

Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Appendix 2.2: Code of Construction Practice Part B

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04	20.11.23	-	Amendments Section 3.4, 3.5
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<u>06</u>	<u>22.01.24</u>	-	<u>Section 3.1 to 3.4 have been updated to clarify and strengthen wording relating to the management of construction activities. Figure 3.1 has been added to clarify the activities proposed in the parcel of land adjacent the outfall. Updates are direct and indirect results of the feedback received during and following ISH3.</u>

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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”), which confirms that the project will be treated as a Nationally Significant Infrastructure Project (“NSIP”) when the application is submitted.

1.3 The Proposed Development

- 1.3.1 This section provides a high-level summary of the Proposed Development. The term Proposed Development refers to the Cambridge Waste Water Treatment Plant (WWTP) Relocation project in its entirety and all works associated with the development.
- 1.3.2 A detailed description of the Proposed Development can be found in Chapter 2 of the Environmental Statement (App Doc Ref 5.2.2).
- 1.3.3 The purpose of the proposed WWTP will be to treat all waste water and wet sludge from the Cambridge catchment just as the existing Cambridge WWTP currently does, plus that from the growth indicated and being planned within the catchment in the Local Plan to 2041, with ability to expand beyond to deal with further growth.
- 1.3.4 As part of its statutory function, the Applicant operates the existing Cambridge WWTP. The existing Cambridge WWTP receives waste water from the Cambridge catchment either directly from the connected sewerage network or tankered to the plant from homes and businesses that are not connected. This waste water is then treated and the treated effluent discharged through an outfall to the nearby River Cam. The existing Cambridge WWTP is an integrated WWTP, as would be the Proposed Development. Integrated WWTP incorporate a sludge treatment function, in the form of a Sludge Treatment Centre (STC), which treats the sludge derived from the waste water from the catchment, and the “wet sludge” produced by other satellite plants which do not have integrated STC.
- 1.3.5 The Waterbeach New Town development lies to the north of Cambridge. When built out Waterbeach new town will comprise some 11,000 new homes along with associated business, retail, community and leisure uses. Waste water from Waterbeach will ultimately be treated by the proposed Cambridge WWTP once operational. However, the rate of development at Waterbeach New Town may require a new pipeline (rising main) to be built from Waterbeach to the existing Cambridge WWTP to allow treatment of waste water in advance of the proposed WWTP becoming operational. In that case, either a later connection would be made to the proposed WWTP from a point on the pipeline route, or flows diverted from the existing Cambridge WWTP via the transfer tunnel.
- 1.3.6 In summary the Proposed Development will comprise of:
- an integrated waste water and sludge treatment plant.
 - a shaft to intercept waste water at the existing Cambridge WWTP on Cowley Road and a tunnel/ pipeline to transfer it to the proposed WWTP and terminal

pumping station. Temporary intermediate shafts to launch and recover the micro-tunnel boring machine.

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

2 Code of Construction Practice

- 2.1.1 This Code of Construction Practice (CoCP) describes the minimum 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 development. Compliance with the CoCP will be secured through a requirement of the DCO as set out in paragraph 3.1.17 of Part A (Appendix 2.1, App Doc Ref 5.4.2.1).
- 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 along with the natural and historic environments; and
 - to set out a framework for engagement with the local community and their representatives throughout the construction period.
- 2.1.3 The CoCP comprises 2 parts, Part A: General requirements and Part B site-specific measures.
- 2.1.4 Part A of the CoCP sets out overarching and general principles including the following:
- legislative requirements, guidelines and Best Practice Measures to be implemented and followed during construction;
 - where relevant obligations which will be imposed upon the Principal Contractor(s), subcontractors and suppliers when undertaking work on behalf of the Applicant; and
 - plans, control measures and monitoring procedures for managing potential environmental impacts relating to the construction period.
- 2.1.5 Part B of the CoCP, which is this document, sets out site specific measures that 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 For the purpose of the CoCP, the term 'construction' includes all site preparation works, engineering and construction activities associated with the construction of the Proposed Development, including deliveries and waste removal. Wet and dry commissioning of the new infrastructure also falls within the remit of this document. The only decommissioning activities within its scope, however, relate to the activities required to take the existing Cambridge WWTP on Cowley Road out of service and to rescind the associated Environment Agency permits. Demolition activities are not included.

- 2.1.7 Details of the Proposed Development and construction activities, including the overall construction programme, are set out in Chapter 2 Project Description (App Doc Ref 5.2.2), and not therefore repeated here. This document should be read alongside the ES but is not intended to duplicate the assessment set out therein.
- 2.1.8 This document should also be read alongside the DCO Plans ([Volume App Doc Ref 4](#)) including the Scheme Order Limits, Design Plans, Works Plans, Rights of Way Plans, Hedgerow Regulations and Tree Protection Plans and the Access and TRO plans.
- 2.1.9 New habitats and ecological features will be created as part of the Proposed Development. The Landscape, Ecological and Recreational Management Plan (LERMP) (Appendix 8.14, App Doc Ref 5.4.8.14), identifies the immediate and long-term commitments to manage the planting, protection and enhancement of biodiversity and recreational areas around the proposed WWTP.
- 2.1.10 The CoCP is submitted for approval ~~by the Secretary of State as part of the DCO application (App Doc Ref 2.1)~~ as part of the discharge of requirement 8 of the DCO application (App Doc Ref 2.1) which states that construction works shall be carried out in accordance with the measures set out in the CoCP along with 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 to be appended to it. The topic-based management plans are set out in Section 4 of Part A.
- 2.1.11 Part B of the CoCP is divided into the following sections based upon different parts of the Proposed Development:
- treated effluent [and storm](#) pipelines and outfall to the River Cam;
 - transfer tunnel;
 - proposed [Cambridge](#) WWTP;
 - Waterbeach pipeline; and
 - the existing Cambridge WWTP.
- 2.1.12 Each section follows the same format for ease of reference. It provides further details of the proposed site-specific measures under a set of standard headings, based upon the topic areas covered within Part A of the CoCP. Where no additional site-specific measures or deviations from Part A have been identified or are proposed, it notes that the general mitigation measures set out therein are applicable.

3 Site Specific Measures

3.1 Treated effluent and storm pipelines and outfall to the River Cam

3.1.3.1.1 The below section should be read in conjunction with Figure 3.1 Indicative outfall arrangement plan.

Topic area		Site specific measures
Site Set Up and General Arrangements	Set Up, Security and Safety	<p>Temporary fencing will be erected during the construction period. This will comprise temporary hoarding or an opaque sheeting. The construction compound will be secured in line with the Construction Design Regulations (CDM). Temporary fencing will also be used to prevent access into ecological mitigation areas - see Ecology and Nature Construction.</p> <p>Within the construction working area the construction methodology will be planned to avoid lifting over the river as far as is practical. If this is not possible, controls will be put in place during the lifting operation to protect users of the river, whilst maintaining navigation.</p> <p>The usable width of the River Cam will be narrowed during construction of the outfall for a period of around 4 months. Whilst the navigable area will be narrowed the River Cam will remain navigable to all permitted users throughout this period. An Outfall Management and Monitoring Plan will be produced which will to set out all measures and monitoring related to the construction of the outfall. Further details are set out in the sections below.</p> <p>The measures set out in Section 5 Site Set Up and General Arrangements, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
	Site Lighting	<p>Temporary LED tower lights no taller than 8 metres in height will be used if required whilst the works are undertaken. Lighting levels will not exceed 200 lux. Temporary lighting will not be used for any longer than is required.</p>

