The archaeological contractor will thereafter liaise with the Cambridgeshire Historic Environment Team as appropriate.
- 7.3.10 In the event that human remains are found during excavation work, they will be isolated and protected from further disturbance immediately. The Project Director and the local coroner will be informed. No works will thereafter take place in the area until advised by the coroner. Any necessary licences will be obtained. The remains will thereafter be excavated and recorded in line with current industry practice.
- 7.3.11 The Code of Construction Practice Part B includes specific measures to be implemented where there is the potential for impacts on historic environment assets. General measures to be implemented across the Proposed Development include construction lighting measures as set out in the Lighting Design Strategy (App Doc Ref 5.4.2.5) and, where required, solid hoarding around construction compounds.

7.4 Land Quality

Ground investigation

- 7.4.1 A land contamination Preliminary Risk Assessment, in accordance with Land Contamination Risk Management (LCRM) Guidance, and ground investigations for the purposes of geotechnical, contaminated land and hydrogeological baseline data collection have been undertaken within the Scheme Order Limits (App Doc Ref 4.1).
- 7.4.2 The ground investigations were designed to obtain sufficient data to allow generic quantitative risk assessment and to identify any specific remediation or mitigation requirements for the scheme as required under LCRM guidance.
- 7.4.3 Ground investigations have been carried out including an assessment of the potential for contamination. The results have been used to inform the design of the Proposed Development and EIA process in accordance with the relevant guidance and legislation for land quality including that in the LCRM, Environmental Protection Act 1990 and Contaminated Land (England) Regulations 2000 (Chapter 14; Land Quality refers, App Doc Ref 5.2.14).
- 7.4.4 Based on the assessment which has been carried out including a review of current and historic land uses the likelihood of contamination being present is low. The majority of the study area comprises rural agricultural land in arable production. The

ground investigations have confirmed this with only localised areas of made ground encountered. Made ground is mainly associated with the existing Cambridge WWTP.

- 7.4.5 Areas of potential contamination are summarised in Chapter 14: Land Quality of the ES (App Doc Ref 5.2.14). Following the assessment, no further site-specific mitigation has been identified.
- 7.4.6 The Decommissioning Plan, an outline of which has been prepared and is submitted as part of this DCO (Appendix 2.3, App Doc Ref 5.4.2.3) will set out in detail how works to take the existing Cambridge WWTP out of service and to rescind the Environment Agency permits will be carried out. The details of the ground investigation carried out at the existing Cambridge WWTP are set out in Appendix B. Decommissioning activities will be carried out in accordance with the measures set out in the CoCP and the detailed will also set out any additional measures which will be put in place to prevent pollution from occurring during decommissioning.

Unsuspected contamination

- 7.4.7 Whilst it is not anticipated, to ensure that site staff are not exposed to contaminated land and to protect the natural and historic environment during the site works, and in particular during the initial below-ground works, the Principal Contractor(s) will be required to carry out routine monitoring for contamination, e.g. the presence of odours and unusual staining, as well as oily, tarry or fibrous materials.
- 7.4.8 In the event that contamination which has not previously been identified is suspected, works in that immediate area will stop and it will be made safe and secure. The event will also be reported to the relevant Construction Manager and Environmental Manager.
- 7.4.9 An appropriate strategy will be developed to identify the most appropriate option for dealing with unsuspected contamination. This strategy will include the following:
- the Environmental Manager will be expected to liaise with the relevant local authority, the Environment Agency and other relevant statutory bodies to agree control or protection measures necessary to provide appropriate mitigation;
 - contamination issues will be recorded in the risk register, in accordance with the Construction (Design and Management) Regulations 2015, to protect affected parties;
 - the Environmental Manager's contaminated land specialist will inspect the site and, where deemed necessary, arrange for further sampling and laboratory testing of soils or liquids. Further risk assessments to receptors will be carried out as necessary and reported to the Applicant, the relevant local authority and the Environment Agency;
 - a remediation strategy will be agreed with the relevant local authority, in consultation with the Environment Agency and any other appropriate bodies as

required and works will not recommence in the affected area until and approach for dealing with the contamination had been agreed. This may involve sealing, excavating and disposing of soil or onsite remedial works; and

- a verification report will be submitted to the local authority and the Environment Agency once the agreed measures had been implemented as required.

Unexploded Ordnance

7.4.10 A review of the Zetica unexploded bomb (UXB) risk maps has been undertaken.

These indicated that the Proposed Development lies within a low-risk zone (defined as an area indicated as having less than 15 bombs per 1000 acres or less).

7.4.11 The Environmental Manager will, however, be expected to develop a UXO mitigation strategy in accordance with the Unexploded Ordnance (UXO) A guide for the construction industry (C681)). The strategy will utilise information from the Explosive Ordnance Threat Assessment Report (Bactec, 2013). All contractors and subcontractors will be expected to adhere to this.

Asbestos

7.4.12 Whilst no demolition works are proposed as part of the construction activities to be carried out under the scope of the Proposed Development, works will be required to take out the existing Cambridge WWTP out of service.

7.4.13 This will entail entering and altering areas may have asbestos in them. The detail Decommissioning Plan (Appendix 2.3, App Doc Ref 5.4.2.3) will set out the measures to be put in place whilst the relevant decommissioning activities are carried out in accordance with Control of Asbestos Regulations 2012 and associated approved codes of practice including Asbestos: The Survey Guide Health & Safety Executive guidance, HSG264 (2012) to ensure that this is done safely.

7.4.14 Asbestos can, also occur naturally within soils. Whilst this is not anticipated, based upon the results of the ground investigation carried out to date, procedures will be put in place should it be uncovered during construction in line with the Control of Asbestos Regulations 2012 and associated approved codes of practice referenced above.

Contamination from site activities

7.4.15 The following general measures will be put in place to minimise the risk of contamination or pollution impacts whilst construction works are undertaken.

Personal Protective Equipment (PPE)

7.4.16 All construction staff and visitors will only be permitted access to the working area with the correct personal protective equipment. This will include high visibility clothing, safety boots, hard hat, safety glasses, gloves and ear defenders/plugs for noisier activities.

Spillages

7.4.17 Measures will be put in place to prevent and control the spillage of oil, chemicals and other potentially harmful liquids in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 and Dangerous Substances and Explosive Atmospheres Regulations 2002. This will include a risk assessment to identify, eliminate or mitigate the risk and ensure suitable control measures are in place.

