Thames to Affinity Transfer SRO

Technical Supporting Document A2a

Cost Report

Lower Thames Reservoir Option

Notice

Position Statement

- This document has been produced as the part of the process set out by RAPID for the development of the Strategic Resource Options (SROs). This is a regulatory gated process allowing there to be control and appropriate scrutiny on the activities that are undertaken by the water companies to investigate and develop efficient solutions on behalf of customers to meet future drought resilience challenges.
- This report forms part of suite of documents that make up the 'Gate 2 submission.' That submission details all the work undertaken by Thames Water and Affinity Water in the ongoing development of the proposed SROs. The intention of this stage is to provide RAPID with an update on the concept design, feasibility, cost estimates and programme for the schemes, allowing decisions to be made on their progress and future funding requirements.
- Should a scheme be selected and confirmed in the companies' final Water Resources Management Plan, in most cases it would need to enter a separate process to gain permission to build and run the final solution. That could be through either the Town and Country Planning Act 1990 or the Planning Act 2008 development consent order process. Both options require the designs to be fully appraised and in most cases, an environmental statement to be produced. Where required that statement sets out the likely environmental impacts and what mitigation is required.
- Community and stakeholder engagement is crucial to the development of the SROs. Some high-level activity has been undertaken to date. Much more detailed community engagement and formal consultation is required on all the schemes at the appropriate point. Before applying for permission Thames Water and Affinity Water will need to demonstrate that they have presented information about the proposals to the community, gathered feedback and considered the views of stakeholders. We will have regard to that feedback and, where possible, make changes to the designs as a result.
- The SROs are at a very early stage of development, despite some options having been considered for several years. The details set out in the Gate 2 documents are still at a formative stage and consideration should be given to that when reviewing the proposals. They are for the purposes of allocating further funding not seeking permission.

Disclaimer

This document has been written in line with the requirements of the RAPID Gate 2 Guidance and to comply with the regulatory process pursuant to Thames Water's and Affinity Water's statutory duties. The information presented relates to material or data which is still in the course of completion. Should the solution presented in this document be taken forward, Thames Water and Affinity Water will be subject to the statutory duties pursuant to the necessary consenting process, including environmental assessment and consultation as required. This document should be read with those duties in mind.

Contents

Appendix A WRMP 24 Tables 5a and 5b

Figures and Tables

1. Executive Summary

1.1 Estimates for base capital cost, costed risk, optimism bias and operational cost are summarised in Table 1-1. which also provides a comparison to Gate 1. It should be noted that the Gate 1 values have been adjusted to a 2020/21 cost base to allow for comparison with Gate 2.

Table 1-1 Cost estimates (2020/21 cost base) for LTR option and comparison to Gate 1 equivalents

Option Name	Units	LTR 50 Ml/d	LTR 100 Ml/d
Option Benefit	MLD	50	100
Capex (20/21)			
Base Capex	£m	278	334
Costed Risk	£m	47	63
Optimism Bias	£m	43	58
Total Gate 2 Capex	£m	368	455
Total Gate 1 Capex	£m	140	221
Change G1 to G2	%	162%	106%
OPEX (20/21)			
Gate 2 Fixed	£m/annum	0.5	0.9
Fixed: G1 to G2	%	37%	27%
Gate 2 Variable	£/ML	96	96
Variable: G1 to G2	%	0%	0%

1.2 Net Present Value (NPV) and Average Incremental Cost (AIC) has been estimated for the LTR working solution using the ACWG standard methodology, based on HM Treasury Green book with a declining schedule of discount rates (HMT Green Book: Annex 6, Table 8) and an 80-year assessment period. Estimates for the NPV and AIC for the LTR working solution are provided in Table 1-2.

Table 1-2 NPV and AIC estimates (2020/21 cost base) for LTR working solutions and comparison to Gate 1 equivalents

Option Name	Units	LTR 50 Ml/d	LTR 100 Ml/d
Option Benefit (DYAA)	MLD	50	100
Total planning period benefit	Ml	340,000	680,000
Total planning period indicative capital cost (CAPEX NPV)	£M	304	380
Estimated Utilisation *			
Total planning period indicative operating cost (OPEX NPV)	£M	23	43
Total planning period indicative total cost (NPV)	£M	327	423
Average Incremental Cost (AIC)	p/m3	82	54
Maximum Utilisation (100%) **			
Total planning period indicative operating cost (OPEX NPV)	£M	43	82
Total planning period indicative total cost (NPV)	£M	347	462
Average Incremental Cost (AIC)	p/m3	88	60
Gate 1 AIC (20/21)	p/m3	58	45

Note * 40% utilisation is assumed for these calculations to enable comparison between options: 1 in 500 year deployable output for 365 days / year, and 40% of the estimated maximum variable operating cost, based upon output of long-term water resources modelling. There is no comparative AIC for Gate 1 as these utilisation calculations were not available at Gate 1.