Topic area	Site specific measures
	<p>The measures set out in Section 5.9, Site -Lighting, of the CoCP Part A (App Doc Ref 5.4.2.1) -to ensure that any potential impacts upon nearby receptors are minimised will also be implemented. The construction lighting design will be implemented in accordance with the approved design that must align with section 6 of the Lighting Design Strategy (App Doc Ref 5.4.2.5).</p>
Working Hours	Core working hours for winter and summer will be complied with.
Community Engagement	<p>As set out above an Outfall Management and Monitoring Plan will be prepared to align with the outline OMMP (App Doc Ref 5.4.8.23). This will include requirement for the following:</p> <ul style="list-style-type: none"> • notification to river users of the works via communication protocols to be agreed with the Conservancy; • identification of relevant stakeholders; • phasing plans to minimise the impact of construction works on specific events ie major rowing events; • navigation warning signs. The plan will set out the required navigation marks including lighting and river bank warning signs.
Flood risk	<p>Appropriate signage will be displayed on the river to inform river users of the proposed construction works.</p> <p>Site set up to be as agreed with the Environment Agency including the setting of temporary river works structure heights.</p> <p>The construction compounds should be located in Flood Zone 1 where possible;</p> <p>Any loose items within laydown or storage areas within Flood Zones 2 and 3 should be secured to prevent them becoming a debris hazard in a flood event</p> <p>Any material with contaminant potential to be stored should be in Flood Zone 1 if possible, otherwise above design flood levels.</p>

Topic area		Site specific measures
		<p>Completion of the river works to maximise July -August when river levels are typically lower and river users fewer outside of term time.</p> <p>A temporary compound will be located within the Flood Zone. Mitigation measures will be put in place to ensure that it does not increase flood risk elsewhere and can be made safe for the duration of construction activities.</p> <p>The measures will be incorporated into the CEMP and as approved by the Environment Agency through the Environmental Permit (Flood Risk Activities)</p>
<p>Ecology and Nature Conservation</p>	<p>Outfall management plan</p>	<p>As set out above, an Outfall Management and Monitoring Plan will be prepared. This will be in accordance with the outline OMMP (App Doc Ref 5.4.8.23). This plan will be a live document and updated to integrate requirements below and those specified by related permits and consents including:</p> <ul style="list-style-type: none"> • Environmental permit (flood risk activities) • Environmental permit (Discharges to surface water) • Land drainage consent (for works to the ordinary watercourse) • Conservation licence (water vole) <p>A minimum buffer of 10 metres will be maintained between the outfall construction compound and the ditches located adjacent to the riverbank. An outline Outfall Management and Monitoring Plan is provided as Appendix 20.x (App Doc Ref 5.4.8.23)</p>
	<p>Fish rescue</p>	<p>The Outfall Management and Monitoring Plan will include a fish rescue strategy. The timing and approach will be agreed with the Environment Agency. Fish rescue will be carried out by a suitably experienced ecologist. Fish rescue will be carried out prior to dewatering of the cofferdam.</p>
	<p>Works timing</p>	<p>There will be no works in the River Cam during the fish spawning period (February to June). (Works are planned for July to October).</p>

Topic area	Site specific measures
<u>Protective fencing</u>	<p>Welded wire mesh fencing (Herptile fencing) (or similar) will be combined with opaque sheeting (on the path side of the fence) to ensure that reptiles are not impacted. This will prevent people and/or dogs from accessing the ditch areas. There needs to will be opaque fencing (opaque sheeting mounted on Heras fencing) along the margin of existing pathway adjacent to the ditch parallel to the River Cam (Works No 32) to minimise visual disturbance for water vole and prevent any unauthorised human/dog access into the ditch area. This fencing will be required to be maintained in place until construction works are completed within this area, and no further construction disturbance will occur.</p> <p>In the event pre construction surveys indicate the presence of reptiles † There should also be reptile fencing around any works areas to prevent access by reptiles – – the design of this this detail along with its construction, maintenance and timeframe for use, would be in the a reptile mitigation strategy.</p>
<u>Licensing – water vole</u>	<p>License will be obtained from Natural England before works adjacent to the River Cam commence and all mitigation measures set out there in will be adhered to whilst construction works are carried out. This includes creation of replacement ecological habitat (Work No. 39, Works Plan Sheet 2, App Doc Ref 4.3) <u>a minimum of 12 months</u> prior to the displacement activities.</p>
<u>Non native species control</u>	<p>Water voles have been identified along the banks of the River Cam and within the ditch crossed by the outfall/treated effluent pipelines. Appropriate mitigation measures will be put in place prior to construction commencing. New habitat will be created sufficiently in advance of construction commencing to allow the habitat to establish and mature.</p>
	<p>Plant material from the drainage ditch will be transferred to new drainage ditches created for water vole compensatory habitat or a suitable receptor site, prior to displacement. Any plant material to be transferred to any newly created waterbodies/receptor site should be checked by a suitably experienced ecologist to ensure it is not a species listed under Schedule 9 of the Wildlife and Countryside Act</p>

Topic area	Site specific measures
	1981 (as amended) or Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019.
<u>Ditch reinstatement</u>	Following temporary disturbance of the ditch adjacent to the River Cam, the banks will be re-established by planting <u>using</u> native locally sourced vegetation.
<u>Plants of botanical interest</u>	Plants of particular botanical interest are present next to the River Cam, in particular strawberry clover present near the tow path. Prior to construction, plants of interest that would be directly affected by the construction will be translocated. The translocation of individual plants will be undertaken during the winter period in dry conditions under the supervision of an ECoW.
<u>Right of way and ditch buffer</u>	A minimum buffer of 10 metres will be maintained between the temporary public rights of way routes (PRoW) and the ditches located adjacent to the riverbank. See <u>table section 'Traffic and Access- Temporary Diversion Footpath' and the ditches located adjacent to the riverbank.</u>
<u>Translocation - reed</u>	Areas of reed present in the location of the permanent outfall will be translocated (where possible) to an area downstream of the river bank protection works within Work No. 32 on the River Cam or to the created ditches in Work No. 39 location (Works Plan Sheet 2, App Doc Ref 4.3). These works will be in accordance with measures approved by the Environment Agency through the Environmental Permit (Flood Risk Activities). The translocation approach will be set out in the <u>approved</u> Outfall Management and Monitoring Plan.

Topic area		Site specific measures
	General Part A measures	The measures set out in Section 7.2, Ecology and Nature Conservation, of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Historic Environment	Biggin Abbey Moat	No works will be undertaken within 50 metres of the moated site at Biggin Abbey. This area should be demarcated on a figure in the detailed CEMP covering these activities and the restriction communicated to the workforce.
	Hoarding – Outfall Compound	The outfall compound will need to have screening/hoarding to minimise the visual impact compatible with the requirements in the Flood Risk Assessment (FRA) (Appendix 20.1, App Doc Ref 5.4.20.1). The hoarding proposal location should be discussed with the relevant local authority and the final details indicated in the CEMP relevant for the phase.
	Temporary Fencing	Temporary fencing will be erected as set out under table section ‘Site Set Up and General Arrangements’ above.
	General Part A measures	The measures set out in Section 7.3, Historic Environment, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Land Quality	Land drains	Land drainage drains in areas temporarily required during construction will be appropriately reinstated once the final effluent and storm pipelines have been installed.
	General Part A measures	The measures set out in Section 7.4, Land Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Water Quality	Silt control	Silt laden water will not be discharged into the River Cam or the adjacent ditch. Areas likely to generate sediment/ sediment laden run-off, such as during the removal of bed material and placement of scour protection within the river, will be carried out behind a suitable cofferdam using appropriate silt and sediment removal techniques to achieve a compliant water quality standard prior to any discharge back to the watercourse.