7.4.18 Control measures will be set out in the Emergency Preparedness Plan (refer to Section 5.6) and will include but not be limited to:

- the storage of oil will be avoided within 50 metres of a spring, well or borehole, and within 10 metres of a designated watercourse or where oil could run over hard ground into a watercourse;
- storage containers will be required to have sufficient strength and structural integrity to ensure that they are unlikely to burst or leak in ordinary use. Secondary containers and bunding will be used where required by the Regulations;
- the base and walls of the secondary containment will be required to be impermeable to water or oil. The base or walls will not be permitted to be penetrated by any valve, pipe or other opening which would be used for draining the system. The base and walls of the secondary containment will not be permitted to be penetrated by any valve, pipe or other opening used for draining the system. Any valve, filter, sight gauge, vent pipe or other equipment ancillary to the container (other than a fill pipe or draw pipe) will be required to be situated within the secondary containment. Where a fill pipe would not be within the secondary containment system, a drip tray/plant nappy will be used to catch the oil spill when the container is being filled;
- avoidance of storage of non-bio-degradable oil in areas at risk of flooding or where this is necessary oils will be stored above the flood levels;
- all containers will be marked with their contents and capacity;
- suitable spill kits and containment will be made accessible including drain seals/filter membranes and chemical spill kits;
- pipe and steel valves will be protected against frost damage;
- movement of fuels will be risk assessed and suitable controls put in place to transport diesel/petrol from the fuel storage tank/bowser to the plant/equipment. Measures (i.e., plant nappies) will be put in place when these are filled from bowzers to ensure that the risk of ground contamination is minimised. Cans will be transported to the plant/equipment on a plant nappy, upright in a vehicle to minimise manual handling; and
- only approved containers will be used to transport diesel/petrol. These will be UN approved with suitable markings and labelling. If this activity includes use of the public highway, then the requirements of The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 will be applied.

7.4.19 As set out above, any additional measures required during the decommissioning phase will be set in the detailed Decommissioning Plan.

Refueling of plant, machinery and vehicles

7.4.20 4 The following measures will also be put in place:

- all containers will be labelled with their contents and spill kits will be made available. Drip trays/plant nappies will also be made available. Refueling will be undertaken in accordance with refueling plans to be prepared by the Principal Contractor(s) and approved by the Environmental Manager as part of the CEMP(s);
- no refueling of plant or machinery will be allowed near watercourses, except for static plant required for specialist work. Any such refueling will be undertaken only where there is a suitably sized spill kit available;
- only trained staff will be permitted to carry out refueling and all personnel doing so will be provided with the necessary safety equipment including Personal Protective Equipment (PPE);
- prior to delivery, the fuel delivery company/driver will be given a briefing on any environmental safety risks and emergency procedures associated with the Proposed Development;
- delivery points will be clearly marked with the tank contents and maximum tank capacity and secured when not in use;
- when refueling, if the storage tank and trailing hoses infringe on walkways/access areas then an exclusion zone will be installed using barriers. Pedestrians will be notified of alternative routes or escorted through the area;
- non-return (check) valves and sealed connections will be used where appropriate along with protect filling points to prevent overfilling;
- all diesel and oil storage facilities will be locked to prevent unauthorised use. A spill kit and fire extinguisher will be kept in close proximity to the fuel storage location. A 'Refueling Do's and Don'ts' poster will be displayed at the refueling location;
- any spillages will be reported to the relevant Site Manager and cleaned up immediately; and
- machinery will be routinely checked to ensure it is in good working condition.

Drilling Fluid Breakout

7.4.21 The Proposed Development involves the installation of new sections of pipeline some of which will be installed via Horizontal Directional Drill (HDD).

7.4.22 This is a standard construction technique for the installation of pipelines within the water and waste industry and the risks associated with it are considered to be low.

There is, however, the potential for 'breakouts' of the drilling fluid to occur. A number of pre-cautionary measures will therefore be put in place.

- 7.4.23 An assessment of the risk of a breakout occurring will be carried out by the Specialist Drilling Contractor before any drilling begins, and all sensitive receptors identified; i.e., watercourses, drains, public highways, water supplies, boreholes. A plan/map will be produced along with details of mitigation measures to be put in place in the event of a breakout. This will include an emergency phone number list. This information will be made available to everyone working on the drilling operation.
- 7.4.24 Where practical, mitigation measures will be put in place before the drilling begins. Such measures include bunding watercourse banks with sandbags or bales and geotextile membrane to stop the drill fluid from reaching a watercourse and/or river in the event of a breakout on the banks. Where this is not practical due to the location of the drill pit, the mitigation will be stored in close proximity (e.g. bowsers, pumps).
- 7.4.25 Monitoring will be undertaken whilst each drill shot is carried out. The primary detection method for potential mud breakout will be the continuous monitoring of drilling mud pressures and volumes while the drilling rig is operating. This will take place along the line of the drill and in the immediate area. The monitors will be required to be in direct contact with the drilling crew via radios to establish progress and where the drilling head is located.
- 7.4.26 If a breakout does occur this will be reported to the drill crew and all drilling will stop immediately. If not already in place, the spill will be contained by constructing a bund and sump where necessary from earth or sandbags. Drilling fluid will be recovered from the bund using a vacuum tanker or pump. The drilling fluid will be discharged into the entry pit for recycling. The breakout will be allowed to seal before drilling is restarted unless it is clearly contained within the bunded area.
- 7.4.27 If a breakout occurs this will be reported to the Environmental Manager and escalated and reported in accordance with the Pollution Incident Control Plan which will include notification of the Applicant and the Environmental Agency.
- 7.4.28 Implementation of measures to protect groundwater during construction, including good environmental practices, will be based on legal responsibility and guidance on good environmental management guidance in CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (CIRIA, 2001).
- 7.4.29 For reference, pipejack micro tunnelling does not result in the same potential risk for drill fluid break out as HDD.

Soil Management

- 7.4.30 The land within the Scheme Order Limits is primarily agricultural. Where relevant land will be reinstated to the original land use after construction in line with landowner/tenant requirements. This will be done as soon as practicably possible

after construction works cease. During the reinstatement, measures to make sure that there are no long-term effects on grazing, crop yield and quality will be applied. Field boundaries severed by the works will also be reinstated.

- 7.4.31 An Outline Soil Management Plan has been prepared in accordance with the Code of Construction Practice for the Sustainable Use of Soil on Construction Sites (DEFRA 2009) and is submitted with the DCO application (Appendix 6.3, App Doc Ref 5.4.6.3). This sets out in detail the measures that are required to be in place to ensure that soil is appropriately managed during construction and suitable for its final use.
- 7.4.32 Prior to construction, specific measures to protect soils will be set out in a detailed Soil Management Plan (SMP), based upon the Outline Soil Management Plan (Appendix 6.3, App Doc Ref 5.4.6.3) and if required supplemented, by additional survey data.
- 7.4.33 Topsoil and subsoil will need to be stored during the construction period. The amount of time which storage is required for will be dependent upon the works being undertaken.
- 7.4.34 The following general mitigation measures will be put in place to protect soil quality, in accordance with the Outline Soil Management Plan (Appendix 6.3, App Doc Ref 5.4.6.3):
- a soil monitoring period of 1 to 5 years;
 - vegetation will be cleared before soil is stripped;
 - soil handling work will only be undertaken in suitable weather conditions will be aborted if the weather is not appropriate i.e., in periods of heavy rainfalls, snow or if the soil is frozen;
 - topsoil, lower sub soil and upper subsoil will be stored separately;
 - wet and dry soils will be stockpiled separately;
 - stockpiles will not exceed 3-4 metres in height;
 - compaction by machinery will be avoided;
 - topsoil and subsoil will be reinstated in the correct horizon order specific to that area as is standard practice for pipelaying in the water and wastewater industry. This will also be done in consultation with the landowner;
 - subsoil will be ripped where necessary prior to reinstatement;
 - topsoil and subsoil will be replaced as soon as is practically possible;
 - stockpiles will be sprayed as required to prevent growth of weeds;
 - topsoil and soil stock piles will be sealed by means of back blading the stock pile to help reduce dust and to not promote areas for wildlife habitat; and
 - excess arisings will be removed and re-used in construction of the bund or in other local developments where feasible rather than removed off site.

