

**Oxfordshire County Council (Didcot Garden Town Highways Infrastructure –
A4130 Improvement (Milton Gate to Collett Roundabout), A4197 Didcot to
Culham Link Road, and A415 Clifton Hampden Bypass) Compulsory Purchase
Order 2022**

SUMMARY STATEMENT OF EVIDENCE

**JOHN PATON
INTERIM SYSTEM PLANNING LEAD (WASTEWATER)
THAMES WATER UTILITIES LIMITED**

OPERATIONAL IMPACT

1. **QUALIFICATIONS AND EXPERIENCE**

- 1.1 My name is John Paton, I am the Interim System Planning Lead for Wastewater within the Asset Strategy and Planning business function at Thames Water Utilities Limited ("TWUL"). I am an Associate Member of the Institution of Chemical Engineering (IChemE). Since June 2023, I have been the Interim System Planning Lead for the Thames Valley and Home Counties region of Thames Water's Wastewater Estate. Culham Sewage Treatment Works ("Culham Works") is a rural treatment site within the Thames Valley and Home Counties region. It is my team's responsibility to plan for the provisions of assets that can deliver the performance required.

2. **INTRODUCTION AND SCOPE OF EVIDENCE**

- 2.1 The scope and structure of my statement of evidence is set out in this section.

3. **BACKGROUND**

- 3.1 Under section 94 of the Water Industry Act 1991 ("WIA 1991"), TWUL has a duty as a sewerage undertaker to provide and improve our sewerage. TWUL's status as a Water and Sewerage Company ("WaSCs") means that it is a Statutory Undertaker for the purposes of sections 16 and 17 of the Acquisition of Land Act 1981 ("ALA 1981"). Environmental Permits ("the Permit") are issued to TWUL by the Environment Agency ("the EA") under powers conferred by the Environmental Permitting (England and Wales) Regulations 2016. The permit for Culham Works outlines the specific requirements that must be met in order to discharge final effluent to the environment. If the Order was confirmed, it could lead to TWUL being in breach of the Permit for the Culham Works which would be detrimental to TWUL's ability to deliver on our duties under the WIA 1991.

4. **REGULATORY PRICE CONTROL PERIODS**

- 4.1 As a WaSC, TWUL is required to submit to the economic regulator Ofwat, a 5-year business plan, in the 2025-2030 plan TWUL has requested an allowance of over £350 million to invest in sewage treatment work catchments to address population growth projected across the Thames Water Estate. Ofwat's final determination, expected in December 2024, will decide whether or not it agrees with the business plan submitted by each WaSC and depending on the outcome of the final determination, TWUL would be looking to use this funding to upgrade 15 STWs in Asset Management Period 8, including the Culham Works.

5. **ENVIRONMENTAL PERMITTING**

- 5.1 The permits issued by the EA to WaSCs are issued to safeguard the environment. The key performance requirements in the permit for Culham Works include quality

parameters, restrictions on the volume of flow to be treated each day and in wet weather, sample requirements including the number to be taken and the location to ensure the treatment process is providing the required level of treatment to the limits in the Permit. The sampling point for final effluent at Culham Works occurs when all treatment processes are complete and before the flow is discharged to the environment.

6. THE CULHAM WORKS AND ITS CATCHMENT AREA

- 6.1 The catchment area for the Culham Works comprises Berinsfield, Culham, and Clifton Hampden villages and the Culham Science Centre. The Works currently treats flows from a population equivalent ("PE") of approximately 4,000, a 'PE' is a measure of the flows and biological load received at the STW, accounting for domestic population, business and commercial premises and well as transient populations associated with tourism etc. Culham Works operates at a treatment capacity suitable for the PE it currently serves in compliance with the Permit.
- 6.2 Culham Works is currently able to treat the foul flows that it receives from its drainage catchment, meeting the quality parameters set out in its permit. Any increases, however, in trade or domestic flow would require an assessment to understand if they will exceed the capability of the STW to meet its permit conditions.
- 6.3 The Culham Works would not be capable of handling the forecast demand without upgrade works.

7. THE CURRENT TREATMENT PROCESS AT THE CULHAM WORKS

- 7.1 Sewage is pumped to Culham Works from three terminal pumping stations in the catchment. Upon arrival, screening equipment is used to capture debris from the flow. The primary stage of treatment consists of settlement tanks and the secondary stage of treatment consists of a combination of biological treatment and settlement. Once the final settlement is complete, final effluent monitoring and sampling is carried out before the flow is discharged to the environment.