Topic area	Site specific measures
	<p>Appropriate monitoring will be put in place whilst the works are carried out. The monitoring regime will be agreed with the Environment Agency in advance of the works.</p> <p><u>Dewatering</u> Dewatered water will be returned to the river subject to appropriate treatment before it is discharged. Dewatering from temporary excavations will meet the requirements of the regulatory position statement for temporary dewatering from excavations to surface water. In the event the conditions of the RPS cannot be met the Environment Agency will need to be contacted for an appropriate permit. Records will be retained for 2 years that show compliance with the RPS <u>if applicable</u>.</p> <p><u>Groundwater control</u> In the event that locally excavated materials prove to be unsuitable for pipe bedding in any of the sections of pipeline, a more uniform, sandy or granular material will be used. Additional measures will be used to protect groundwater if required, including the use of clay plugs or partitions (also referred to as clay stanks) across the trench at suitable locations. However, such measures are not expected to be necessary.</p> <p><u>Permits</u> Relevant licenses for the River Works will be obtained save for those disappplied by the DCO and covered by it from the Environment Agency, <u>internal Drainage Board (IDB)</u> and <u>Lead Local Flood Authority (LLFA)</u> and the Conservancy prior to commencement. Construction works will thereafter be carried out in accordance with the license requirements.</p>
Flood Risk	<p><u>Timing of works</u> A Flood Risk Assessment (Appendix 20.1, App Doc Ref 5.4.20.1) has been prepared and is submitted as part of this DCO application. Where feasible, works will not be carried out in the months with elevated flooding risks.</p> <p><u>Compound siting</u> Where feasible, works will not be carried out in the months with elevated flooding risks. The construction compound has been set-back from the edge of the drainage ditch (10m to the boundary fence).</p>

Topic area	Site specific measures
<u>Bank stabilisation</u>	<u>Bank stabilisation measures will be put in place on the eastern side of the River Cam in the vicinity of the outfall in the form of sheet piling with capping beam. These measures will be as approved by the Environment Agency through the Environmental Permit (Flood Risk Activities).</u>
<u>Equipment location</u>	Areas of higher risk, such as equipment and facilities and material stockpiles, will generally be located on the east side of the compound.
<u>Drainage paths</u>	Drainage paths will be reviewed and constraints, where higher velocities are possible, avoided. Biodegradable oil will be used in all machinery.
<u>Outfall construction</u>	The new outfall will be constructed within a sheet pile cofferdam to provide dry conditions for construction. It will be designed to maintain the flood protection levels currently provided by the river bank (with an adequate free board to prevent over topping). Construction work within the cofferdam is expected to take up in the region a of 4 months.
<u>Permits</u>	An Environment Agency environmental permit for a flood risk activity will be applied for before construction works commence. The works will be carried out in accordance with the conditions of the permit.
<u>General Part A measures</u>	The measures set out in <u>Section 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will also be implemented.
Transport and Access	<u>Temporary Diversion Footpath</u> It is proposed to temporarily stop up and divert footpath 85/6 whilst construction of the outfall and terminus of the final effluent pipeline take place. A small temporary diversion of footpath 85/8 will also be required. Full details of the proposals are set out in Schedule 6 of the DCO application and shown on the Rights of Way Plans (App Doc Ref 4.6). The diversions are likely to be required for a maximum period of 11 months.

Topic area		Site specific measures
	Access arrangements – farm access	<p>The landowner/tenant access to the adjacent field to the north of the working area in land holding R037 will be maintained through the creation of fuse the existing an underpass route under the A14.</p> <p>The final access arrangements for land holding R037 will be agreed with the landowner prior to the start of construction.</p>
	Horningsea Road temporary traffic arrangements	<p>It is proposed to install the final effluent and storm pipelines to the outfall via open cut techniques. Traffic management measures will be put in place along Horningsea Road when this is undertaken. These will be agreed with Cambridgeshire County Council (CCC). Liaison will take place with the local community prior to the works being carried out in accordance with the Community Liaison Plan (See Part A for details). D. Full details of the proposed diversion temporary traffic management are set out in the Construction Traffic Management Plan (CTMP), (Appendix 19.7, App Doc Ref 5.4.19.7).</p> <p>Access to the construction working area for the final effluent and storm pipelines and outfall will be via the access constructed to the proposed Cambridge WWTP. A dedicated plant crossing point will be installed across Horningsea Road during the construction period for required for the final effluent and storm pipelines and outfall and drainage ditch creation works.</p> <p>Appropriate control measures will be put in place, as set out in the CTMP (Appendix 19.7, App Doc Ref 5.4.19.7) in particular sections 4.2, Local routing and site plant vehicle routing, 5.1 Route signage, 6.3 Adherence to Designated Routes, and 6.9 Facilitate safe movement of users of the highway (including non-motorised users).</p>
	General Part A measures	<p>The measures set out in Section 7.6, Traffic and Transport, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
	Noise and Vibration	Piling

Topic area	Site specific measures	
	Working hours controls – outfall	mitigation measures. It is proposed that a piling mat will be formed and that all piling will be done from the river bank. Building € condition surveys will be carried out and vibration monitoring put in place where appropriate and as agreed with stakeholders.
	General Part A measures	The noise and vibration assessment, reported in the ES Chapter 17 (App Doc Ref 5.2.17) found noise levels greater than significant observed adverse effect level ‘SOAEL’ during works undertaken at the final effluent outfall during the proposed working hours between 06:00 and 07:00 within the summer core construction hours. A restriction of construction working hours will be implemented for these activities to minimise noise impacts due to works undertaken at the final effluent outfall. Works during Core Hours should start no earlier than 07:00 at this work site.
Air Quality	General Part A measures	No specific measures required. The measures set out in Section 7.8, Air Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.
Waste Management	Sediment removal – waste exemption Sediment removal – waste exemption	Any sediment removed from the river bed must have an appropriate waste exemption or environmental permit if the dredging spoil is recovered or disposed on land that is not immediately next to the dredging location. This must be in place prior to the commencement of the river works.
	General Part A measures	The measures set out in Section 7.9, Waste Management and Resource Use, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.

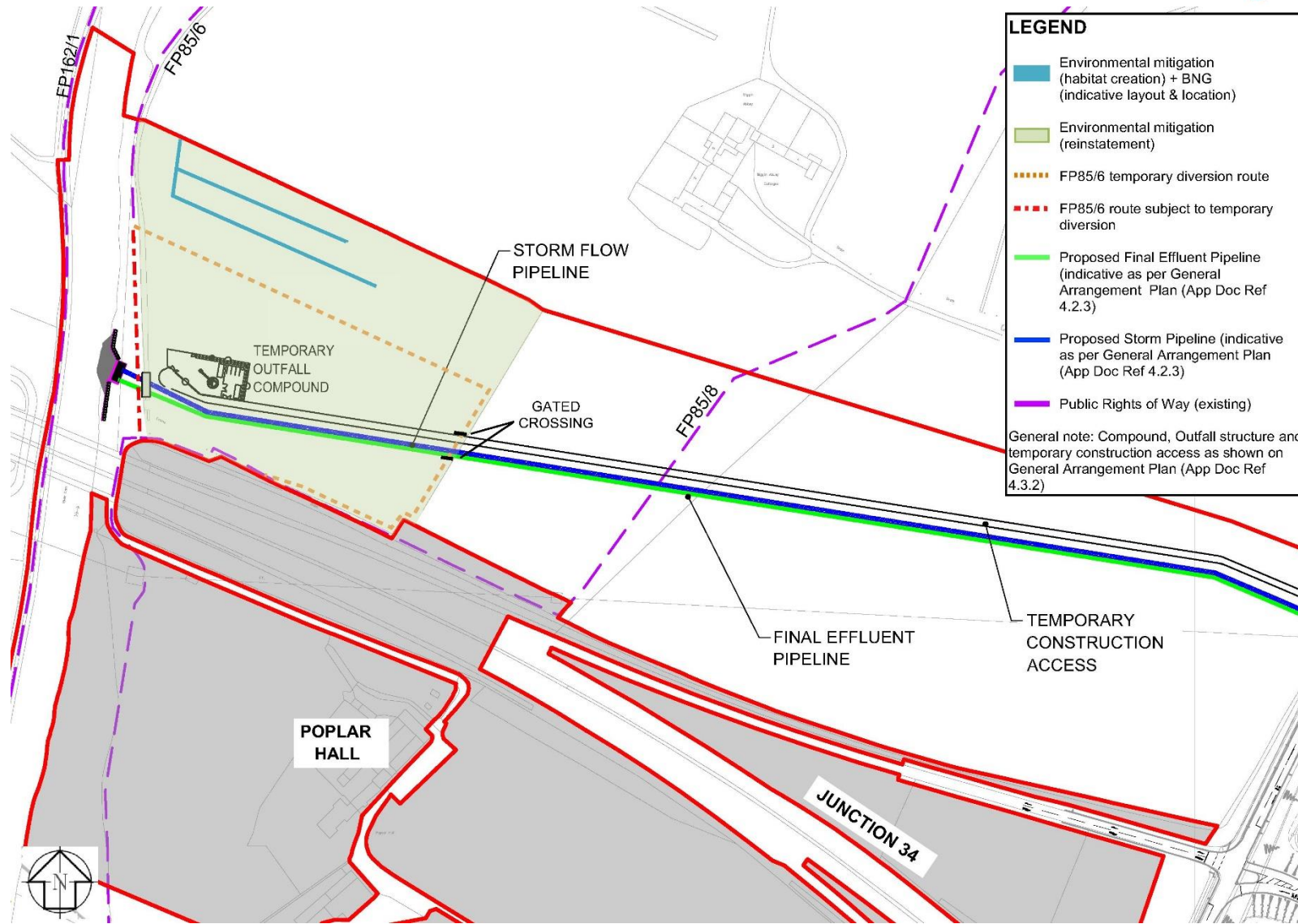


Figure 3.1: Indicative Outfall Arrangement Plan (adapted from the General Arrangement Plan (App Doc Ref 4.3.2))