7.4.35 In areas where new landscaping is proposed the topsoil will be mixed as is appropriate to ensure it is suitable for the species to be planted in accordance with the British Standard BS3882:2015 Specification for Topsoil.

7.5 Water resources and flood risk

7.5.1 To minimise the potential for pollution of surface and groundwater resources the following mitigation measures and best practice will be applied prior to and during construction. Measures will also be put in place to prevent increased flood risk both on and off site.

7.5.2 Geotechnical ground investigation surveys have been undertaken to inform the design of the key crossing points; i.e., the River Cam, railway and A14. During surveys ground water levels were recorded and piezometers were installed in boreholes at certain locations to allow groundwater levels to be monitored.

7.5.3 As set out under Section 4.4 a Construction Water Quality Management Plan will be prepared. This will set out the following in order to protect surface and ground water quality during construction:

- identify areas at risk of water pollution from surface water run-off;
- set out mitigation measures and treatment methodologies (silt management) and where they will be applied;
- establish the requirement for and position of water stops, if required, to prevent the pipe trenches becoming an adventitious pathway for water;
- identify requirements for de-watering to be agreed and permitted by the Environment Agency;
- identify any land drains that may be disrupted during the construction phase; and
- measures to avoid and minimise potential impacts upon the Proposed Development from flooding and to ensure flood risk is not increased elsewhere.

7.5.4 As set out above, the detailed Decommissioning Plan will set out any additional measures which will be put in place to prevent pollution to the water environment.

7.5.5 A detailed Commissioning Plan will also be prepared. An outline version is submitted as part of the DCO (Appendix 2.4, App Doc Ref 5.4.2.4). This sets out how the new infrastructure will be commissioned prior to be brought into operational use. Commissioning waters will be recycled and reused where practicable before being discharged to the new outfall. A Temporary Discharge Consent Licence will be obtained to cover the commissioning phase in order to ensure water quality is protected. The detailed Commissioning Plan will set out any additional measures which will be put in place to protect water quality and to accord with the Temporary Discharge Consent Licence requirements.

7.5.6 The Principal Contractor(s) will also be required to have in place appropriate approvals and consents from the relevant regulatory body or statutory undertaker for works which could affect any surface water or ground water resources before construction commences in that area or before the start of the activity to which the approval relates.

Protection of surface water, ground water and aquifers

7.5.7 A number of the measures identified in Section 7.4 will help protect water quality. In addition, the following general mitigation measures will be put into place:

- where feasible, the storage of materials and plant will be avoided within 50 metres of a spring, well or borehole, within 10 metres of a designated watercourse including the River Cam or where there is the potential for run off over hard ground into a watercourse;
- where practical contaminant storage will be located within flood zone 1 or if this is not possible above the flood level;
- as a minimum, no works will be undertaken within 8 m of any watercourse or waterbody (other than for watercourse crossings, drainage/ecological mitigation works). Greater buffer distances may be required for the protection of protected species;
- all boreholes constructed as permanent installations will be sealed around casing tubes in soil and sub-soil deposits close to the surface. The seal will prevent contamination from any surface water which might collect around the borehole and, potentially, seep down around the borehole to the water table;
- watercourses and land drains will be identified before construction works in that area commence and regularly checked for signs of silt. This will include visual assessment; use of turbidity monitors as required and sampling if necessary. The frequency of monitoring checks will be dependent upon the nature of the water course or land drain. Sensitive locations will be monitored daily. If evidence of contamination is found, measures will be put in place to stop the pollution with a physical block i.e., a bund or drain seal and the activity causing the pollution will be ceased. The incident will be reported to the relevant Site Manager and the Environmental Manager for corrective action and reported to the Applicant who will notify any other relevant bodies in accordance with Pollution Incident Control Plan;
- excavation plant will be checked prior to use at open cut watercourse crossings to ensure it is in a sound condition and free of potentially contaminating materials;
- where vehicle wash facilities are provided no chemicals or grit will be used and silt traps/oil interceptors will be installed in general accordance with the Environment Agency's Pollution Prevention Guidance PPG 5, PPG6 and PPG13 (Whilst these PPGs have been withdrawn by the Environment Agency, they are still considered good practice);

- where possible, concrete lorries will return to their supplier or batching plant for wash out. Concrete wash out skips if required on site will be lined and located at least than 50 metres from a borehole or 10 metres from a watercourse or surface water drain. They will be placed on hardstanding or on the ground with plastic and membrane containment and clearly marked to avoid cross contamination. Any wash out areas within the working areas will be inspected weekly by the Site Manager to ensure there are no leaks or overflows. The pH of the wash out water will also be monitored;
- only suitable concrete mixes will be used in watercourses;
- any cement bags will be sealed and stored appropriately to prevent leaks or dust;
- surface water drainage around any batching plants will be controlled. This will include an appropriately designed and designated wash out area. The water will be disposed of appropriately and any necessary Environmental Permits obtained before the batching commences; and
- where required adequate dewatering will be undertaken during excavation activities or construction of subsurface features and foundations (see the section on Dewatering below). Construction techniques may also be reviewed to determine whether an alternative approach is more appropriate. Following completion of in channel works, the channel will be cleared of debris/materials, the natural bed reinstated.

Management of silt during construction

7.5.8 Silty water can arise from excavations, exposed ground, stockpiles, plant and wheel washing, and site roads and has the potential to result in pollution incidences.

7.5.9 The following measures will be put in place to seek to prevent this from occurring:

- silty water will be diverted away from watercourses and drains through the use of physical measures such as sandbags and trenches. If necessary, cut off trenches will be put in uphill of excavations / stripped soil area to divert rainwater;
- where practical, vegetation corridors will be left adjacent to watercourses. Stabilisation measures will be put in place along the River Cam adjacent to the proposed new outfall and any other significant watercourses where these need to be stripped of vegetation to prevent erosion for example, by putting down biodegradable sheets and seeding with clover or fast-growing grasses;
- bog mats, tracking or other appropriate surfacing will be laid where appropriate, to prevent the churn of soil from vehicle and plant movements which could lead to silty run-off in poor weather conditions;
- stockpiles (waste spoil and imported materials) will be appropriately stored and so far as is possible located on level ground;

- all sensitive receptors such as open drains, land drains and watercourses will be identified before works commence. Where appropriate, measures identified in sections 7.4 and 7.5 will be put in place to protect them during construction works;
- no more land will be stripped than is required;
- sites access routes and haul routes within the workings area will be kept free from mud and dust to minimise silty runoff;
- all washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses and groundwater. Oil interceptors will be installed if required;
- any de-watering required from the cofferdam would be pumped to a temporary settlement lagoon to remove sediment before discharging back into the river;
- designated concrete wash out area will be set up where required; and
- materials free from contamination will be used to avoid potential contamination of local surface water flow paths (see Section 7.8).

