



**Application for Development Consent Order
PLANNING ACT 2008**

CAMBRIDGE WASTE WATER TREATMENT PLANT RELOCATION

Statement of Requirement

Anglian Water Services Limited

Revised September 2019

EXECUTIVE SUMMARY

Outlined below is a summary of the key drivers for the Cambridge Waste Water Treatment Plant Relocation Project ("The Project").

1. Anglian Water Services Limited ("AWS") will seek a Development Consent Order ("DCO"), from the Secretary of State for the Environment, Food and Rural Affairs to construct, operate and maintain a new waste water treatment plant to replace its existing waste water treatment plant ("WWTP") on the Cowley Road, on the outskirts of Cambridge.
2. The Project is needed in response to the planned growth of Greater Cambridge and its surrounding region which relies on the redevelopment of the whole WWTP site for a residential development led regeneration of the area known as Cambridge Northern Fringe East ("CNFE"), along with the Waterbeach New Town Development on the former RAF Waterbeach Station site¹.
3. The regeneration of CNFE has long been identified by Cambridge City Council ("City Council"), South Cambridgeshire District Council ("SCDC") and Cambridgeshire County Council, ("Host Authorities") and is supported by the Cambridge Local Plan 2018 and the South Cambridgeshire Local Plan 2018. In addition, the National Infrastructure Commission 2017 report emphasised national prioritisation of the Cambridge - Milton Keynes - Oxford growth arc in advancing prosperity in the United Kingdom.
4. Greater Cambridge has the potential to underpin this prioritisation as the fastest growing city economy in the United Kingdom in 2018. Inclusive growth is, however, an acute challenge for the area with an under supply of housing and house prices more than thirteen times the average salary, putting prosperity at risk.
5. The Project was prioritised by the Cambridgeshire and Peterborough Combined Authority to apply for funding from the Housing Infrastructure Fund ("HIF") in September 2017. The bid was submitted by the Combined Authority for Peterborough and Cambridgeshire with support from AWS, local Members of Parliament, Host authorities and other key stakeholders.

¹ Waterbeach New Town, A Spatial Framework and Infrastructure Delivery Plan, Supplemental Planning Document, Adopted February 2019 South Cambridgeshire District Council

6. This bid was successful and HIF funding was awarded for the Project in March 2019. This funding will be used to relocate and construct a new waste water treatment plant, thereby unlocking the regeneration of CNFE.

7. CNFE includes the existing WWTP on the Cowley Road site and adjacent land owned by the City Council. The redevelopment of the whole of CNFE could potentially deliver in excess of 8,000 new homes along with 20,000 jobs over the next 20 years. Approximately 5,600 of the new homes would be built on the WWTP site itself. This new housing will be within walking and cycling distance of thousands of jobs at the Cambridge Science Park, and the Cambridge North Railway Station and other public transport.

8. This housing will play an important role in securing the sustainable and continued success and growth of the nationally important city and region of Cambridge. The relocation of the WWTP is the basis for the transformation of CNFE to support Greater Cambridge's continued sustainable growth and help meet the ambition of Cambridgeshire and Peterborough Combined Authority to double the Regional Gross Value Added (GVA) by reinforcing Cambridge's position as a global centre of excellence for research, development and business success. The relocation will release brownfield land for development and reduce pressure for major housing development elsewhere in Greater Cambridge.

Purpose of Statement

9. The relocation of the WWTP requires the identification of a new site. This Statement of Requirement describes what is required from a new waste water treatment plant from a technical, process and operational perspective to inform the subsequent site selection process.

Background to The Project

10. The WWTP cannot remain at the existing site and still release a significant area of brownfield land for residential development even if it is reconfigured with a reduced footprint. If the WWTP was reduced in size, redevelopment of the remaining area would be restricted, particularly for residential development because of the necessary safeguarding imposed around it. AWS' experience of residential development close to waste water treatment plants would preclude it from allowing such a scenario to happen.

11. A safeguarding area of 400 metres exists around all waste water treatment plants in Cambridgeshire and Peterborough². Where new development is proposed within

² The buffer is defined within the policies that relate to potential odour impacts on residential amenity namely the Cambridgeshire and Peterborough Minerals and Waste core strategy 2011.

the safeguarding areas involving buildings which would normally be occupied, the associated planning application must be accompanied by an odour assessment report. These measures are intended to assist in minimising the impact of odour, noise and other adverse environmental effects and ensure the waste water treatment works is protected for future growth. AWS also has its own, internal encroachment policy which adopts the same safeguarding areas.