3.2 Transfer Tunnel

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
Site Set Up and General Arrangements	Set Up, Security and Safety	<p>Access to the construction working areas around each shaft external to the existing Cambridge WWTP boundary (as identified on the General Arrangement Plans and Works Plan, App Doc Ref 4.2 and 4.3) will be tightly controlled to ensure that no unauthorised access takes place. CCTV will be installed, and the compound patrolled by security personnel. Access to the shaft within Cambridge WWTP will be controlled through the existing site security control measures which are in place.</p>
		<p>Solid hoarding will be provided at shaft 4 and its associated construction compound area (General Arrangement Plan(s), App Doc Ref 4.2 refer) and Noise and Vibration section of this table below.</p>
		<p>The Applicant will require that specific measures are put in place during the construction of the transfer tunnels in line with its standard guidance in respect of ‘confined spaces working’. This will include an initial risk assessment to identify safe working practices including appropriate emergency response procedures along with the monitoring of air quality. A ‘Permit to Work’ system in line with Health and Safety Executive requirements will also be put in place. Close liaison with the emergency services will take place before the works commence on site.</p>
		<p>The measures set out in Section 5, Site Set Up and General Arrangement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
	Site Lighting	<p>Temporary LED tower lights up to a maximum of 8 metres will be required around the shafts. The hours which this lighting will need to operate will reflect the activities being carried at each shaft including periods of continuous working where required. Lighting levels for welfare accesses and egresses will not exceed 50 lux. Lighting levels for the shafts will not exceed 200 lux.</p>

		<p>The measures set out in Section 5, Site Set up and General Arrangements, Part A of the CoCP. Part A (App Doc Ref 5.4.2.1) to ensure that any potential impacts upon nearby receptors are minimised will also be implemented.</p> <p>The construction lighting design will be implemented in accordance with the approved design that must align with section 6 of the Lighting Design Strategy (App Doc Ref 5.4.2.5).</p>
Working Hours		<p>Core working hours, winter and summer will be complied with in respect of shafts 2 and 4. No works will take place between 23:00 and 07:00 or outside of the working week at shaft 4. There will be periods of continuous working at shafts 3 and 5. The transfer of material between the new tunnel and the proposed Cambridge WWTP site will operate during the core working hours, Monday to Friday.</p> <p>Shaft 4 will be used for the removal of tunnelling machinery only. This will take place once works have finished at shaft 3 and again when works have finished at shaft 5. This will be done in accordance with the core working hours, with no works to commence before 07.00 and only during the working week.</p>
Community Engagement		<p>No site specific measures required.</p> <p>The measures set out in Section 3, Community and Stakeholder Engagement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p>
Ecology and Nature Conservation	General Part A measures	<p>No site specific measures required.</p> <p>The measures set out in Section 7.2, Ecology and Nature Conservation, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p>
Historic Environment	Hoarding at Shaft 4 and 5	<p>Solid hoarding will be installed around shafts 4 and 5 to mitigate the potential for adverse visual impacts on Poplar Hall and Poplar Hall Farm. This should be discussed with the landowner and relevant local authority and the final details indicated in the CEMP relevant for the phase.</p>
	General Part A measures	<p>The measures set out in Section 7.3, Historic Environment, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p>

Land Quality	General Part A measures	No site specific measures required. The measures set out in Section 7.4, Land Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.
Water Quality	Transport and Access Dewatering of tunnel and shafts	Dewatering of the tunnel shafts will be required. All necessary consents and permits will be obtained before construction works associated with the tunnels and shafts commence.
	General Part A measures	The measures set out in Section 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Transport and Access	Access routes	Access routes will be as defined in the CTMP (Appendix 19.7, App Doc Ref 5.4.19.7).
	Deliveries and access to Shaft 4	Deliveries to shaft 4 will be timed in accordance with the limitations set out under Working Hours above. Access to shaft 4 will be via the new temporary access road, from Horningsea Road, that will be installed for the construction works and not via the existing access road to Poplar Hall Farm.
	General Part A measures	The measures set out in Section 7.6, Traffic and Transport, Part A of the CoCP (App Doc Ref 5.4.2.1) -will also be implemented.
Noise and Vibration	Working hours shaft 4	Working hours around shaft 4 will be amended as set out above in table section 'Site Set Up and General Arrangements- Working Hours' .
	Hoarding	Solid h Hoarding will be installed at shaft 4 to minimise noise impacts on nearby sensitive receptors including Red House Close, Poplar Hall and Poplar Hall Farm. The selection of the hoarding should be made in reference to the guidance on BS5228-1 2009+A1:2014 -which provides information on acoustic screens for use in construction sites. Guidance includes

		information on noise propagation and attenuation together with guidance on the design of acoustic screens.
	Settlement monitoring	Settlement monitoring equipment will be placed on Red House Close with agreement of the landowner. Building condition surveys will be carried out and vibration monitoring put in place where appropriate and as agreed with stakeholders.
		Settlement monitoring of the major infrastructure crossings (i.e. the railway and A14) will be carried out if required by Network Rail/National Highways in accordance with the protective provisions of the DCO and any associated asset protection agreements entered into with them.
	General Part A measures	The measures set out in Section 7.7, Noise and Vibration, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Air Quality	Stockpile management	Stockpiles associated with shaft 5 will be 'back bladed' with the back of an excavator bucket, to shape and compact the surface of the stockpile to control dust.
	General Part A measures	The measures set out in Section 7.8, Air Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Waste Management	General Part A measures	No site specific measures required.
		The measures set out in Section 7.9, Waste Management and Resource Use, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.

3.3 Proposed Waste Water Treatment Plant (WWTP)

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
Site Set Up and General Arrangements	Set Up, Security and Safety	<p>The site of the proposed <u>Cambridge</u> WWTP will be secured to prevent unauthorised access. The site security measures will be reviewed with the police before works start on site. There will be a 24/7 security presence on site once the enabling works have been completed and the main site construction working area has been established. All site entrances/exits will be barrier-controlled and a security guard present. CCTV will be installed with views of the internal site and perimeter. This will be monitored 24/7. The Construction Manager will be contacted if an intruder is detected.</p>
		<p>The measures set out in Section 5, Site Set Up and General Arrangement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
	Site Lighting	<p>Temporary lighting will be required. LED flood lights will be installed in the construction compound. These will comprise a mix of lights attached to buildings within the compound, on storage containers and tower lights as required. The lights would be located a maximum of 8 metres above grounds levels. Lighting levels would be a maximum of 50 lux. Temporary lighting will also be required within the working area for the proposed Cambridge WWTP. This will comprise tower lights, up to 8 metres in height. Maximum lux levels will not exceed 300 lux. The maximum level will only be used for short periods where required to ensure the activity being undertaken can be done so safely.</p> <p>The construction lighting design will be implemented in accordance with the approved design that must align with section 6 of the Lighting Design Strategy (App Doc Ref 5.4.2.5).</p> <p>The measures set out in Section 5.9, Site Lighting, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be also implemented.</p>