Dewatering (Permit to Pump)

- 7.5.10 Pumping operations will be required to remove water from excavations and to control water on site. Pumping activities will be carefully controlled through a “Permit to Pump” system which will ensure that necessary consents are in place from relevant regulatory authority (Environment Agency, Internal Drainage Boards or Lead Local Flood Authority). Dewatering will thereafter be undertaken fully in accordance with all specific requirements of the permit.
- 7.5.11 The following additional provisions in accordance with the Environmental Permitting Regulations (2016 as amended in 2018 and any subsequent amendments which may come into practice) will also be put in place in relation to groundwater dewatering activities:
- records of water pumped (volume and quality to sewer and/or watercourse) will be kept at all dewatering sites as required under the terms of a permit;
 - for excavations any groundwater or surface water intercepted will be pumped out and passed through an appropriate form of treatment (such as a settlement equipment) before being discharged to an approved location;
 - water quality at all dewatering sites will be monitored, applying a risk-based approach appropriate to the location. Visual inspection of the discharged water at an agreed frequency will be carried out to ensure that excessive suspended solids are not present in the discharge. Turbidity testing will also be carried out. Pumping will cease immediately (without risk to site personnel and equipment) if polluted discharge is noted. The frequency will be specified within the Water Quality Management Plan; and

- discharge rates and location of discharge points will be agreed with the Environment Agency or another other relevant body as required.

7.5.12 Smaller dewatering operations may not require a permit providing the activity is in compliance with the conditions in the Environment Agency regulatory position statement (RPS) 'Temporary dewatering from excavations to surface water'. Under the RPS the discharge must:

- be clean water, for example clear rainwater or infiltrated groundwater which has collected in the bottom of temporary excavations;
- not result in water containing fine or coarse suspended solids (silty water) entering surface water;
- not last more than 3 consecutive months (the activity may stop and restart but the clock does not restart) - if the activity is likely to go over 3 consecutive months then a permit application is required;
- be made to surface water, such as a river, or stream; and
- have a method statement that minimises the risk of pollution.

7.5.13 Under the RPS Before starting work the following must be in place:

- a plan indicating how to minimise the level of contaminants such as silt entering the excavation;
- details on how to dispose of water that enters the excavation;
- controls on the use of machinery in excavations while dewatering is taking place;
- measures to minimise water entering the excavation, for example from rainfall, runoff, groundwater ingress or high water table; and
- use of sustainable urban drainage construction methods if possible.

Watercourses

7.5.14 Works affecting watercourses and flood defences will be carried out in accordance with the requirements of the relevant regulatory authority (Lead Local Flood Authority/Environment Agency/Internal Drainage Board). These works will include:

- pipeline installation under a watercourse;
- tunnel installation under a watercourse;
- construction access over a watercourse; and
- discharge of water to a watercourse.

7.5.15 Works will be carried out in accordance with the relevant CEMP, Pollution Incident Control Plan, Construction Water Quality Management Plan, and risk assessments prepared by the Principal Contractor(s).

7.5.16 All necessary consents and licences will be applied for and obtained from the relevant regulatory authority prior to the relevant works commencing on site.

Private water supplies/boreholes

7.5.17 Works will be carried out within the vicinity of a number of private boreholes. The EIA process has assessed whether the Proposed Development is likely to have any impact upon these during construction. Further mitigation measures are identified in Part B of the CoCP.

Flood risk

7.5.18 Some construction works will take place within flood zones 2 and 3. A Flood Risk Assessment (FRA) has been undertaken and is submitted with the DCO application (Appendix 20.1, App Doc Ref 5.4.20.1).

7.5.19 As set out under Section 4.4 above, a Construction Water Quality Management Plan, Pollution Control Plan and Emergency Preparedness Plan will be prepared. These plans will amongst other matters set out measures to avoid and minimise potential impacts to the Proposed Development during construction from flooding along with measures to prevent any significant effects on the existing flood risk in the surrounding area.

7.5.20 Construction activities will be undertaken so as to avoid any significant increase of flood risk. Appropriate measures will be implemented by the Principal Contractor(s) to prevent, so far as is reasonably practicable, damage to equipment or the works during potential flooding events. These measures include:

- working areas will be minimised as far as possible for the trenchless crossings of the River Cam and larger drainage ditches;
- where possible works will be carried out in drier weather;
- construction compounds and storage areas will be located in flood zone 1 where feasible;
- suitable access and safe refuges for use in the event of a flood will be identified;
- loose items within compounds, laydown or storage areas within flood zone 2 and 3 will, if required, be secured to prevent them becoming a debris hazard in a flood event or where practical removed from the flood zone if high rainfall within the catchment is predicted;
- appropriate maintenance access to watercourses and associated flood defences will be made available, if required; and
- if soil is stored temporarily within the flood zone, then gaps will be made in the bunds to allow flood water to run through.

7.5.21 The Principal Contractor(s) will consult with the Environment Agency, IDB, Lead Local Flood Authority and any other relevant risk management authorities in respect of the flood risks in the preparation of the Emergency Preparedness Plan and Pollution

Incident Control Plan. This will include use of the Environment Agency's Floodline flood warning service for works within areas at risk of flooding.

7.5.22 All construction activities in, over, under or within 8m of the River Cam or within 8m of the landward side of existing defences will be subject to a flood risk activity permit to be agreed with the Environment Agency and those within 9m of an IBD drain subject to IBD consent.

Water conservation/reuse

7.5.23 The Applicant will require the Principal Contractor(s) to put measures in place to manage and where possible minimise water usage during construction. This will include the following:

- measurements of potable water consumption;
- targets and procedures for reporting water consumption;
- measures for improving the water efficiency of construction site facilities; and
- consideration of alternatives to the use of potable water where practical and feasible.

7.6 Traffic and Transport

7.6.1 There is the potential for construction works to adversely impact highway safety and users of the surrounding road network. The following measures will be put in place to minimise the potential impacts upon road users, both motorised and non-motorised.

Construction Traffic Management Plan (CTMP)

7.6.2 A Construction Traffic Management Plan (CTMP) has been prepared and is submitted as part of the DCO (Appendix 19.7, App Doc Ref 5.4.19.7). The requirements of the draft DCO (App Doc Ref 2.1) set out that construction works shall be carried out in accordance with the measures set out in the CTMP.

7.6.3 The CTMP includes the requirements for the management of construction traffic and has been prepared in consultation with the highway authorities.