8. PLANNING FOR POPULATION GROWTH

- 8.1 A key driver for investment to accommodate growth is determining whether our assets have the capacity to deliver treatment to the required performance level outlined in the Permit with increased flow arriving at the treatment works. TWUL submitted a plan for upgrades in 15 STW catchments. TWUL published a 25-year Drainage and Wastewater Management Plan, which outlines both environmental performance improvements across the entirety of the wastewater lifecycle and a generic optioneering framework to determine solutions to issues such as population growth. Once it is determined that the Culham Works would not be

able to deliver the required environmental performance with the current treatment capacity, the next step is to understand what the most appropriate solution would be. Table 12 of the Draft Enhancement Case summarises the main option types that were considered to meet TWUL's need at the 15 sites including Culham Works.

9. **POPULATION GROWTH IN THE CULHAM CATCHMENT AREA**

- 9.1 There are two large developments proposed that have allocations for housing in the Local Plan. These are the *Land adjacent to Culham Science Centre* and *Berinsfield Garden Village*. The land around the Culham Science Centre is expected to deliver approximately 3,500 new homes with occupation in 2029, land at Berinsfield is also expected to provide around 1,700 new homes with occupation in 2030. As a result, the population within the catchment area is expected to increase by approximately 46% by 2031, with an increase from circa 4,000 PE to over 5,800. The PE for the Culham Works to be circa 10,500 by 2036, an increase of 162% from the current estimated PE for the Culham Works. This is the highest projected percentage increase of any asset across TWUL's estate.

10. **PREFERRED SOLUTION TO ACCOMMODATE FOR POPULATION GROWTH IN THE CULHAM CATCHMENT**

- 10.1 Upgrades of the Culham Works are required to respond to growth projections, process the increased volume of flow, comply with permit quality parameters, and to minimise harm to the environment from premature discharges from storm tanks among other reasons. The preferred solution, is to increase the Works capacity by extending the existing operational equipment, enabling TWUL to make use of approximately 90% of the land already owned by TWUL within Culham Works, providing treatment capacity to 2036 and spending customer's money appropriately. The proposed upgrades will commence within the next 2 to 5 years to ensure that the upgrades are delivered ahead of 2031.

11. **IMPACT ON TWUL'S OPERATION AS A STATUTORY UNDERTAKER**

- 11.1 The land which the Acquiring Authority is seeking to permanently acquire are the land at the rear and the land at the front of Culham Works, both areas are required in order for TWUL to carry out our duties as a statutory undertaker, whilst meeting the need for the growth in the Culham Works catchment area up to 2036.
- 11.2 If the Order were to be confirmed, TWUL would lose access to the land where these assets are contained, and they would need to be moved. However, TWUL would not be able to move the discharge, monitoring, and sampling points without prior engagement with the Environmental Agency who agree the final discharge point location. Therefore, loss of the land at the rear of the Culham Works would introduce the risk of TWUL being in breach of the permit's current requirements, which could lead to TWUL's prosecution by the EA. The land at the front of the

Works is essential for future expansion in order to accommodate for increased flows as a result of population growth.

- 11.3 As a statutory undertaker TWUL are required to provide an adequate sewerage system so we need to upgrade our assets informed through assessments of current performance and future planning. If land could not be obtained upon agreement, TWUL may need to rely on use of CPO powers to acquire land which could delay our ability to deliver upgrades and would inhibit our ability to deliver our statutory duty. If the Order is confirmed, such that TWUL has to acquire alternative land through compulsory acquisition to facilitate the upgrades, TWUL would not be able to meet this timeframe. Confirmation of the Order will result in the permanent acquisition of the land identified for the upgrade of the Culham Works, therefore preventing the implementation of TWUL's preferred solution for meeting growth within the catchment. If development was to be delivered as planned within the catchment, the inability to upgrade the Culham Works as proposed could result in flooding, increased storm overflow events, events that result in breach of the site's statutory permit and non-compliance with the site's quality parameters resulting in financial penalties and environmental harm. Taking into account the evidence presented in my statement the Order could cause serious detriment to TWUL's customers and the environment, and we would not be able to execute our statutory responsibilities effectively.

12. **SUMMARY AND CONCLUSIONS**

- 12.1 Taking into account the evidence presented earlier in my statement the Order (CD:H.1) could cause serious detriment to TWUL's customers and the environment, and we would not be able to execute our statutory responsibilities effectively.
- 12.2 Defra's section 16 representation states that they, "would like to request that [the Inspector] do[es] not proceed to make the Order whilst it includes the land required by Thames Water for expansion of the Culham Works and the land in parcel 17/11i which is already required as part of Thames Water's daily operational activity".

13. **DECLARATION**

- 13.1 I believe that the facts stated in this statement of evidence are true and I confirm that the opinions expressed in this statement of evidence are my true and professional opinions.



JOHN PATON
TUESDAY 30TH JANUARY 2024