

Gate one query process

Strategic solution(s)	LTWLR
Query number	LTW003
Date sent to company	25/02/2026
Response due by	27/02/2026

Query

- When reviewing your submission we have been unable to identify any associated confidence intervals against your proposed project costs. Please provide us with this information.
- In your submission in Section *Summary*, point 4.29, you note only incremental marginal benefits beyond 200 ML/d. Please provide further detail on:
 - What analysis has been conducted to draw this conclusion
 - Whether you are able to provide any quantifiable trade offs at this stage
 - What proposed work is to be undertaken for gate two on this?
- You note in your submission that that the utilisation rate may vary from 9-40%. What is your latest understanding of the sensitivity of opex to actual utilisation? What work do you propose to do prior to Gate 2 on this?

Solution owner response

Query: When reviewing your submission we have been unable to identify any associated confidence intervals against your proposed project costs. Please provide us with this information.

TW Response:

For Gate 1, there is no modelled QCRA to provide associated Probability-Values (P-Values) of the proposed project costs which is what we have assumed you refer to as “confidence intervals”.

As stated, the uncertainty for the preferred indicative option has been calculated using 66% Optimism Bias, which equates to an equivalent Reference Class Forecast (RCF) P-Value of P-71 for Tunneling projects at Strategic Outline Case (SOC). The lower and upper ranges of cost for the preferred indicative option are equivalent to a RCF P-Values of P-50 & P-80 respectively (using the same Tunneling RCF at SOC).

Query: In your submission in Section *Summary*, point 4.29, you note only incremental marginal benefits beyond 200 MI/d. Please provide further detail on:

- What analysis has been conducted to draw this conclusion
- Whether you are able to provide any quantifiable trade offs at this stage
- What proposed work is to be undertaken for gate two on this?

TW response

The conclusion is drawn from water resources modelling that assessed how different capacity options for the LTWLR scheme would affect deployable output (DO) in the London Water Resource Zone. This analysis used the enhanced version of Thames Water WARMS2 model, as documented in the gate one report. Three scheme capacities (200, 300 and 400 MI/d) were modelled to understand whether increasing intake and transfer capacity would provide a material benefit in terms of available water resources, measured as the change to the DYAA deployable output for London.

As documented in Table 4.1 of the gate one report, increasing the capacity from 200 to 300 MI/d provides an additional 11 MI/d of DO, whereas increasing the capacity from 300 to 400 MI/d provides only 2 MI/d more. Our preliminary modelling also indicates if the LTWLR scheme is implemented after the development of the Environment Agency’s River Thames Scheme, the marginal benefit of the 300 MI/d intake becomes proportionally greater, helping Thames Water manage this future risk more effectively.

At this stage, we cannot explore these trade-offs further. The design of the 200 MI/d option has not been developed to a level that allows comparison across

cost, environmental effects, carbon, planning risk, and other key factors, and the future configuration of the River Thames Scheme remains uncertain.

At gate two, the optioneering work is expected to refine and confirm the preferred scheme size, weighing up the trade-offs between water-resources benefit, cost, environmental effects, carbon impacts, customer implications, and the scheme's contribution to future risk management. It is expected that this optioneering would be integrated with the work required to consider the LTWLR options for WRMP29.

Query: You note in your submission that that the utilisation rate may vary from 9-40%. What is your latest understanding of the sensitivity of opex to actual utilisation? What work do you propose to do prior to Gate 2 on this?

TW response

The utilisation of LTWLR is driven by drought frequency, making its year-to-year utilisation uncertain. In some years the scheme may not be required at all; in others, prolonged periods of low river flows and depleted storage could lead to sustained use throughout a drought. The utilisation figures reported in gate one represent the expected utilisation in the long term (i.e. 9% of the time, on average, over the 100-year record that has been modelled), reflecting how often historical drought conditions were severe enough to trigger the LTWLR transfer.

For gate one, we have not calculated opex costs for specific years but have used a generic assumption of 90 days of operation (as the approximate utilisation mid-point based upon the modelling work completed), to enable comparison between options on a like-for-like basis. No further sensitivity testing of opex against actual predicted utilisation has been undertaken at this stage, as this was not considered necessary to inform the option selection or scheme feasibility at gate one.

The actual operating costs of the scheme would depend on how often it's operated in any given year, which is governed by whether a drought occurs and the severity of this. To explore this further for gate two, it is proposed that different scenarios be considered, based upon different drought severities in the historical record and how often the LTWLR is utilised, to try to get a better understanding of the relationship between drought likelihood and operating costs for that year. This would help illustrate how annual opex varies with drought likelihood and provide a realistic range of potential operating costs. Applying this approach across the different scheme sizes would also support the

wider trade-off analysis already discussed, including how utilisation patterns influence the relative value of each option.

Date of response to RAPID	[REDACTED]
Strategic solution contact / responsible person	[REDACTED] [REDACTED]