7.6.4 The CTMP includes the following:

- location of the construction access routes to the works areas and compounds;
- traffic route plans for HGVs, low loaders, articulated trucks and other site traffic;
- use of ANPR cameras in Horningsea and Fen Ditton;
- consideration of other projects in or likely to be in construction at the same time;

- details of traffic management powers in the DCO and any additional temporary Traffic Regulations Orders required during construction;
- strategy for traffic management and measures for informing construction traffic of the approved traffic route plans, local access routes, road restrictions and where access is prohibited;
- measures for the monitoring of the CTMP to ensure compliance from drivers and actions to be taken in the event of non-compliance; and
- mechanism for responding to traffic management issues arising from the works including concerns raised by the public.

7.6.5 Limited parking will be provided at the temporary construction compounds. At site accesses suitable supervision will be provided, as is required, to ensure that traffic is controlled at access points, e.g., traffic marshal and wheel wash if required to minimise mud deposits onto the highway (see Section 7.6).

7.6.6 The CTMP will be reviewed and updated regularly, in line with the construction programme.

Construction Workers Travel Plan (CWTP)

7.6.7 In addition to the CTMP, a Construction Workers Travel Plan (CWTP) (Appendix 19.9, App Doc Ref 5.4.19.9) has been prepared and will be secured as a requirement of the DCO (App Doc Ref 2.1). This sets out the measures which will be put in place to encourage site staff to use more sustainable travel modes, to reduce single occupancy vehicle trips and will investigate the potential for flexible working patterns to facilitate travel outside of the peak periods. The contractors appointed by the Applicant will be expected to sign up to the Travel Plan and promote the measures set out therein.

Traffic management measures

7.6.8 A number of temporary traffic management measures will be required during the construction period to reduce vehicle speeds in the vicinity of the construction access points. These will be secured under Schedule 3 (Streets) of the draft DCO (App Doc Ref 2.1). Where the power is not included within the DCO a Traffic Regulation Order will be applied for under the Road Traffic Regulation Act 1984.

7.6.9 The traffic management measures which will be put in place will be communicated in advance to the local community in accordance with the Community Liaison Plan (refer to Section 3).

7.6.10 There will be a requirement to agree temporary access through coordination with landowners, tenants and/or land agents. One such example will be the creation of a temporary access from the B1047 Horningsea Road to land required for the construction of the transfer tunnel and avoidance of existing farm access to Poplar Hall. Affected farms are R037 and Y039.

7.6.11 Temporary signage will also need to be displayed whilst construction works are undertaken and will be secured under a requirement of the draft DCO. (App Doc Ref 2.1). Where the power is not included within the DCO the Principal Contract(s) will be required to apply to the relevant Highway Authority for approval in accordance with the New Roads and Street Works Act (NRSWA) (1991) before any such signage is displayed.

Highway restoration

7.6.12 Pre and post construction condition surveys (including a photographic record) will be agreed with the Local Highway Authority as required. Surveys will be used to establish the condition of the highway prior to the works commencing and after the works are completed.

7.6.13 Where temporary alterations are required, the highway will be restored to the same condition as before the works took place or to a standard which is acceptable to the Local Highway Authority.

Public Rights of Way

7.6.14 The proposed construction works will impact a number of Public Rights of Way (PRoW). Measures will be put in place to manage the impact upon users of the PRoW during the construction period.

7.6.15 Where practical and feasible continued access to and use of the PRoW will be facilitated in order to minimise the number of diversions required. Safety gates will be put in place and users allowed to safely cross the construction working area.

7.6.16 Where this is not feasible or would create a safety issue, the PRoW will either be temporarily diverted or if the route cannot be diverted it will be temporarily suspended. Details of proposed diversions are shown on the Rights of Way Plans (App Doc Ref 4.6), referenced Part B of the CoCP and in DCO application (App Doc Ref 2.1).

7.6.17 Where these are not secured through the DCO (Schedule 6 of the draft DCO refers, App Doc Ref 2.1) the Principal Contractor(s) will be expected to apply to the Local Highway Authority under the New Roads and Streetworks Act (NRSWA) for approval for all temporary road signs on the public highway before it is displayed.

7.6.18 The Applicant will require the Principal Contractor(s) to adhere to the following guidelines:

- suitable diversion routes will be identified and approved prior to the commencement of the work. The length of these and the time they are required for will be minimised and they will, as far as is reasonably practicable, be maintained to a comparable standard of those that they replace;
- suitable signage and barriers for diversion routes will be provided;

- local residents and businesses will be provided with details of the diversion route and dates/ durations. As far as practicable, this information will be provided a minimum of two weeks in advance of the diversion being brought into use although, exceptions will apply in the case of emergency works; and
- all diversions will be fully accessible and comply with the requirements of the Disability Discrimination Act 1995 as far as practicable and in the context of the route to be temporarily diverted.

7.6.19 All PRoWs will be restored to the same condition as before the works took place or to a standard which is acceptable to the Local Highway Authority.

Road cleanliness

7.6.20 The construction works have the potential to result in mud or other debris being deposited onto the public highway, resulting in highway safety issues. It is also an offence under Section 148 of the Highways Act 1980 to deposit mud or other debris which may interfere with other road users.

7.6.21 Every effort will be made to prevent mud from being tracked onto the public highway. The following hierarchy of measures has been identified. Drive through wheel washes will be used in the event that all of the measures identified within the hierarchy are not sufficient to keep road surfaces clean.

7.6.22 The Principal Contractor(s) will be required to adhere to this hierarchy and to introduce additional measures if instructed by the Applicant:

- all vehicles will be correctly loaded and covered where necessary to avoid spillage on the journey;
- hardstanding/track mats will be laid at the access and egress points to the working areas if required due to the weather or due to the nature of the use of the access/egress i.e., it will be heavily trafficked;
- an appropriate road sweeper will be employed (for smaller accesses this may be a person with cleaning equipment);
- cattle grid or similar matting will be laid;
- a high-pressure jet wash or similar will be used; and
- a drive through wheel wash will be installed.

7.7 Noise and Vibration

7.7.1 There is the potential for construction activities to produce noise and vibration impacts both upon the local community and the natural and historic environments.

7.7.2 Noise associated with construction primarily derives from construction plant and machinery on site and traffic movements on public roads. Some construction

activities such as tunnelling, HDD, micro tunnelling, require 24-hour operation (as set under Section 5.10 and CoCP Part B).

- 7.7.3 Noise and vibration impacts have been assessed as part of the EIA process (Chapter 17: Noise and Vibration, App Doc Ref 5.2.17). The assessment takes into account the general mitigation measures set out in this document and identifies the requirements for site specific mitigation measures which have been incorporated into CoCP Part B.

General mitigation measures

- 7.7.4 Construction works will be undertaken in accordance with best practicable means (BPM) as defined by the Control of Pollution Act 1974 (CoPA) and the Environmental Protection Act 1990 (EPA). As part of BPM, the following will be applied:

- where possible, noise and vibration will be controlled/reduced at source; and
- working methods will be changed or amended where it is feasible to include equipment and operational activities which produce less noise.