Note ** 100% utilisation is assumed for these calculations to enable comparison between options: 1 in 500 year deployable output for 365 days / year and estimated maximum variable operating cost.

2. Introduction

2.1 This report summarises the methodology and results of the costing assessment for the Lower Thames Reservoir (LTR) option of the Thames to Affinity Transfer (T2AT) Strategic Regional Option (SRO) scheme. The approach has been developed in line with the All Company Working Group (ACWG) guidance on cost consistency.

2.2 To ensure a degree of consistency across the different SROs, the ACWG has provided guidance and a spreadsheet template for capturing the Quantitative Costed Risk Assessment (QCRA) and calculating Optimism Bias (OB)[1].

2.3 This report should be read in conjunction with the Technical Supporting Document (A1a) - Concept Design Report which details the working solution and assumptions, upon which the costs are based. These reports are supporting documents to the Gate 2 submission to RAPID for the T2AT scheme. The list of documents that make up the submission, along with a short synopsis of the contents may be found in the main T2AT RAPID Gate 2 report.

2.4 Capex and Opex estimates are based on 2 sources.

- Bottom-up costs for most civil components including the pipeline.
- LRMC cost curves for items not captured via the bottom-up costs, primarily mechanical and electrical process components where limited bottom-up data was available. Cost curves are derived by Affinity Water and incorporated in their Long-Range Marginal Cost (LRMC) tool.

2.5 Net Present Value (NPV) and Average Incremental Cost (AIC) have been derived from the Capex and Opex estimates using the standard calculation template provided by the ACWG. NPV and AIC have been calculated for 100% utilisation and the current Estimated operational utilisation scenario for the assets.

2.6 Note that this transfer option is dependent on the South East Strategic Reservoir SRO implementing upstream infrastructure to provide source water and Affinity's Connect 2050 programme implementing downstream infrastructure. South East Strategic Reservoir (SESRO) is a separate SRO in its own right. Costs associated with SESRO are not captured within this report.

2.7 Investment profiles are indicative only to facilitate multi-solution decision making and will be refined at Gate 3.

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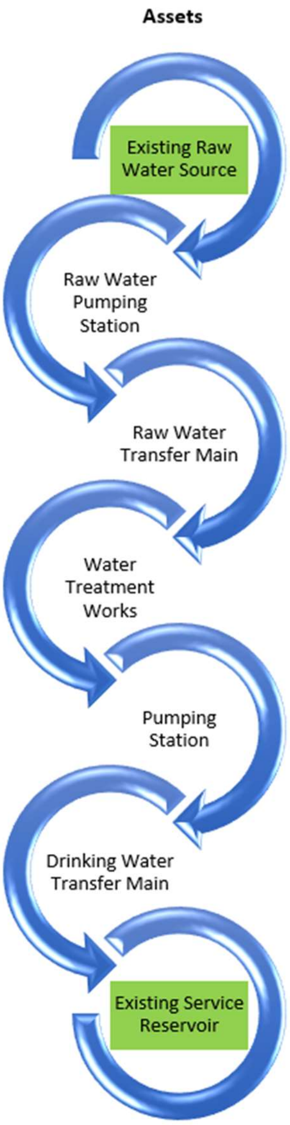
[1] ACWG (2021), Appendix A-1 - Optimism Bias and QCRA Template - Rev C.xlsx

2.1 Scheme overview

2.8 The source of water for the LTR scheme is the River Thames. The natural flow in the river will need to be supported, especially during drought years, by the South East Strategic Reservoir SRO (SESRO). SESRO is a pre-requisite for the LTR scheme.

Figure 2-1: Assets and example components



Components

- Shafts
- Pumps
- Surge mitigation assets
- Pipes and fittings
- Tunnels at major crossings e.g. Railways
- Chambers
- Land purchase
- Buildings
- Roads
- Process plant and Equipment
- Power supply
- Communication & monitoring equipment
- Water Storage
- Waste treatment and disposal / reuse
- Security
- Lighting
- Landscaping

2.9 Raw water for the scheme will be abstracted using the existing Thames Water intake to the Queen Mother and Wraysbury raw water reservoirs. These are part of the Lower Thames Reservoir system, hence the name of this T2AT option.