12. Relocating the WWTP removes these restrictions imposed on the site by its safeguarding area, enabling a full range of land uses to be considered across the AWS land, including residential development.
13. The Project should also be capable of accommodating the growth within the Waterbeach catchment arising from the development of Waterbeach New Town, which is predicted to be over a similar timescale. This expansion comprises over 10,000 new dwellings. AWS has a statutory duty to effectively treat the waste water generated by this new growth. In relation to the connection of the Waterbeach New Town development, two scenarios are available.

Scenario 1 – in which the new waste water treatment plant only treats waste water flows from the existing Cambridge catchment, and a separate Waterbeach, Water Recycling Centre (“WRC”) which will treat waste water flows from the Waterbeach catchment, is built; and,

Scenario 2 – in which the new waste water treatment plant treats the combined Cambridge and Waterbeach catchments waste water flows, removing the need for a separate, new, Waterbeach WRC. Waste water flows from the Waterbeach catchment would be transferred by separate pumped transfer (pumping station and pipeline) from the Waterbeach catchment to the new waste water treatment plant.

14. AWS originally adopted Scenario 1 and continued to develop a waste water strategy for Waterbeach New Town based upon a new Waterbeach WRC to the east of the existing Waterbeach WRC.
15. AWS submitted a pre-application enquiry in respect of this proposal to Cambridgeshire County Council (“CCC”) in May 2019. In September 2019 a response was received from the CCC. This advised that the proposed location of the new Waterbeach WRC could not be supported at that point. The Environment Agency also had concerns relating to the flood risks and advised that instead of a new Waterbeach WRC, in their opinion, the only feasible and deliverable option was to take flows, via a pumped transfer pipeline, to either (the existing Cambridge) WWTP for treatment or if this was relocated to the new waste water treatment plant
16. No further work was under taken by AWS to advance the design or planning application for a new Waterbeach WRC and, on 11 September 2019, the AWS Interim CWWTPR Programme Board decided to align the new Cambridge waste

water treatment plant project with the requirements for a new Waterbeach WRC and, therefore, not to build two new waste water treatment plants. The connection of the existing Waterbeach catchment and the New Town Development to the Project would enable waste water flows to be treated at a single waste water treatment plant. This represents operational and capital cost efficiencies and carbon cost reduction.

The WWTP

17. The WWTP serves, and must continue to serve, the Cambridge catchment. The extent of this catchment includes areas currently connected and unconnected to the sewerage. Connected areas are those connected to AWS' sewerage network and drain to the WWTP for treatment. Unconnected areas within the catchment are currently without sewerage but have the potential to become connected to the sewerage network within the Cambridge catchment. This could happen as the result of a successful application to AWS' first-time sewerage programme (under section 101A Water Industry Act 1991) or as a result of growth.
18. The WWTP occupies approximately 40 hectares of land to the south of the A14 and between Cambridge Science Park to the west and Cambridge North Station to the east.
19. Beyond the railway is the River Cam, to which treated effluent from the WWTP is discharged via a discharge point. The discharge is regulated by the Environment Agency.
20. The WWTP comprises waste water treatment processes ("Cambridge WRC") and an integrated sludge treatment centre ("Cambridge STC"). The Cambridge STC integrates both sludge treating components and combined heat and a power plant ("CHP") into the overall waste water treatment process. Together, or when integrated, these elements form the WWTP.
21. Waste water is received at the WWTP from the Cambridge catchment sewerage network at its inlet works. From this point, the waste material and foul water are subjected to a number of processes to produce treated water and residual material that is capable of being safely returned to the wider environment. Treated water is returned to the River Cam at the discharge point and residual material, in the form of biosolids, are used in agriculture and, in the form of methane, is used to power the WWTP or exported to the electricity grid.
22. A new waste water treatment plant is required to continue to effectively drain and treat the waste water, sludge and liquid imports arising from the Cambridge catchment in a similar integrated process that meets the required regulatory and environmental standards.