- 7.7.5 The following general measures which will help to reduce noise levels at source (where they are produced) will be applied:

- construction activities will take place in accordance with the proposed working hours set out under section 5.10;
- all vehicle plant and equipment associated with the construction works will be properly maintained in good efficient working order;
- equipment will be switched off when not in use and operators expected to avoid unnecessary revving of engines. Plant and machinery in intermittent use will be shut down or operated in a minimum idling condition whenever not required;
- where plant is designed to operate with engine covers to reduce noise these will be used and remain closed whilst the plant is in operation;
- audible warning systems such as reversing alarms will be set to as low as setting as is compatible with safety requirements;
- site access routes to the working areas will be maintained;
- where feasible one-way traffic systems will be put in place to minimise the annoyance caused by vehicle reversing alarms;
- rubber linings will be used where feasible, for example on chutes to reduce impact noise;
- the drop height of materials, such as aggregate from a wagon will be minimised;

- appropriate plant and equipment will be selected and where possible plant with noise control measures e.g., silencers, mufflers and acoustic shrouds will be used;
- the location of plant and equipment on site will be considered and located as far as is practically possible from sensitive receptors;
- noisy plant will be screened as appropriate to reduce noise impacts;
- plant will be regularly and effectively maintained by trained persons;
- plant will be CE marked with a sound power level where feasible e.g., generators, pumps, auger machines, compressors etc.; and
- construction staff will be instructed to reduce noise and vibration as part of their induction training and as required by specific work activities.

Reducing vibration

7.7.6 Measures to minimise vibration impacts during construction will include the application of Best Practicable Means (BPM) in accordance with BS 5228-2.

7.7.7 The following general measures will be used to reduce potential adverse vibration impacts:

- the distance between the vibration source and receiver will be maximised as far as is practicable;
- construction methods will be kept under review to determine if the impact can be reduced through an alternative method of construction;
- plant and machinery with a low frequency vibrational output will be switched to that with a higher frequency output or low vibration sources of equipment used if practical;
- plant will be located as far as possible on non-saturated ground;
- anti-vibration mountings will be used where practical; and
- haul roads will be kept as smooth as possible and maintained to reduce vibration impacts from heavy plant.

7.7.8 The Applicant will require the Principal Contractor(s) to undertake and report monitoring as is necessary to assure and demonstrate compliance with all noise and vibration commitments. This information will be made available to the Local Planning Authority on request.

7.7.9 In accordance with the Community Liaison Plan (refer to Section 3) the local community will be notified by the Principal Contractor(s) prior to the start on site of works which are likely to result in noise impacts or produce vibrations. This will include details of how long the activity is likely to last.

Noise and Vibration Management Plan

7.7.10 As set out under Section 4.4 the Principal Contractor(s) will be required to develop a Noise and Vibration Management Plan (NVMP) before development commences on site. More than one plan may be prepared to reflect the different construction activities to be undertaken and to aid construction phasing. The NVMP(s) will incorporate the measures proposed and procedures for the management of noise and vibration arising from the Proposed Development and will be appended to or incorporated into the CEMP.

7.7.11 The NVMP will seek to assist in ensuring that the Proposed Development complies with the following legislation and guidance:

- Environmental Protection Act 1990 (as amended);
- Control of Pollution Act 1974 (CoPA 1974); and
- British Standard (BS) 5228 'Code of practice for noise and vibration control on construction and open sites', Part 1: Noise (+A1:2014), and Part 2: Vibration (+A1:2014).

7.7.12 The NVMP will cover the following matters:

- working hours;
- procedures for gaining Section 61 consents under the Control of Pollution Act 1974 (CoPA);
- general noise and vibration control measures in accordance with Best Practical Means;
- Community Liaison in accordance with the Community Liaison Plan including the handing of complaints. This will include:
 - notification prior to the start on site of works which are likely to result in noise impacts or produce vibrations along with details of how long the activity is likely to last;
 - site/activity specific noise control measures; and
 - monitoring.

7.7.13 Part B of the CoCP Part B identifies site-specific requirements such as restrictions on noise-generating activities (including mitigation measures) or working hours, activities and locations requiring further detailed consideration.

7.7.14 The Applicant will also give consideration to the use of S61 notices under the Control of Pollution Act (CoPA). The right to use such notices is included within the DCO (App Doc Ref 2.1).

7.7.15 If used these will set out BPM to minimise construction impacts and further detail the noise predictions of proposed construction activities, along with the precise nature of the mitigation that will be implemented. Section 61 Consents could also be

used to vary the working hours specified in the CoCP Part B in order to accommodate the Principal Contractor's detailed working methods.

7.7.16 The Principal Contractor(s) will agree with the relevant local authorities which activities if any will require Section 61 consent as part of the Noise and Vibration Management Plan.

7.7.17 The Principal Contractor will be responsible for any appeals in relation to Sections 60 and 61 of the CoPA.

7.8 Air Quality

7.8.1 Gaseous and particulate pollutant emissions to the atmosphere from vehicles and plant used on the site and dust from construction activities have the potential to impact on upon air quality. Measures are therefore proposed to ensure that the impacts upon air quality receptors can be minimised during the construction period.

7.8.2 The Principal Contractor(s) will be expected to comply with the provisions of the Health and Safety at Work Act 1974, the Environmental Protection Act 1990, the Environment Act 1995, the Clean Air Act 1993 and the regulations made thereunder, including the Control of Substances Hazardous to Health Regulations (SI 2002/2677).

7.8.3 This document sets out a framework for the control of air quality during construction, identifying a number of 'standard' mitigation measures which will be implemented whilst construction work takes place.

7.8.4 Any site-specific impacts identified through the EIA process which require additional mitigation will be set out in Part B of the CoCP.

7.8.5 Construction dust effects will be mitigated proportionally, using the recommendations within the IAQM 'Guidance on the assessment of dust from demolition and construction'.

7.8.6 The mitigation measure recommended will depend on the level of dust risk identified at local receptors.

General measures

7.8.7 The following general measures will be put in place:

- the contact details of person(s) accountable for air quality and dust issues on the site will be displayed in prominent locations within the working area; and
- as set out under Section 3, a Community Liaison Plan will be developed. This will outline amongst other matters, how the local community will be kept informed as construction progresses and how any complaints or issues will be dealt with.