2.10 There is an existing tunnel which starts from these reservoirs to an existing Water Treatment Works (WTW). Under the LTR scheme it is proposed that a new connection is made into this tunnel, with a raw water pumping station (LTR-RWPS) in an adjacent shaft within the boundary of the existing WTW site.

2.11 The raw water will be conveyed in a new buried transfer main (LTR-RWTM) to a new WTW (LTR-WTW).

2.12 Drinking water produced by the plant will pass through a storage tank before entering a high-lift pumping station (LTR-HLPS) from where it will be conveyed via a buried drinking water transfer main (LTR-DWTM) to an existing storage tank / service reservoir (SR) in the vicinity of Harefield.

2.13 The delivery point for the LTR scheme is an existing SR which is a distribution hub within the Affinity Water network. Modifications to the network downstream from the SR to distribute the increased inflow are currently being determined by Affinity Water and form part of their wider water resources planning and investment programme.

2.14 The drinking water transfer main has several major crossings along the corridor including the A40 dual carriageway, the HS2 railway, the Chiltern line railway and the Grand Union Canal and other major watercourses that follow the Colne Valley.

2.15 Two alternative capacities have been considered for the LTR option which are sized to provide an increase of 50 Ml/d and 100 Ml/d of average deployable output (ADO) to Affinity water respectively.

2.16 A full description of the option is provided in the A1a Concept Design Report – LTR Option.

2.2 Cost overview

2.17 The Total Capital Cost consists of 2 components, the capital cost estimates, and combined risk as shown in Figure 2-2 below.

2.18 Capital cost estimates are based on 2 sources.

- Cost curves derived by Affinity Water and incorporated in their Long-Range Marginal Cost (LRMC) tool.
- Bottom-up costs e.g. contractor and supplier quotes for items not captured via LRMC or out with the recommended range of use.

2.19 The cost base date in which the numbers have been reported is 2020/21 to align with WRMP24 requirements[2]. Option cost estimates presented in this report have not been factored to present day prices. The estimates presented as Gate 1 were to a 2017/18 cost base which is consistent with the cost estimate data provided to WRSE for regional modelling in February 2022.

2.20 To ensure approaches to quantifying risk and uncertainty associated with resource option cost estimates are consistent and to allow comparison of options at a regional level the All Company Working Group (ACWG) has provided a guidance note and associated assessment template[3]. Optimism Bias (OB) is based primarily on the Green Book approach. The template facilitates greater standardisation across the companies in: determining whether an option is considered standard or non-standard civil engineering; how optimism bias is estimated / scaled-back; and the recording and costing of risks. The outputs of the template consist of 2 components, scaled back OB and P50 costed risk which then form the combined costed risk as shown in Table 3-1.

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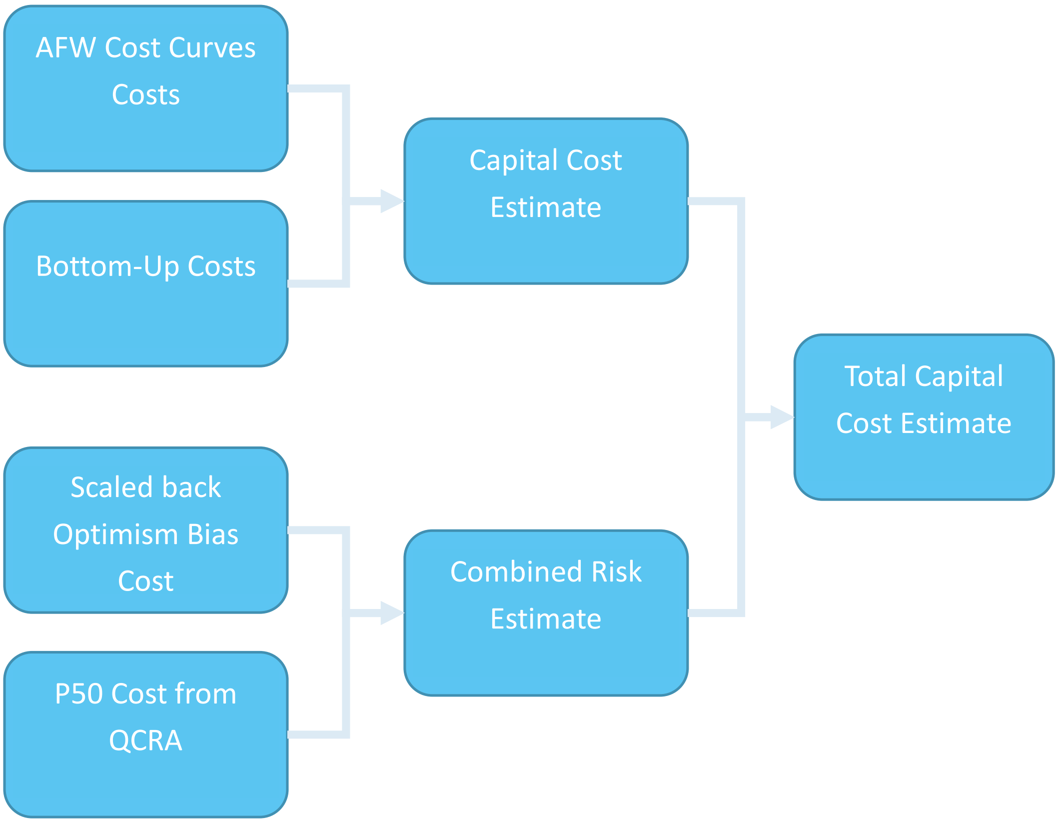
[2] 2022, Water Resources Planning Guidelines - Water Resources Planning Tables – Instructions, V5

