Teddington Direct River Abstraction

Preliminary Environmental Information Report
Appendix 13.5 – Air Quality Positive Statement

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Appendix 13.5 – Air Quality Positive Statement

A.1 Introduction

A.1.1 Air quality positive is a process of identifying ways to improve development beyond compliance with air quality neutral. The London Plan policy SI 1 (Improving air quality) (Greater London Authority (GLA), 2021) requires that an Air Quality Positive statement be prepared to support large-scale development proposals. This Air Quality Positive statement demonstrates how the Teddington Direct River Abstraction (TDRA) Project (hereafter, 'the Project') has maximised air quality benefits and minimised exposure to air pollution following the approach in the Air Quality Positive London Plan Guidance (GLA, 2023).

A.1.2 The Project is a drought resilience scheme that would provide additional water capacity to London during certain conditions. The Project would operate intermittently and would only supply up to the maximum 75 megalitres of recycled water per day (Ml/d) when required. Modelling scenarios have indicated that the Project would typically operate during low flow periods in the River Thames and on average once in every two years, primarily between the months of August and November.

A.1.3 The Project involves a new abstraction site on the River Thames close to Teddington Weir. The abstracted water would be transferred to Lockwood Pumping Station, part of Thames Water's Lee Valley reservoirs in north-east London, and replaced by recycled water from a new tertiary treatment plant (TTP) within the existing Mogden Sewage Treatment Works (STW). The Project comprises the following principal components:

a. A new TTP constructed on a platform above some of the existing storm tanks at Mogden STW to process a portion of the final effluent with an output of up to 75Ml/d of recycled water

b. A tunnel boring machine drive shaft and recycled water interception shaft at Mogden STW site

c. A new recycled water conveyance tunnel with an approximate 3.5m internal diameter, between Mogden STW and the Burnell Avenue site for the transfer of up to 75Ml/d of recycled water between the TTP and the outfall discharge infrastructure

d. An intermediate shaft at Ham Playing Fields site

e. A recycled water conveyance tunnel reception shaft and connecting conveyance pipe to the outfall structure for the discharge, located on land to the south of the Burnell Avenue site

f. A new outfall structure for discharging up to 75Ml/d of recycled water, located either on the bankside or near the bankside in the River Thames upstream of Teddington Weir

g. A new abstraction intake structure, which will take up to 75Ml/d of raw water from the River Thames. This is located on the bankside or near bankside in-

river of the River Thames, approximately 180m upstream of the new outfall structure.

h. A new abstraction connection shaft and raw water conveyance pipeline connecting to the existing TLT. Two options are considered for the TLT connection.

A.2 Constraints and opportunities

Baseline

A.2.1 The Project is located within three different local authority areas. These comprise: the London Borough of Hounslow (LBH) (Mogden STW site); the London Borough of Richmond upon Thames (LBR) (intermediate and reception shaft and outfall); and the Royal Borough of Kingston upon Thames (RBK) (intake and TLT connection shaft). All three local authorities have declared their entire borough as an Air Quality Management Area (AQMA) due to exceedances of the annual mean and 24-hour mean air quality objective (AQO) for nitrogen dioxide (NO_2) and/or particular matter (PM_{10}), respectively due to road traffic emissions. All three local authorities also have several Air Quality Focus Areas (AQFAs) designated by the GLA. LBH has five AQFAs, LBR has four AQFAs and RBK has two AQFAs. The closest AQFA to the Project is Twickenham Town Centre located in LBR, 300m away from the above ground sites of the Project.

A.2.2 Although the AQMAs were declared due to exceedance of AQOs, there are currently no exceedances of any of the AQOs for NO_2 and/or PM_{10} within the study area for the most recent year (2023).

A.2.3 The Project is located within three AQMAs and near to several AQFAs..

Sources of pollution

A.2.4 The Project is in an area where air quality is dominated by emissions from road traffic. Marine transport is also another source of local air pollution as the Project is adjacent to the River Thames.

Sensitive receptors

A.2.5 A summary of the nearby sensitive receptors to the Project is provided in Table 13.7 of Chapter 13: Air Quality; it includes ecological sites, residential properties, schools, hospitals and care homes. The study areas consist of sensitive receptors and several AQFAs which have been designated for high exposures of NO_2, but the air quality limit for NO_2 is now being achieved.

Measures adopted

A.2.6 Measures that contribute to the delivery of Air Quality Positive have been assessed under four key themes and are described in Table A.1.

Table A.1 Air Quality Positive Measures

Measure	Summary of measure	Reason for undertaking measure	Expected benefits	Assessment methods	Quantitative report	Qualitative report	How will this measure be secured?
Better design and reducing exposure							
Shaft and route reduction	The number of shafts required during the construction of the tunnel and the length of the tunnel route was reduced	To reduce the exposure to environmental (including dust) impacts on the nearby receptors	Reduction in the number of receptors exposed to dust emissions	Air quality risk assessment	N	Y	Secured as part of the design
Construction duration	Change in construction methodology has resulted in the reduction in the duration of the construction period, as such the duration of exposure is reduced	To reduce the duration of exposure to environmental (including dust) impacts on the nearby receptors	Reduction in the number of receptors exposed to dust emissions	Air quality risk assessment	N	Y	Secured as part of the design
Excavation sites	Excavated material from the entire tunnel would be removed only at Mogden STW and not at any other shaft site	To reduce the exposure to environmental (including dust) impacts on the nearby receptors	Reduction in the number of receptors exposed to dust emissions	Air quality risk assessment	N	Y	Secured as part of the design
Building emissions							
Energy demand will be met by the use of electricity							
Transport emissions							
Construction traffic	Reduction in the construction period which results in reduced duration of exposure to traffic-related pollutants	To reduce the exposure to environmental (air quality) impacts on the nearby receptors in an AQMA	Reduction in exposure duration for receptors	Air quality risk assessment	N	Y	Secured as part of the design
Heavy Goods Vehicle (HGV) routing	Construction Logistics Plan will be produced ahead of construction starting	This will aim to reduce the number of commuting vehicle trips (and emissions) by promoting the use of sustainable modes and encouraging lift-sharing and also control HGV routing to and from site	Reduction in traffic-related air quality emissions	Transport assessment	N	Y	Secured as part of the draft Development Consent Order (DCO)
Innovation and future proofing							
None identified in relation to air quality							

A.3 Implementation and monitoring

A.3.1 The measures identified will be secured as part of the design or the draft DCO for the Project, eliminating the need for additional monitoring of their delivery.

A.4 Summary

A.4.1 This Air Quality Positive statement has been included within the Preliminary Environmental Information Report, and it demonstrates that several measures have been incorporated into the Project design to reduce emissions and impacts on local air quality. No additional mitigation of emissions is therefore required beyond those already incorporated into the Project design.