Site management and monitoring

7.8.8 The following site measures will be put in place:

- regular inspections will be undertaken by the Principal Contractor(s) to monitor compliance with the Air Quality Management Plan. The inspection results will be recorded, and an inspection log made available to the Local Authority when requested. It will include regular dust soiling checks of surfaces such as street furniture and cars and within 100 m of the construction working areas. Cleaning will be provided if necessary. The frequency of these inspections will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- all dust and air quality complaints will be recorded, the causes identified, and appropriate measures taken to reduce emissions in a timely manner. The measures taken will also be recorded and the information made available to the Local Authority on request;
- a complaints log will be made available to the Local Authority when requested;
- all machinery will be mechanically sound;
- machinery and dust causing activities will be located as far away from receptors as is possible;
- consideration will be given to the use of solid screens or barriers when activities with a high potential for dust generation are carried out;
- materials which have the potential to produce dust will be removed from site as soon as possible, unless being re-used on site. If they are being re-used on-site, they will be covered or stored in locations where there is less potential for impact;
- stockpiles will be positioned as far as practicable from residential areas and at least 10 metres from watercourses where practical;
- stock piles will be sealed by means of back blading the stock pile to help reduce dust and to not promote areas for wildlife habitat;
- vehicle engines will be switched off when stationary;
- the use of diesel or petrol- powered generators will be avoided where possible and mains electricity, solar or battery powered equipment used where practicable;
- where required, access routes to the working area will be hard paved or track matting used. Heavily used part of the working areas for the proposed Cambridge WWTP or the tunnel shafts will also be hard paved;
- access routes to the working area will be kept clean in line with the mitigation hierarchy set out under Section 7.6 above;
- a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced access routes or work within the working areas will be imposed (if there are long stretches speeds may be increased); and

- lorries carrying dry material off site will be sheeted.

Construction activities

7.8.9 The following general measures will be put in place:

- cutting, grinding or sawing equipment will be fitted with or used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems;
- adequate water supplies will be made available effective dust/particulate matter suppression/mitigation;
- surfaces will be swept and damped down at regular intervals as required. Site fencing, barriers and scaffolding will be kept clean using wet methods;
- enclosed chutes and conveyors and covered skips will be used;
- drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised, and fine water sprays used on such equipment wherever appropriate;
- equipment will be made readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- avoidance of scabbling (roughening of concrete surfaces) where practicable, concrete retarder will be used as an alternative such that the concrete surface can be roughened by a jet washer;
- sand and other aggregates will be stored in designated locations and not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. These will be banded if it is appropriate to do so based upon best practice guidance and the regulations in place at the time construction commences;
- bulk cement and bentonite will be stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- concrete bags will be sealed and stored to prevent leakage and dust; and
- no bonfires and/or burning of waste materials will be permitted on site.

Vehicle and plant emissions

7.8.10 The Principal Contractor(s) will be expected to ensure that the adverse effects of vehicle and plant emissions are controlled and minimised as far as is practical. The following general measures will be put in place to minimise emissions and avoid nuisance:

- the engines of all vehicles and plant onsite will be turned off when not in use;
- low emission vehicles and plant will be used as far as possible; and
- movement of construction traffic around the working area will be minimised as far as possible.

Air Quality Management Plan

7.8.11 As set out in Section 4.4 the Principal Contractor(s) will be required to produce an Air Quality Management Plan(s) before works commence on site. More than one plan may be produced to cover different aspects of the Proposed Development. The Plan will be appended to or incorporated into the CEMP(s).

7.8.12 The Plan will include as a minimum the following:

- the contact details of person(s) accountable for air quality and dust issues on the site will be displayed in prominent locations within the working area;
- identification of the sources of dust/emissions;
- control measures;
- monitoring and recording including a complaints procedure; and
- in accordance with the Community Liaison Plan.

Construction Odours

7.8.13 It is not anticipated that construction activities will give rise to any significant odour impacts although the following activities could possibly give rise to some odour impacts:

- activities relating to connections to existing sewer network;
- over pumping of the flows from the existing Cambridge WWTP during construction of the tunnel;
- testing and commissioning of the proposed WWTP; and

7.8.14 Part B of the CoCP sets out how potential odour impacts arising from activities associated with connecting into and diverting existing sewers and decommissioning will be managed.

7.8.15 As set out above, an outline Commissioning and Decommissioning Plans have been prepared and are submitted with the DCO (Appendix 2.3 & 2.4, App Doc Refs 5.4.2.3 and 5.4.2.4). The detailed plans will be agreed before works commence on site.

7.9 Waste management and resource use

7.9.1 Measures will be put in place to manage waste during the construction process. These will be used to reduce the amount of waste which the Project produces, to ensure that materials being imported or removed comply with all necessary legislative requirements, to maximise resource efficiency throughout the construction process in line with the principles of the waste hierarchy and to protect people and the environment.

Waste Management

- 7.9.2 Whilst no longer a legal requirement, in accordance with Best Practice and as identified in Section 4.4 a Site Waste Management Plan(s) (SWMP) will be prepared. This will include setting the framework for the management of wastes generated during the construction process in line with the waste hierarchy. It will amongst other matters document the decisions taken during the planning and design stages to minimise waste and set objectives and targets for the main waste types, to meet legislative and policy requirements in line with the Waste Hierarchy. More than one plan may be prepared to cover different aspects of the proposed scheme.
- 7.9.3 The SWMP will as a minimum identify the following:
- Responsibilities within the construction team for waste management;
 - The types of waste and the quantities likely to be generated;
 - Measures to be adopted during construction to minimise waste generated;
 - Opportunities for recycling and/or reuse;
 - Proposed treatment and disposal sites together with details of their Environmental Permit; and
 - Provisions for staff training and use of the SWMP(s).
- 7.9.4 It will also record each movement of waste (including the reuse or recycling of materials on site) in accordance with the Waste (England and Wales) Regulations 2011 (and its amendments) and the arrangements for auditing the actions of other parties in the waste handling chain.
- 7.9.5 Waste will only be transported by appropriately licenced carriers.
- 7.9.6 The SWMP(s) will be updated as the detailed design evolves and the main contracts are let to reflect their waste carrier license numbers, waste volumes etc.
- 7.9.7 The SWMP(s) will clearly identify wastes that are likely to be produced during the construction phase, the quantities likely to be generated and proposed treatment or disposal route.
- 7.9.8 The overarching aim of the SWMP(s) will be to minimise the volume of waste generated and maximise resource efficiency by applying the waste hierarchy (reduce – reuse – recycle – energy recovery - responsible disposal). The main wastes likely to be generated from construction are:

- off cuts – wood;
- concrete;
- aggregate;
- small quantities of contaminated waste;
- small quantities of inert waste (e.g. soils and sub soil); and
- ‘green waste’ (e.g. vegetation from land clearance).

7.9.9 The main wastes which are likely to be generated from the construction of the Proposed Development include:

- clearance of the working width including vegetation removal;
- where HDD/mirco tunnelling takes place drilling and tunnelling wastes would comprise solids and associated drilling muds. Arisings will be stored in a bunded area on an impermeable geotextile where necessary. Materials will be reused on site where possible. If this is not feasible, they will be removed from site;
- topsoil and excavated material (sand and gravel and chalk) would be reinstated, any excess would be used on site for landscape earth mounding such as at the pumping station; suitable material would be spread within the site for example to form a crown over the pipeline to allow for settlement; the intension would be not to remove soils from site and to reuse materials where possible;
- emptying of portable toilets. This will be done by a specialist contractor and the waste disposed of in accordance with the SWMP;
- toilet facilities at the site offices and site compound areas may be connected to the sewer system or a septic tank will be installed and emptied regularly by a suitably licensed and registered waste contractor; and
- generation and management of waste from the draining down of the existing Cambridge WWTP tanks.