Project Elements

23. Early design assumptions have been made for the Project to identify land area requirements. These assumptions are based upon the connected population equivalent ("PE") that needs to be served, together with an element of growth, full flow to treatment, storm storage and the integrated sludge treatment process. The early design assumptions are also based upon a process capable of meeting the current Environment Agency's Permit Standards.
24. The capacity to deal with the waste water from the Cambridge catchment (together with an element of growth) and the capacity for the integrated STC, equates to a PE of 548,000. The requirement is, therefore, for a waste water treatment plant with a total overall PE in excess of 500,000.
25. AWS calculates the additional growth capacity by using a combination of analysing the Local Plan, which provides a view of likely developments over the plan's period, and a local growth forecast.
26. The current Development Plan period is until 2031, and so forms the basis for the short-term forecast of additional capacity required. As the City Council and South Cambridgeshire District Council review their plans, AWS are working with both local authorities to ensure AWS' future plans include any growth proposed through the local plan system.
27. For Waterbeach New Town, the amount of additional capacity has been calculated from the build out rate of the two developments, with the assumption that 3,000 properties will be built by mid 2030, with the remaining 7,000 properties built over the following 15 years. These developments alone will add an additional 10,000 properties to the existing Waterbeach catchment by 2050.
28. The land requirement for a new waste water treatment plant to treat in excess of 500,000 PE would be in the region of 22 hectares, not including road access to the site or any necessary landscaping or other mitigating requirements.
29. The early design assumptions for the processes required within the new waste water treatment plant are based on known successful waste water treatment processes, including the following.

- New Road Access into WWTP Location,
- Incoming sewer
- Pumping station
- Storm storage and settlement tank
- Preliminary treatment (screening and grit removal)
- Primary settlement
- Biological treatment
- Final settlement
- Tertiary Treatment
- Pumping station
- Outfall to watercourse
- Sludge reception
- Enhanced pre-digestion treatment
- Biogas storage for renewable energy generation

Anaerobic digestion
Post-digestion treatment and de-watering
Treated sludge bio-fertiliser
Offices/Welfare Building(s) and Car Parking

30. The new site area also needs to accommodate the necessary connecting infrastructure which includes, but is not limited to, the following.
 - a. A new drive shaft to enable a connecting tunnel back to the WWTP. On completion, the shaft would be retrofitted as the new terminal pumping station.
 - b. A new final effluent tunnel/pipeline from the new site to an outfall into the River Cam.
 - c. Connecting infrastructure for Waterbeach.
 - d. The potential to divert and connect any existing assets which would aid to the operational efficiency of the scheme.
31. Any land areas identified should then be assessed to take account of operational, environmental, planning, economic and community factors.

CONCLUSIONS

32. Cambridge is a distinct economy generating growth nationally. The need for additional land to deliver much needed housing is reflected and supported by national, regional and local planning policies.
33. The delivery of development in the CNFE is reliant upon the relocation of the WWTP. This will help to meet anticipated housing growth resulting from population increase, and to enable future prosperity, continued economic growth, regeneration and business expansion for Greater Cambridge.
34. The first stage of the Project is to identify an appropriate site or sites, to accommodate the design assumptions set out above for the relocation of the WWTP.
35. There is a first stage requirement by AWS for a site selection study to identify a suitable site for the relocation.

PROJECT GLOSSARY AND ABBREVIATIONS

AAP	Area Action Plan	Policy document setting out area specific visions and planning policies for key regeneration areas.
AWS	Anglian Water Services Limited	The statutory waste water and water undertaker, licensed by OFWAT to operate within the east of England and regulated under the Water Industry Act 1991.
City Council	Cambridge City Council	The local authority for the City of Cambridge.
CNFE	Cambridge Northern Fringe East	Area for re-development between Cambridge Science Park and Cambridge North Station.
CSP	Cambridge Science Park	A concentration of science and technology related businesses founded by Trinity College Cambridge to create a world leading technology centre.
DCO	Development Consent Order	Order under which the relevant Secretary of State can grant consent for construction of a Nationally Significant Infrastructure Project, on the advice of the Planning Inspectorate, under the Planning Act 2008.
HIF	Housing Infrastructure Fund	A government capital grant programme of up to £2.3 billion, for new infrastructure, intended to unlock sites in areas of greatest housing demand.

PE	Population Equivalent	Calculation in waste water monitoring and treatment to calculate the amount of treatment required per person discharging waste water in terms of oxygen demand.
SCDC	South Cambridgeshire District Council	The local authority for the administrative district of South Cambridgeshire.
WRC	Water Recycling Centre	<i>The facility that operates the process of removing contaminants from wastewater and household waste water to produce environmentally safe, effluent to return to the watercourse.</i>
STC	Sludge Treatment Centre	An integral part of the process of a WWTP, usually incorporated into the overall process of removing contaminants from wastewater and household waste water to produce environmentally safe, "sludge" or bio solid for re use or disposal.
WWTP	Cambridge Waste Water Treatment Plant	The existing waste water treatment plant at Cowley Road, owned and operated by AWS.