[3] 2021, Cost Consistency Methodology, Technical Note and Methodology, Rev E

Figure 2-2: Total Capital Cost Estimate Process



2.21 The Opex estimates consist of fixed and variable components. Fixed Opex is the notional annual cost at zero throughput, hence at minimum throughput the estimated annual Opex would be the fixed Opex plus the variable Opex (expressed per unit of water produced) multiplied by the minimum flow rate.

3. Capital Cost

3.1 Capital cost estimate components

3.1 A single LRMC spreadsheet has been completed for each of the following option components for each flow alternative.

- Raw Water Pumping Station
- Water Treatment Works

3.2 Bottom-up Costs have been produced for each of the following option components for each flow alternative.

- Raw Water Transfer Main
- Drinking Water Transfer Main

3.2 LRMC cost

3.3 For each element of the components, the relevant cost curve was identified together with the appropriate input variables, derived from the concept design. This information was then entered into the LRMC spreadsheet tool to generate estimates of Capex and Opex.

3.4 The power consumption used to calculate Opex has been calculated separately to enable the application of incremental changes in energy.

3.5 The Capex cost base date for the LRMC sheets is 2017/2018. In order that all costs are reported against the same cost base (2020/21) a Capex inflation factor of 1.1 has been applied. The Capex inflation factor provided by WRSE has been applied across all SROs.

3.3 Bottom-up cost

3.6 Where appropriate, bottom-up engineering cost estimates were made based on (a) Mott MacDonald’s experience of implementing similar projects and (b) supplier quotes. Principal items included but were not limited to:

- The shaft associated with connecting to the existing tunnel
- Materials and works associated with the Raw Water Transfer Main and Drinking Water Transfer Main including any crossing requirements e.g., micro tunnelling under a railway
- Surge mitigation measures
- Land purchase and compensation
- Demolition and site clearance
- Sustainable drainage system (SuDS)

- Remediation of existing contaminated land.

3.7 As quotes have been received based on current day prices and in order that all costs are reported against the same cost base (2020/21) a deflation factor of 0.94 has been applied to all bottom-up costs. The deflation factor provided by WRSE has been applied across all SROs.

3.4 On-cost

3.8 To ensure on-costs for LRMC and bottom-up items are applied consistently, bottom-up cost items had both client and contractor on-costs added to them whilst LRMC items remain unchanged. Affinity Water’s LRMC cost curves are based on historic Affinity Water projects and incorporate ‘all-in outturn’ costs (construction costs, contractor and client on-costs, realised risk, plus project-related corporate overheads) for both whole new processes and periodic replacement of individual assets.

3.9 On costs include items such as:

- Contractor on-cost
  - Staff & supervision
  - Design
  - Welfare, offices, services & facilities
  - Temporary compounds & access roads
- Client on-costs
  - Project / programme management
  - Company overheads
  - Indirect costs

3.5 Summary of Capital cost estimates

3.10 The estimated Capex for the 100Ml/d and the 50Ml/d ADO alternatives, including OB, are shown in Table 3-1Table 3-1 and Figure 3-1,. Note that all cost estimates are to a 2020/21 cost base. The Gate 2 Post QCRA adjusted OB value is calculated based on base Capex costs, excluding land costs.

Table 3-1: Estimated Capex (2020/21 cost base) for 100Ml/d and 50Ml/d ADO alternatives

ADO (Ml/d)	Base Capex (£m)	Post QCRA Adjusted OB (%)	Post QCRA Adjusted OB (£m)[4]	P50 Costed Risk (£m)	Total Capex (£m)
100	334	27%	58	63	455
50	278	27%	43	47	368

Figure 3-1: Estimated Capex (2020/21 cost base) for 100Ml/d and 50Ml/d ADO alternatives

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[4] Land costs have been excluded from the OB cost calculation.