	Working Hours	Core working hours, winter and summer will apply, except for very special circumstances when out of hours working will be required.
	Community Engagement	No site specific measures required. The measures set out in Section 3, Community and Stakeholder Engagement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.
Ecology and Nature Conservation	Tree Protection	Tree protection measures will be erected in accordance with the detailed set in the Arboricultural Reports (Appendices 8.17, - & 8.19 , App Doc Refs 5.4.8.17 & 5.4.8.19) and the Hedgerow Regulations and Tree Preservation Plans (App Doc Ref 4.8) . Tree Protection Plans before works commence. The tree protection measures will thereafter be retained until the works are complete.
	Bats	The tree with bat roosting potential will protected during construction works. This will be in accordance with the Natural England conservation license. New and replacement landscaping will be planted in accordance with the measures set out in the Landscape, Ecological and Recreation Management Plan (LERMP) (Appendix 8.14, App Doc Ref 5.4.8.14).
	Ditch crossings	Crossings of the ditch with hedgerow running to the eastern side of the proposed WWTP will be minimised to 2 crossings each up to 6m width. The crossing locations will target existing gaps in the hedge. Crossing of the ditch (incorporating a temporary culvert not exceeding an 8m length of the ditch) will be in accordance with a permit from the Swaffham Internal Drainage Board.
	Hedges	Prior to removal the hedgerow will be surveyed and the best sections retained for use elsewhere within the Proposed Development.
	Reptiles	Reptile fencing (with reptile-proof vehicular access points) will be installed around the periphery of the working area for the proposed WWTP. A translocation programme will then be implemented if necessary -to relocate all reptiles within the fenced area to suitable habitats outside of the fencing.

<p><u>Badger</u></p>	<p>A translocation programme will then be implemented to relocate all reptiles within the fenced area to suitable habitats outside of the fencing.</p> <p>An annex badger sett will be lost during construction. A protected species licence will be obtained from Natural England and all necessary mitigation measures complied with during construction.</p>
<p><u>CWS</u></p>	<p>With respect to the Low Fen Drove Way CWS the following protective measures are required and will be implemented:</p> <ul style="list-style-type: none"> • Wildlife sensitive construction lighting (<2700K, directional only with no upward orientation or light spill) • Dust control measures in line with those set out in CoCP Part A (such as wetting materials); • No removal of vegetation from the CWS; • Routing of works through existing pathways that cross the CWS; and • Provision of a buffer of a minimum of 10m between works areas and extent of CWS. <p>The measures set out in Part A of the CoCP will also be implemented.</p>
<p><u>General Part A measures</u></p>	<p>The measures set out in <u>Sections 5.9, Site Lighting and 7.2, Ecology and Nature Conservation, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will also be implemented.</p>
<p>Historic Environment</p> <p><u>General Part A measures</u></p>	<p>No site specific measures required.</p> <p>The measures set out in <u>Section 7.3, Historic Environment, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will be implemented.</p>
<p>Land Quality</p> <p><u>General Part A measures</u></p>	<p>No site specific measures required. The measures set out in <u>Section 7.4, Land Quality, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will be implemented.</p>

Water Quality

Construction drainage

Site specific drainage measures for the construction phase will be incorporated into the CEMP. This will include the identification of measures to manage any potential for flooding and the potential for contamination. These measures may include temporary Sustainable Drainage Systems (SuDS) or conventional drainage to contain surface water and silt during the construction of the proposed Cambridge WWTP. Water to be recycled where possible and used for wheel washing/ in bowsers.

Black Ditch

Monitoring of water levels in Black Ditch will be undertaken for a period prior to, during and following all dewatering activities required for construction at the proposed Cambridge WWTP. There will not be any dewatering to the Black Ditch itself. The scope of the monitoring including its duration will be agreed with all relevant stakeholders before works which could potentially impact the ditch commence. [The scope of monitoring is provided in the Outline Water Quality Monitoring Plan \(App Doc Ref 5.4.20.13\). The detailed CEMP shall be developed to include monitoring in accordance with the approved Water Quality Monitoring Plan.](#)

Temporary lagoon

The temporary lagoon for storing the water during testing will be lined to prevent leakage if required or if located in a sensitive location. Further management and mitigation measures to protect water quality [as relevant](#) will be set out in the [approved Commissioning Plan to align with the Outline Commissioning Plan as relevant](#) (Appendix 2.4, App Doc Ref 5.4.2.4).

Ditch crossings

Consent for the ditch crossings and works within 9m of IDB watercourses will be obtained prior to commencement. Construction works will thereafter be carried out in accordance with the license requirements. [The CEMP for the relevant phase should include any specific measures as required by the consent.](#)

	Private water supplies	Regular contact will be maintained with the owner of the private borehole during construction. Measures to maintain supply to the property will be put in place if required. These will be outlined in the CEMP. Wet testing of tanks and pipes will follow industry standards in relation to testing activities including any visual inspections of equipment under test to check for signs of structural deficiency prior to commencement of testing activities
	General Part A measures	The measures set out in Sections 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Flood risk	Temporary culverts	Temporary culverts associated with the construction period will be inspected for debris build up on a weekly basis to minimise risk of flood risk.
	Land drains	Land drains encountered in construction should be logged and marked on maps.
	General Part A measures	The measures set out in Sections 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Transport and Access	Temporary Access Arrangements	Access will be as identified in Appendix A, DCO Part 3 Accesses and Their Vehicular Needs, of the CTMP (Appendix 19.7, App Doc Ref 5.4.19.7). When construction works start, the area of land required for the construction of the proposed WWTP will be accessed for an initial period via Horningsea Road and Low Fen Drove Way whilst the new permanent access road is constructed as part of the enabling phase. Once this has been constructed, then the area of land required for the construction of the proposed WWTP will be accessed via the new access road.
	Temporary Diversions	Temporary very localised diversions will need to be put in place whilst improvements works are carried out along Horningsea Road. These are not expected to be required for more than 4 months. The CoCP Part A (App Doc Ref 5.4.2.1), section 3, sets out the community and stakeholder engagement proposed, this includes the formation of the Construction Forum to co-ordinate short term

		<p><u>construction activities. The Outline Community Liaison Plan (App Doc Ref 7.8) will provide specific mechanism to communicate these short term activities to local community stakeholders.</u></p>
	<u>General Part A measures</u>	The measures set out in <u>Section 7.6, Traffic and Transport, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will be implemented.
Noise and Vibration	<u>General Part A measures</u>	<p>No site specific measures required.</p> <p>The measures set out in <u>Section 7.7, Noise and Vibration, Part A</u> of the CoCP <u>Part A (App Doc Ref 5.4.2.1)</u> will be implemented.</p>
Odour	<u>Testing and Commissioning – odour management</u>	<p>To minimise odour during the commissioning process odour ducting and odour treatment will be put in place before the commissioning process commences.</p> <p>To ensure effective odour control during the testing and commissioning of the proposed WWTP, regular site inspections by the person accountable for odour issues on site will be undertaken to minimise the risk of causing nuisance and/or loss of amenity. The frequency of site inspections should be increased when activities with a higher potential to produce odour are being carried out , e.g., works during high temperature days. An inspection log will be kept and made available to the overseeing authority on request on request.</p>
	<u>Movement of sludge for seeding</u>	The sludge required to begin biological treatment (seeding) will be transported from the existing Cambridge WWTP in sealed tankers and pumped into the tanks through a closed process, minimising the likelihood of odour release to air.
	<u>General Part A measures</u>	<p>Measures to minimise potential odour impacts will be set out in the detailed <u>Commissioning Management Plan</u>. An Outline Commissioning Plan has been prepared and submitted as part of this application (Appendix 2.4, App Doc Ref 5.4.2.4).</p> <p><u>The measures set out in Section 7.8, Air Quality, of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</u></p>

Air Quality	General Part A measures	No site measures required. The measures set out in Section 7.8, Air Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.
Waste Management	General Part A measures	No site specific measures required. The measures set out in Section 7.9, Waste Management and Resource Use, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.