7.9.10 Steel and concrete waste recycling rates should be in line with overarching Net Zero targets of the Applicant.

7.9.11 Any green waste not reused for landscaping or habitat mitigation will be disposed of at a permitted composting facility as a preference to landfill.

Importing of materials

7.9.12 Any materials imported during construction works will be checked on arrival to ensure that the relevant certificates are in place. This will include a requirement for the supplier to prove they are licenced to process waste into aggregate (and hold the relevant environmental permit or exemption) and that the material is fit for purpose and meets required specification. Visually inspections will also be carried out.

7.9.13 Prior to accepting the material, the Site Manager will be informed by the supplier/ subcontractor of the following information:

- site name and address from where the material has been obtained;
- confirmation that the method of production for recycled aggregates is in accordance with the WRAP Quality Protocol;
- confirmation that the production of topsoil / subsoil has been undertaken at an appropriately licenced or exempt facility;
- any change to the source in advanced of its delivery to site; and
- if recycled materials are being supplied for more than 6 months, or where deliveries are over 6 months apart, further testing records will be requested.

7.9.14 A rejection procedure will be put in place in case of non-conformance. The supplier / sub-contractor will also be required to leave a copy of the delivery ticket for each load.

Waste storage and segregation

7.9.15 The following measures will be put in place to control how waste is stored on site to reduce the potential for contamination:

- waste will be stored in designated areas isolated from surface drains, watercourses and settlement facilities. Liquid wastes would be stored on impermeable surfaces which are bunded;
- surplus material from site grading or excavation work which shows visual or other evidence of contamination will be stored in covered skips or on a stockpile in a suitable location or covered and placed on hardstand or impermeable sheeting prior to its removal;
- suitable containers for their contents will be used and inspected to make sure they are not corroded, and the contents will not leach out;
- where possible, skips will be covered to prevent dust, wind-blown litter and rainwater accumulation. These will be inspected regularly and replace when full. All skips will be clearly labelled to allow for the segregation of waste with reduced levels of contamination;
- different types of waste will be segregated and provision will be made for the recycling of wastes such as scrap metal, paper, cardboard, printer toner cartridges, batteries, waste oil;
- provision will be made for the correct storage and disposal of Hazardous Waste as defined by and in accordance with the Hazardous Waste (England and Wales) Regulations 2005 and amendments. The contractors will register the site as a producer of hazardous waste prior to any transfer of hazardous waste from site and a Hazardous Waste Consignment Note will accompany every transfer. In accordance with the Waste Acceptance Criteria (WAC) hazardous waste may need to be treated, and then tested, before disposal; and
- where necessary an Environmental Permit will be obtained.

Waste minimisation

7.9.16 The following measures will be put in place to minimise the amount of waste being generated:

- the Waste Hierarchy will be adhered to;
- where possible the volume of waste produced will be reduced, material reused or recycled. Opportunities for reuse and recycling of material will be explored and maximised within the Project and on other nearby developments;
- development of a programme of material deliveries and creation of suitable storage areas to avoid damage and contamination and therefore limit the potential for waste to be generated;
- where feasible and practical materials will be locally sourced;
- the amount of material ordered will be checked to avoid over ordering or the ordering standard lengths rather than the lengths required;
- avoid damage during unloading or delivery to inappropriate areas or the acceptance of incorrect deliveries, specification or quantity;
- avoid exceeding shelf lives;
- pre-cast products will be used where feasible and practical to avoid the generation of waste arising from off cuts;
- avoid damage or contamination from incorrect storage, loss, theft and vandalism. Any excess concrete will be allowed to harden then broken up and taken off site by a licenced carrier to a permitted or exempt waste site;
- a Materials Management Plan (MMP) will be developed if required to allow the use of excavated waste under CL: AIRE Definition of Waste: Development Industry Code of Practice, v2 (2011) for the reuse of excavated waste materials; and
- appropriately permitted waste treatment and disposal facilities will be used. Where feasible and practical facilities located as close as possible to the Proposed Development will be used to minimise the impact of transportation.

Soil testing

7.9.17 Excavated soils are often classed as a waste product by the Environment Agency and are therefore subject to waste Duty of Care requirements. All waste must be legally classified according to a List of Waste code found within the Environment Agency Technical Guidance Document WM3. Soil has been included within the document as a mirror entry.

7.9.18 Contaminated soils may be classified as either hazardous or non-hazardous, depending on the concentrations of 'dangerous substances' in the soil. An assessment of the composition of the waste soil using appropriate techniques, which

could include sampling and laboratory analysis, will be undertaken to determine whether the waste is classifiable as hazardous.

7.9.19 It is against the law to knowingly or unknowingly wrongly classify waste as hazardous or non-hazardous. It is also against the law to send waste to a site that cannot legally accept it (e.g., hazardous soil to an inert landfill). It will be the responsibility of the waste producer to ensure all soil wastes are appropriately classified.

7.9.20 The detailed Decommissioning Plan will put measures in place when decommissioning takes place under task specific Impact Plans and Risk Assessments.

Resource use

7.9.21 The Applicant will require the Principal Contractor(s) to put in place measures to minimise energy consumption and carbon emissions during construction. This will include:

- measures to reduce energy usage;
- monitoring, reporting and setting of targets for carbon dioxide arising from site activities and from transportation to and from sites;
- consideration of energy efficiency in the procurement, maintenance and use of construction plant; and
- consideration and assessment of energy from renewable and/or low emission sources used during construction.

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8 List of Abbreviations

Anlian Water Services	Anlian Water Services Limited
BAPA	Basic Assessment Protection Agreement
BPG	Best Practice Guidance
BPM	Best Practical Means
BS	British Standard
CCS	Considerate Constructors Scheme
CEMP	Construction Environmental Management Plan
CLOCS	Construction Logistics and Community Safety
CIRIA	Construction Industry Research and Information Association
CoCP	Code of Construction Practice
CoPA	Control of Pollution Act 1974
CSCS	Construction Skills Certificate Scheme
CTMP	Construction Traffic Management Plan
CWWTP	Cambridge Waste Water Treatment Plant (existing)
CWWTPRP	Cambridge Waste Water Treatment Plant Relocation Project
Defra	Department for Environment, Food and Rural Affairs
DCO	Development Consent Order
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EMA	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Act 1990
ES	Environmental Statement
FRA	Flood Risk Assessment
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
IQAM	Institute of Air Quality Management
LCRM	Land Contamination Risk Management
MMC	Motor Control Centre
MMP	Materials Management Plan
NJUG	National Joint Utilities Group
PRoW	Public Right of Way
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidance
PLC	Primary Local Controls
TRO	Traffic Regulation Order
WRAP	Waste and Resources Action Programme
WRC	Water Recycling Centre
WSI	Written scheme of investigation
WWTP	Waste Water Treatment Plant
UXO	Unexploded Ordnance

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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/>