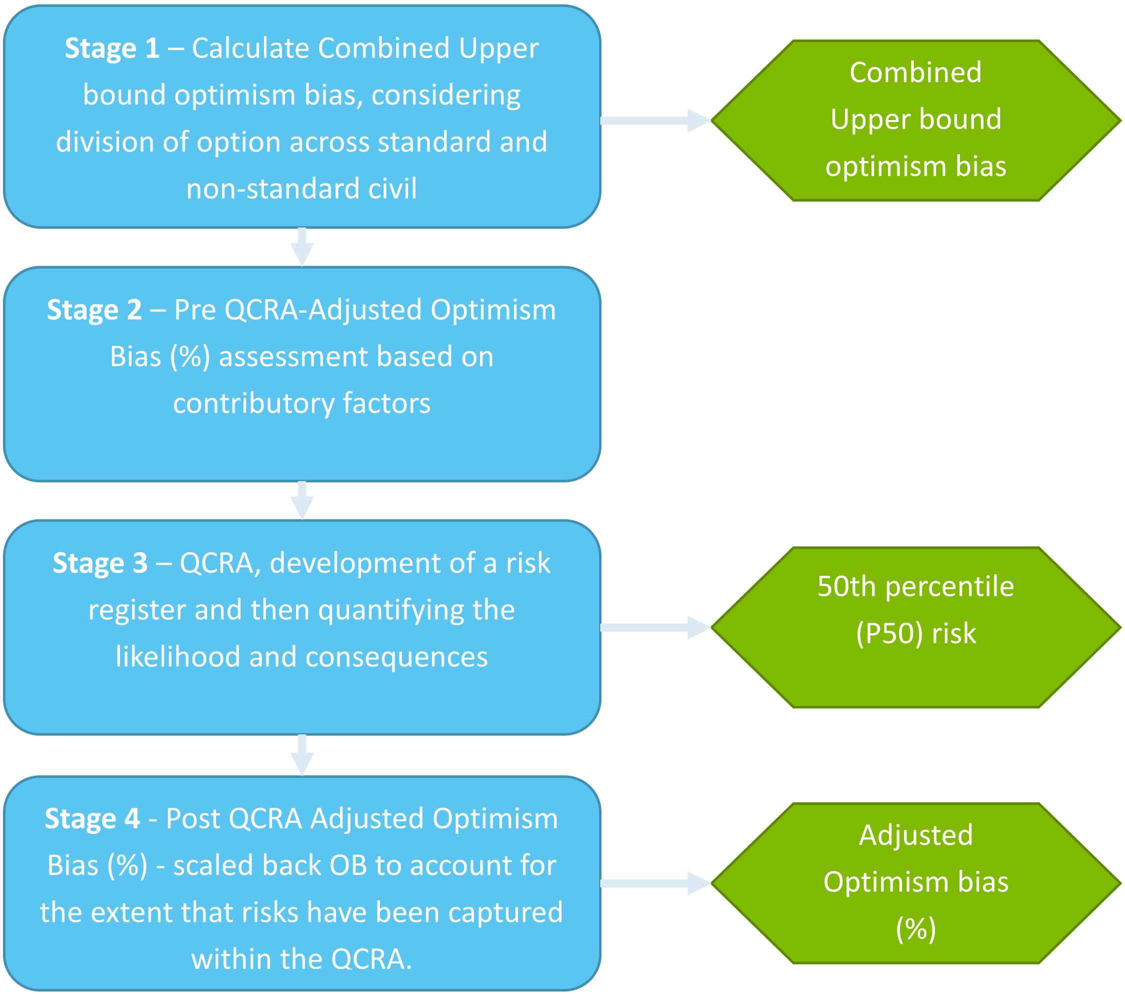
4. Quantitative Costed Risk Assessment and Optimism Bias Assessment

4.1 Approach to Quantitative Costed Risk Assessment and Optimism Bias

4.1 A consistent multistage approach (Figure 4-1) to risk and optimism bias has been applied based upon the approach recommended by the HM Treasury Green Book.

4.2 Both Optimism Bias (OB) as a percentage of Capex estimates (excluding land costs) and costed risk have been assessed to cover the risk of cost increases that may occur during the development and delivery of the selected option. To ensure a degree of consistency across the different SROs, the ACWG has provided guidance and a spreadsheet template for capturing the Quantitative Costed Risk Assessment (QCRA) and calculating OB[5].