3.4 Waterbeach Pipeline

Topic Area	Site Specific Measures
Site Set Up and General Arrangements	<p>Site Set Up, Security and Safety</p> <p>A temporary construction compound will be located within Flood Zone 2¹. Temporary storage areas will be required in Flood Zone 3². Mitigation measures will be put in place to ensure that they do not increase flood risk elsewhere and can be made safe for the duration of construction activities - see Water Resources below.</p> <p>Remote security measures will be put in place at the site compound. This may take the form of a security robot.</p> <p>The construction working area will be demarcated by a post and rope fence unless otherwise identified in the CEMP.</p> <p>Laydown areas will be used along the route of the pipeline. These will be similarly demarcated unless identified in the CEMP. The Burgess Drove laydown area will be secured.</p>

¹ Land area identified as being at medium risk of flooding with a 1% to 0.1% chance from rivers or 0.5% to 0.1% from the sea.

² Land area identified as being at high risk of flooding with a 1% or higher chance from rivers or 0.5% from the sea.

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures
Site Lighting	<p>Launch and recovery pits for equipment deployed for trenchless construction techniques to be greater than 8m from the top of bank of main river or from the landward extent of an existing flood defence whichever is applicable.</p> <p>Temporary mobile lighting will be required. Lighting within compounds will comprise LED tower lights and PIR security lights. These will not be taller than 8 metres in height with a maximum lighting level of 200 lux. Temporary lighting will also be required for the Burgess Drove laydown area and for the Horizontal Directional Drill (HDD) launch and reception pits associated with the main crossings points i.e., the A14, railway crossings, and river Cam. The specification of this lighting will be the same as for the main compound area. Lighting to the HDD pits will only be needed whilst the pipeline is installed, for a maximum period of 4 weeks. Where the pipeline is installed via open cut task lighting in the form of tower lights (no higher than 8 metres with a maximum lighting level of 200 lux) may be required during the winter months. This lighting will be moved as the sections of open cutting progress and is unlikely to be used in any one area for more than 2 weeks.</p> <p>The construction lighting design will be implemented in accordance with the approved design that must align with section 6 of the Lighting Design Strategy (App Doc Ref 5.4.2.5).</p>
Working Hours	<p>Winters and summer core working hours will apply along with period of continuous working associated HDD crossings. Short period of out of hours working are also expected.</p>
Community Engagement	<p>No site specific measures required.</p> <p>The measures set out in Section 3, Community and Stakeholder Engagement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p>

Topic Area

Site Specific Measures

Doc Ref 5.4.8.17 & 5.4.8.19). Tree protection measures will be put in place in accordance with the specifications set out in the Arboricultural Reports (Appendices 8.17 & 8.19, App Doc Refs 5.4.8.17 & 5.4.8.19) and Tree Preservation Plans (Appendix 8.17, App Doc Ref 5.4.8.17 and App Doc Ref 4.85.4.8.17 & 5.4.8.19). This includes protection of the notable and veteran trees. The important hedgerow present (H23 and H24 on the plans) will be retained with HDD used to avoid the need to remove this habitat.

Protective fencing will be used in line with the recommendations of the Arboricultural reports referenced above however, due to their locations along the access and haul roads a number of trees will require ground protection instead (this includes but not be limited to; T008 to T002, T049 to T047, T076, T077, T105).

Bats	In relation to bats all works need to comply with the conservation licence for bats. The timing of works to avoid the most sensitive periods (i.e. avoiding hibernation and maternity) will minimise disturbance. Use of acoustic screening and preventing light spill onto the roost may reduce the disturbance also. Maintaining a dark commuting route from the roost to foraging areas will prevent access loss. A compensation (alternative roost feature) bat box on a nearby but less disturbed tree will be installed.
<u>Reptiles</u>	<u>Use of HDD techniques in areas where reptile populations are known, alongside a detailed reptile mitigation strategy will mitigate the risk of impacts upon these species.</u>
<u>Hedgerow and tree reinstatement</u>	Hedgerow will be reinstated following completion of the works. Replacement tree planting on a like for like basis will carried out outside the zone of easement for the pipeline unless an alternative species is proposed due to disease risks or at the request of the landowner.

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures
	<p>Where tree and hedgerow removal is required, appropriate replanting will take place.</p> <p><u>Cumulative effects – protected species</u> Should a reptile mitigation strategy (RMS) be required, the RMS shall be developed in coordination with adjacent active schemes to avoid overlapping mitigation actions in particular translocation activities.</p> <p><u>General Part A measures</u> The measures set out in Sections 5.9, Site Lighting and 7.2, Ecology and Nature Conservation, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
Flood risk	<p><u>Compound siting</u> The construction compounds should be located in Flood Zone 1 where possible.</p> <p><u>Securing of equipment</u> Any loose items within laydown or storage areas within Flood Zones 2 and 3 should be secured to prevent them becoming a debris hazard in a flood event</p> <p><u>Storage of materials</u> Any material with contaminant potential to be stored should be in Flood Zone 1 if possible, otherwise above design flood levels.</p> <p><u>Works timing</u> A site compounds and temporary storage will be required in the flood zone whilst construction place. As far as possible the installation of the pipeline will be carried out in drier months to reduce potential flood risk. The Principal Contractor for the works will be required to sign up to the Environment Agency flood warning and emergency procedures will be put in place in accordance with the Emergency Preparedness Plan (Section 5 of Part A of the CoCP refers). Loose items within the compound or in the laydown areas will be secured or moved to prevent them becoming potential floating debris in a flood event.</p>

Topic <u>a</u> Area		Site <u>s</u> Specific <u>m</u> Measures
Historic Environment	Fencing HE1050	Appropriate fencing will be installed around the windmill mound located to the south of the A14 (HE1050) to avoid impact from construction activities. The selection of the fencing shall be discussed with the relevant local authority and the final details indicated in the CEMP relevant for the phase.
	General Part A measures	The measures set out in Section 7.3, Historic Environment, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Land Quality	Land drains	Land drainage drains will be appropriately reinstated once the pipeline has been installed. New permanent drainage features may also be installed to ensure that land quality is protected in accordance with the requirements set out in the draft DCO Schedule 2 (App Doc Ref 2.1 refers).
	General Part A measures	The measures set out in Section 7.4, Land Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.
Landscape and visual impact	Hedgerows	The hedgerow section removed for works to complete the crossing under the existing railway (near to Fen Road) should be retained for reinstatement in this location.
		Hedgerows to be removed should be translocated under the supervision of an Ecological Clerk of Works (ECoW) during the winter months.
		Hedgerows should be translocated in as large sections as possible to reduce damage to roots. Hedgerows to be translocated should be a minimum of 2m in length and less than 5m wide. Sites where hedgerows are to be translocated should have similar ground conditions to the existing hedgerow site.

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures	
	<p>Hedgerows will be replanted as soon as possible after being excavated from the existing site. In the event that removed hedgerow needs to be temporarily stored a suitable location and care plan will be prepared by a suitably experienced ecologist.</p>	
Water Quality	<p><u>Materials storage in flood zone</u></p>	<p>A site compounds and temporary storage will be required in the flood zone whilst construction place. As far as possible the installation of the pipeline will be carried out in drier months to reduce potential flood risk. The Principal Contractor for the works will be required to sign up to the Environment Agency flood warning and emergency procedures will be put in place in accordance with the Emergency Preparedness Plan (Section 5 of Part A of the CoCP refers). Loose items within the compound or in the laydown areas will be secured or moved to prevent them becoming potential floating debris in a flood event. Any materials or equipment with the potential to result or cause contamination will be stored above the flood level.</p>
	<p><u>Pressure testing fluid</u></p>	<p>The pipeline will be pressure tested with potable water (drinking water) prior to being commissioned to minimise the potential for leakages. Chlorine will be removed before the water is discharged into any land drains. All necessary discharge consents will be obtained and the requirement thereof adhered to.</p>
	<p><u>Groundwater protection</u></p>	<p>In the event that locally excavated materials prove unsuitable for pipe bedding in any sections of the pipeline, a more uniform, sandy or granular material will be used. Additional measures will be used to protect groundwater if required, including the use of clay plugs or partitions (also referred to as clay stanks) across the trench at suitable locations. However, such measures are not expected to be necessary.</p>