Figure 4-1: Multistage approach to risk and optimism bias



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[5] ACWG (2021), Appendix A-1 - Optimism Bias and QCRA Template - Rev C.xlsx

4.3 Stage 1 - In most instances as shown in Figure 4-1, the OB calculation requires option components to be classified as standard or non-standard, depending on the complexity of implementing the scheme. The exception is where a component has a mixture of standard and non-standard elements, and the cost of both types of elements is greater than 35% of the total Capex. In this case the OB needs to be determined according to the proportion of standard and non-standard elements. Standard projects have a maximum OB allowance of 44% of Capex whilst for non-standard projects the maximum is 66%.

4.4 To provide consistency with Affinity Water's WRMP24 schemes each asset has been assigned to a particular type of infrastructure in accordance with the ACWG guidance. The infrastructure types for the T2AT assets are shown in Table 4-1.

Table 4-1: Optimism bias option asset classification

Component	Infrastructure type and rational	Standard or non-standard
Raw Water Pumping Station	Shaft digging on an operational WTW site with space constraints.	Non-standard
Raw Water Transfer Main	Bulk transfers of raw or treated water through an operational WTW site with space constraints.	Non-standard
Water Treatment Works and Drinking Water Pumping Station	Conventional water and wastewater treatment on a brownfield site with demolition, space constraints and potential ground contamination.	Non-standard
Drinking Water Transfer Main	Bulk transfers of raw or treated water with acceptable constraints.	Standard

4.5 Stage 2 – The 'Optimism Bias Tab' within the template is used to consider the proportion of the cost that falls within the different confidence bandings (high/medium/low) as described in the tab itself.

4.6 Stage 3 – The ACWG has prepared a uniform method for determining specific risk allowances in the form of a Quantified Costed Risk Assessment (QCRA) table[6]. Completion of the QCRA requires the identification and assessment of the likely impact of each risk and its probability of occurrence. This allows a value (as a

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[6] ACWG (2021), Appendix A-1 - Optimism Bias and QCRA Template - Rev C.xlsx

percentage of Capex) to be determined relating to each of the risks identified. As part of this stage, two workshops were held with representatives from the engineering, land and planning, terrestrial and aquatic environment work streams in attendance.

- Workshop 1: This focused on briefing other workstreams on the ACWG process, agreeing QCRA risks and opportunity inclusion. A review of description (nature of the risk, including cause and event), potential consequence, risk response strategy, risk owner (by workstreams). To facilitate this workshop the QCRA was initially populated by the engineering workstream.
- Workshop 2: This focused on agreement of any additional content identified by the workstreams, the verification of the work stream scoring and cost banding.

4.7 Subsequent to the workshops, the @Risk tool is used to calculate the P50 costed risk output.

4.8 Stage 4 – Consideration is made to the extent that contributory factors for OB identified in Stage 2 can be scaled back to account for the extent that risks have been identified, understood and managed in Stage 3. During the development of the scheme, contributory factors which make up the OB allowance will be displaced by more specific calculated risk amounts in the QCRA. The scaling back of optimism bias to account for QCRA entries provides the post QCRA adjusted OB. The adjusted OB is then added to the base Capex and the P50 costed risk to give the total capital cost estimate.

4.9 At this early stage of working solution development opportunities are not captured within the costs however they have been recorded, some of which are documented in the Technical Supporting Document (A1a) - Concept Design Report and Technical Supporting Document (A3a) – Carbon Strategy Report

4.2 Summary of optimism bias

4.10 Application of the above process has resulted in the OB percentages shown in Table 4-2.

Table 4-2: Optimism bias for 100Ml/d and 50Ml/d ADO alternatives

ADO (Ml/d)	Pre QCRA Adjusted OB (%)	Post QCRA Adjusted OB (%)
100	38	27
50	38	27

4.11 Note that the contributory factors to OB have the same confidence level for both 50Ml/d and 100Ml/d capacities and hence the OB allowance is the same.

4.3 Summary of key costed risks

Table 4-3 summarises the top 10 risks in the QCRA from Stage 3 of the process, these and others shall be targeted for further investigation post Gate 2. The QCRA currently has 41 live items identified.