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures
	<p data-bbox="600 252 779 327"><u>Private water supplies</u></p> <p data-bbox="817 252 1865 443">There is a private borehole approximately 210 metres from the pipeline. Regular contact will be maintained with the owner during construction. Measures to maintain supply to the property will be put in place if required. These will be outlined in the CEMP. A non-derogation agreement will be entered into with the owners at their request.</p> <hr/> <p data-bbox="600 486 779 635"><u>Cumulative effects – surface water drainage</u></p> <p data-bbox="817 486 1865 593"><u>Should a strategy be required for the management of surface water be required it shall be developed in coordination with adjacent active schemes in particular the Waterbeach station relocation project.</u></p> <hr/> <p data-bbox="600 678 779 746"><u>General Part A measures</u></p> <p data-bbox="817 678 1865 785">The measures set out in <u>Section 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A</u> of the CoCP <u>Part A</u> (App Doc Ref 5.4.2.1) will also be implemented.</p>
Transport and Access	<p data-bbox="600 826 779 901"><u>Construction access</u></p> <p data-bbox="817 826 1865 933">Access to the pipeline route will be as identified in <u>Appendix A, DCO Part 3 Accesses and Their Vehicular Needs, of</u> the CTMP (Appendix 19.7, App Doc Ref 5.4.19.7).</p> <hr/> <p data-bbox="600 976 779 1093"><u>Temporary diversion PRoW</u></p> <p data-bbox="817 976 1865 1204">In order to install the pipeline a number of Public Rights of Way (PRoW) will need to be temporarily stopped up/diverted <u>with gated access</u> – FPR130/6, FPR130/8, FRP130/10, FRP130/16, FRP130/12 and FRP247/10. Full details of the footpaths to be temporarily diverted or temporarily closed along the full length of the pipeline are shown on the Rights of Way Plans (App Doc Ref 4.6) and <u>in Part 3 (Streets) of the DCO application. Schedule 6 of the draft DCO (App Doc Ref 4.1)</u></p> <hr/> <p data-bbox="817 1248 1865 1355">As far as it is practical, controlled crossings will be put in place whilst the works are undertaken to keep PRoW useable thereby minimising diversions. It is not expected that any PRoW will be impacted for more than 1 week with the</p>

Topic <u>a</u> Area	Site <u>s</u> Specific <u>m</u> Measures
	exception of FP130/6 as continued access will be required to the working area to the <u>s</u> outh.
	<p><u>Access to farm holdings</u> Final access arrangements for the following farm holdings will be agreed with the landowner as per the Land Plans (App Doc Ref 4.4), parcel numbers: 012a-012m, 021a-021o, 036a-036d, 037a-037c, 039a-039c, 042a-042f, 044a-044d, 046a-046d and 055a. <u>The agreed details will be included in the detailed CEMP for the phase, to be approved prior to the start of construction.</u></p>
	<p><u>General Part A measures</u> The measures set out in <u>Section 7.6, Traffic and Transport, Part A</u> of the CoCP <u>Part A</u> (App Doc Ref 5.4.2.1) <u>will</u> also be implemented.</p>
<p>Noise and Vibration</p>	<p><u>Noise controls during trenchless techniques</u> There is the potential for some noise disturbance from the construction compound and from activities associated with Horizontal Directional Drill (HDD) where continuous working is required as the drill shot cannot be paused once it is started. Appropriate mitigation to control noise emissions from significant noise emitting construction plant and equipment such as shielding individual items of noisy plant or equipment will be used as required.</p> <p><u>Solid hoarding</u> Solid site hoarding/acoustic barriers provided around Horizontal Directional Drill (HDD) pit locations and HDD plant during continuous working periods. <u>The selection of the hoarding should be made in reference to the guidance on BS5228-1 2009+A1:2014 which provides information on acoustic screens for use in construction sites. Guidance includes information on noise propagation and attenuation together with guidance on the design of acoustic screens.</u></p> <p><u>The</u> Waterbeach compound will require sections of solid hoarding/screening will be required along the boundaries facing nearest receptors in Waterbeach on Capper Road and off Burgess Drive. Western and southern boundaries only to mitigate impacts of noise. <u>The selection of the hoarding should be made in</u></p>

Topic <u>a</u> Area	Site <u>s</u> Specific <u>m</u> Measures
	<p><u>reference to the guidance on BS5228-1 2009+A1:2014 which provides information on acoustic screens for use in construction sites. Guidance includes information on noise propagation and attenuation together with guidance on the design of acoustic screens.</u></p> <p><u>Settlement monitoring</u></p> <p><u>Settlement monitoring of the major infrastructure crossings i.e. the railway and A14 will be carried out if required by Network Rail/National Highways in accordance with the protective provisions of the DCO and any associated asset protection agreements entered into with them. Settlement monitoring of the major infrastructure crossings i.e. the railway and A14 will be carried out if required by Network Rail/National Highways in accordance with the protective provisions of the DCO.</u></p> <p><u>The measures set out in Part A of the CoCP (App Doc Ref 5.4.2.1) will also be implemented.</u></p> <p>General Part A measures</p> <p>The measures set out in <u>Section 7.7, Noise and Vibration</u>, of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
<p>Odour</p>	<p><u>Cumulative effect – odour</u></p> <p>During works to connect to the pumping station there may be a need to open up parts of an existing sewerage network to the open air which can result in new odour releases which may be smelt at nearby receptor locations. Any odour releases from this connection would be very temporary. <u>Regular site inspections by the person accountable for odour issues on site will be undertaken during this work to minimise the risk of causing nuisance and/or loss of amenity i.e. through specifying corrective actions / ceasing works. An inspection log will be kept and made available to the overseeing authority on request.</u></p>

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures
Air Quality	<p data-bbox="600 252 775 279"><u>Dust controls</u></p> <p data-bbox="817 252 1823 363">In order to mitigate the impacts from open cut installation of the Waterbeach pipeline which includes soil stripping and stockpiling activities, the following mitigation measures will be implemented:</p> <ul data-bbox="949 391 1881 853" style="list-style-type: none"> <li data-bbox="949 391 1881 582">• Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary; <li data-bbox="949 587 1881 699">• Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked; and <li data-bbox="949 703 1881 853">• Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
Waste Management	<p data-bbox="600 879 790 954"><u>General Part A measures</u></p> <p data-bbox="817 879 1850 954">The measures set out in Section 7.8, Air Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p> <p data-bbox="600 991 790 1066"><u>General Part A measures</u></p> <p data-bbox="817 991 1850 1102">No site specific measures required. The measures set out in Section 7.9, Waste Management and Resource Use, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented.</p>
Cumulative Effects	<p data-bbox="600 1145 779 1332"><u>Coordination for the management of cumulative effects</u></p> <p data-bbox="817 1145 1861 1332">Any site specific measures required as a result any overlapping Waterbeach New Town Train Station, Waterbeach New Town and Waterbeach New <u>T</u>own East construction activities will be included within a detailed CEMP and associated CTMP. These measures will be developed and agreed through engagement with the developers of relevant schemes.</p>

3.5 Existing Cambridge Waste Water Treatment Plant

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
Site Set Up and General Arrangements	Site Set Up, Security and Safety	The measures set out in Section 5, Site Set Up and General Arrangement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented in relation to all mobilisation, construction, and decommissioning activities.
	Site Lighting	Temporary LED tower lights approximately 8 metres in height will be used whilst the works are undertaken, especially around shaft 3. Lighting levels will not exceed 200 lux.
	Working Hours	Core working hours, winter and summer, continuous working (for the railway crossing, over pumping call out and tunnel construction) and out of hours working will be undertaken.
	Community Engagement	<p>The measures set out in Section 3, Community and Stakeholder Engagement, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p> <p>Engagement will be undertaken with the Local Highway Authority and local community with regard to the rising and gravity main diversions adjacent to Cowley Road.</p> <p>The measures set out in Sections 4.3 Considerate Constructors Scheme, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</p>
Ecology and Nature Conservation	CiWS	A section of ornamental hedgerow removal will be required outside the Milton Road Hedgerows City Wildlife Site (CiWS). This will be replanted using native species to provide enhancement to the CiWS, and continued ecological functionality.

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
	General Part A measures	<p>A section of ornamental hedgerow removal will be required outside the Milton Road Hedgerows City Wildlife Site (CiWS). This will be replanted using native species to provide enhancement to the CiWS, and continued ecological functionality.</p> <p>No other site specific measures <u>are</u> required.</p> <p>The measures set out in Sections 5.9, Site Lighting and 7.2, Ecology and Nature Conservation, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) -will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p>
Historic Environment	General Part A measures	<p>No site specific measures required.</p> <p>The measures set out in Section 7.3, Historic Environment, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) -will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p>
Land Quality	Decommissioning	<p>Any further site-specific measures will be identified in the approved Decommissioning Plan which is currently provided as an outline document as part of the DCO application to be prepared to align with the (Outline Decommissioning Plan (Application Document Reference 5.4.2.3). The detailed CEMP should cross refer to relevant measures within the approved Decommissioning Plan.</p>
	General Part A measures	<p>The measures set out in Section 7.4, Land Quality, Part A of the CoCP Part A (App Doc Ref 5.4.2.1) -will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p>
Water Quality	Decommissioning	<p>Any further site-specific measures will be identified in the approved Decommissioning Plan which is currently provided as an outline document as part of the DCO application (to align with the Outline Decommissioning Plan (Appendix 2.3, App Doc Ref 5.4.2.3). The detailed CEMP should cross refer to the relevant measures within the approved Decommissioning Plan.</p>

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
		<p><u>The existing outfall to the river Cam will be stopped up as part of decommissioning activities for the purpose of permit surrender.</u></p> <p><u>General Part A measures</u></p> <p>The measures set out in <u>Sections 5.6, Emergency procedures and preparedness plan, and 7.5, Water resources and flood risk, Part A</u> of the CoCP <u>Part A</u> (App Doc Ref 5.4.2.1) -will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p>
Transport and Access	<u>Access</u>	<p>Access will be as identified in the <u>detailed CTMP for the phase. This will be prepared in accordance with the A-CTMP is included as part of the DCO application</u> (Application Document Reference 5.4.19.7).</p>
	<u>Cowley Road temporary traffic management</u>	<p>Short<u>Short-term t</u>Temporary traffic management measures, <u>such as temporary traffic signal control to manage vehicles, pedestrians or other non-motorised users diversion and measures</u> (subject to agreement with the <u>Local Highway Authority (LHA)</u> for pedestrians and other non-motorised users, -may be required on Cowley Road whilst the existing mains are diverted.</p>
	<u>Vehicle movement controls</u>	<p>Vehicle movements related to all mobilisation, construction, and decommissioning activities within the existing Cambridge WWTP will be controlled by an approved CTMP -A in accordance with the -CTMP is included as part of the DCO application (Application Document Reference 5.4.19.7).</p>
	<u>General Part A measures</u>	<p><u>The measures set out in Section 7.6, Traffic and Transport, of the CoCP Part A (App Doc Ref 5.4.2.1) will also be implemented.</u></p>
Noise and Vibration	<u>General Part A measures</u>	No site specific measures required.

Topic aArea

Site specific mMeasures

The measures set out in [Section 7.7, Noise and Vibration, Part A](#) of the CoCP [Part A \(App Doc Ref 5.4.2.1\)](#) will be implemented in relation to all mobilisation, construction, and decommissioning activities.

Odour

[Odour control tie in transfer tunnel to existing network](#)

Odour may be released when connecting the new transfer tunnel to the existing sewerage and when the existing waste water flows are diverted to the proposed Cambridge WWTP during construction. The action of opening up existing sewers may result in temporary odour releases. This is not expected to last for a period of more than four weeks. In order to mitigate this potential impact an air extraction system will be put in place and a mobile odour filtration unit located adjacent to the sewer shafts.

[Inspection log](#)

To ensure effective odour control during the tie in works, regular site inspections by the person accountable for odour issues on site will be undertaken to minimise the risk of causing nuisance and/or loss of amenity. An inspection log will be kept and made available to the overseeing authority on request.

[Decommissioning - Managing residual sludge](#)

As set out in CoCP Part A (App Doc Ref 5.4.2.1), an Outline Decommissioning Plan has been prepared (Appendix 2.3, App Doc Ref 5.4.2.3). During the decommissioning process tanks will be drained through the existing treatment process as far as reasonably practical. Any residual sludge that cannot be pumped to the sludge treatment process within the primary settlement tanks, aeration tanks or final settlement tanks will be removed via suction pump and either taken offsite for treatment or treated onsite via a temporary pasteurisation process such as a quick lime dosing plant. These processes are often sealed, however the resulting cake can be odorous. This cake will remain on site for as little time as possible. Odour suppression equipment will be utilised where appropriate to minimise any offsite impacts.

Topic <u>a</u> Area	Site <u>s</u> pecific <u>m</u> Measures
	<p>Any further site-specific measures will be identified in the approved Decommissioning Plan which is currently provided as an outline document as part of the DCO application (Outline Decommissioning Plan, Application Document Reference 5.4.2.3). <u>The detailed CEMP should cross refer to relevant measures within the approved Decommissioning Plan.</u></p> <p>During decommissioning of the sludge treatment centre all sludge tanks will be emptied and treated through the existing process as far as reasonably practical. Residual sludge or grit will be removed via suction pump. Sludge will and either treated offsite or within an onsite treatment process as above. This process, along with the above, will be for relatively short interventions. Grit will be removed off site and the wash water pumped to the existing wastewater treatment process on site for treatment.</p>
	<p><u>Sludge transport or seeding</u></p> <p>The sludge required to begin biological treatment (seeding) will be transported from the existing Cambridge WWTP in sealed tankers and pumped into the tanks through a closed process, minimising the likelihood of odour release to air. Any further site-specific measures will be identified in the approved Decommissioning Plan which is currently provided as an outline document as part of the DCO application (to be prepared to align with Outline Decommissioning Plan Application Document Reference 5.4.2.3). <u>The detailed CEMP should cross refer to relevant measures within the approved Decommissioning Plan.</u></p>
<p>Air Quality</p>	<p><u>General Part A measures</u></p> <p>No site specific measures are require.</p> <p>The measures set out in <u>Section 7.8, Air Quality, Part A</u> of the CoCP <u>Part A</u> (App Doc Ref 5.4.2.1) -will be implemented in relation to all mobilisation, construction, and decommissioning activities.</p>

Topic <u>a</u> Area		Site <u>s</u> pecific <u>m</u> Measures
Waste Management	<u>General Part A measures</u>	<p><u>No site specific measures required.</u></p> <p><u>The measures set out in Section 7.9, Waste Management and Resource Use, of the CoCP Part A (App Doc Ref 5.4.2.1) will be implemented in relation to all mobilisation, construction, and decommissioning activities.</u></p>
Cumulative Effects	<u>Coordination for the management of cumulative effects</u>	<p>Any site specific measures required as a result any overlapping construction activities associated with developments that could give rise to cumulative effects will be included within a detailed CEMP <u>and associated CTMP</u>. These measures will be developed and agreed through engagement with the developers identified through a review of emerging developments whereby their construction could overlap with the construction of the Proposed Development. <u>This is set out in CoCP Part A (App Doc Ref 5.4.2.1) , section 3, community and stakeholder liaison.</u> These include but may not be limited to the Vitrum Building St Johns Innovation Park Cowley Road, Redevelopment of the existing car showroom 59 Cowley Road, Taylor Vinters Merlin Place 460 Milton Road Cambridge Cambridgeshire, Cambridge Science Park Milton Cambridge South Cambridgeshire CB4 0WA.</p>

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5 List of Abbreviations

Anglian Water Services	Anglian Water Services Limited
BAPA	Basic Assessment Protection Agreement
BPG	Best Practice Guidance
BPM	Best Practical Means
BS	British Standard
CCS	Considerate Contractor's 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/>