Table 4-3 Top 10 risks from the QCRA

No	Description	Consequence
1	Land compensation: An unknown number of stakeholders and landowners to engage with for construction of WTW and pipeline.	Cost of stakeholder engagement and land acquisition / compensation is higher than anticipated. Local community challenges. Potential for delays in start of construction. Development may be obstructed leading to delays and extra costs or at worst, non-viability.
2	Delays to 3rd party granting permits / consents: Delays in obtaining (or failure to secure) discharge / abstraction consents.	Development may be obstructed leading to delays and extra costs or at worst, non-viability. Delays to processing crossing permissions or regulator consents could cause construction to be suspended at local points.
3	Unexpected below ground clashes or constraints applied by 3rd parties - Works within close proximity to other significant infrastructure which that utility deems high risk. Proposed design does not comply with restrictions imposed by the utility company.	Results in re-design, additional approvals, construction can be delayed and additional costs incurred. May alter proposed plans for crossings e.g., route, structural designs (e.g. thrust blocks), hydraulics and / or changes to land noticing. There may be protracted legal negotiations to agree risk liabilities and insurances, requiring additional trenchless crossings and / or re-design of existing.
4	Unexpected above ground point bottlenecks or constraints applied by 3rd parties. Current assumption is that all major crossings can be undertaken using no dig solutions, this may prove to be incorrect.	Results in re-design, programme delay and additional costs.
5	The extent and type of demolition works at the proposed site is not fully understood.	Results in re-design, programme delay and additional costs.

No	Description	Consequence
6	Unknown condition of existing assets / pipes: The asset(s) may not be in good condition, or the position / layout may not be as assumed.	Results in re-design (the asset(s) may have to be modified or repaired or the design altered to allow the proposed interface) programme delay and additional costs.
7	Failure to obtain power supply: planned power requirements prove to be inadequate to support the new development or the backup power provision. The estimate for the upgrade to the network is insufficient.	DNO needs to do upstream reinforcement work, on a site which may not have sufficient space to accommodate DNOs equipment and therefore may require more land. Results in re-design, programme delay and additional costs.
8	Integration of new and existing control systems (SCADA) for Thames and/or Affinity are incompatible.	The SCADA system may require to be modified to incorporate mimics of the new WTW. If the existing SCADA system is a legacy system, there is a possibility it would have to be replaced as the software/hardware might be obsolete. Results in re-design, programme delay and additional costs.
9	Stage 1 Preliminary Unexploded Ordnance (UXO) Desk Studies for LTR and BRI indicate the sites are at HIGH risk.	UXO encountered during intrusive ground investigation works or intrusive construction activities resulting in redesign, additional cost, and delay.
10	Unexpected Ground conditions: Currently limited GI available. The type of contaminated Land at WTW and along pipeline route is unknown. Assumption that most of the excavated material can be reused may not be overoptimistic.	Differential settlement due to heave may preclude the use of shallow foundations or require special measures. Current foundation design assumptions not valid. Additional remediation of ground contamination required. Contaminated material excavated from uncharted landfill sites requires suitable handling and disposal. Results in re-design, programme delay and additional costs.

4.4 Risk management

4.12 In order to further develop our risk understanding, a number of post Gate 2 activities have been identified, the proposed work breakdown is detailed in Supporting Document F: Project Delivery Plan. The Supporting Document F: Project Delivery Plan focuses on the key aspects of the risk registers, discussing the highest priority risks and what activity is being undertaken to mitigate the major cost and programme risks during future phases of the project.

4.13 Below are examples of post Gate 2 activities, which shall be used to inform future risk assessments;

- Environmental and engineering site surveys, including:
  - Walkover surveys
  - Ground investigations
  - Groundwater and surface water monitoring
  - Asset location and condition surveys
  - Geophysical survey and planning archaeological evaluation surveys
  - Ecological, biodiversity and arboriculture surveys
  - Further raw water quality sampling
- Topographical survey, especially of watercourses and river structures
- Initial non-statutory consultations and liaison with affected stakeholders
- Further early contractor engagement
- Further modelling of need and alternatives, as required, using WRSE regional system simulator and investment model, to reflect commentary from public consultations on WRSE and WRMP strategic plans

5. Operational Cost Estimate

5.1 Operational cost estimate components

5.1 In the Affinity Water LRMC cost model, fixed Opex consists of:

- Operational staff cost
- Maintenance staff cost and consumables
- Compliance and operational sampling and testing

5.2 Variable Opex consists of:

- Power cost
- Treatment chemicals
- Abstraction licencing
- Sludge disposal licencing
- Contracted maintenance

5.3 The LRMC spreadsheet tool was found to produce poor estimates of power cost because the cost curve driver is flow only, whereas power is a function of flow and pumping head. The power utilisation was therefore calculated separately and fed into the model as an external input.

5.4 The cost base date for the LRMC sheets is 2017/2018. In order that all Opex costs are reported against the same cost base (2020/21) an Opex inflation factor of 1.07 has been applied. The Opex inflation factor provided by WRSE has been applied across all SROs.

5.5 Apart from the substitution of the power cost mentioned above, no other additions or subtractions were made to the Opex estimates provided by the LRMC spreadsheet tool.

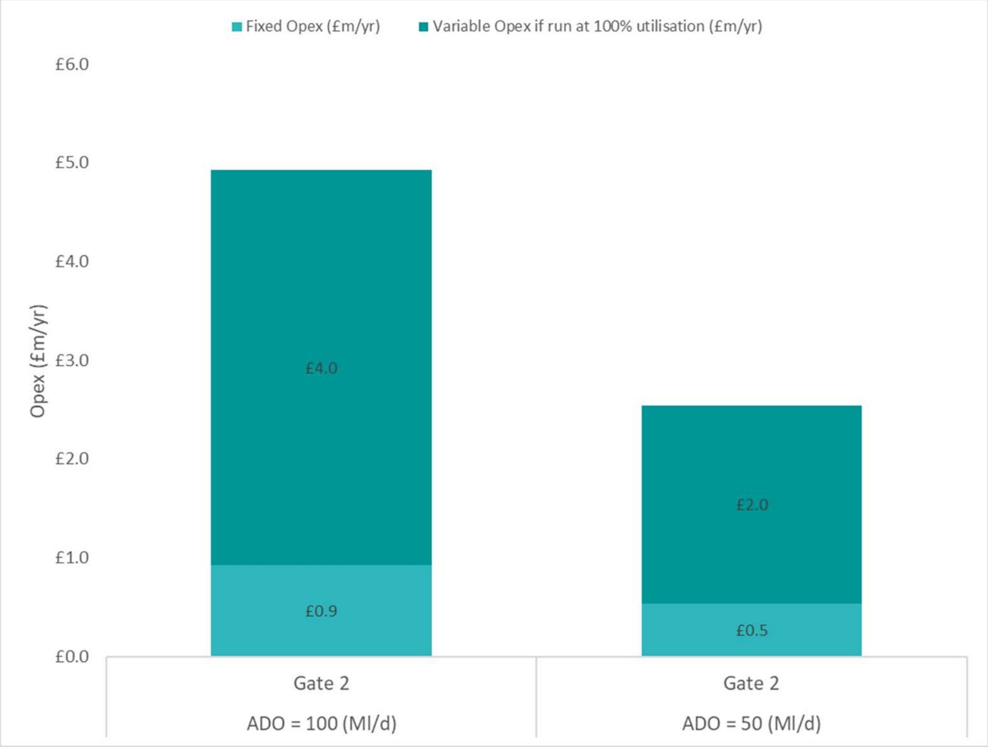
5.2 Summary of operational cost estimate

5.6 The Opex for each of the options for the 100Ml/d ADO and the 50Ml/d ADO alternatives are shown in Table 5-1 and Figure 5-1 below. Note that all estimates are to a 2020/21 cost base. The variable Opex is given for the options running at their full capacity.

Table 5-1: Opex (2020/21 cost base) for 100Ml/d and 50Ml/d ADO alternatives at 100% Utilisation

ADO (Ml/d)	Fixed Opex (£m/yr)	Variable Opex (p/m^3)	Variable Opex if run at 100% utilisation (£m/yr)	Total Opex if run at 100% utilisation (£m/yr)
100	0.9	9.6	4.0	4.9
50	0.5	9.6	2.0	2.5

Figure 5-1: Opex (2020/21 cost base) 100Ml/d and 50Ml/d ADO alternatives at 100% Utilisation



6. Net Present Value and Average Incremental Cost

6.1 NPV and AIC have been calculated for each component using the standard calculation template provided by the ACWG[7].

6.2 The base date for Capex and Opex cost estimates is 2020/21.

6.3 Capital costs are converted into a financing charge and depreciation charge as set out in Section 6.3 of the ACWG Cost Consistency Methodology[8] using asset life categories defined in Table 6-3[8].

6.4 Elements of the option have been mapped to Opex and Capex sub-metric categories defined for WRMP24 reporting.

6.5 Discount rates and associated discount factors used align with Table 7 of the HM Treasury Green Book (2020)[8].

6.6 The NPV and AIC costs have been calculated for (a) 100% utilisation and (b) the best estimate of operational utilisation.

6.7 Optimism bias is included in the calculation.

6.8 The PR19 final determination Weighted Average Cost of Capital (WACC) of 2.92% is used in the calculation of financing costs[8].

6.1 Appraisal period and Investment profile

6.9 The appraisal period is taken as 80 years from the start of the planning stage. The earliest completion date is expected to end in 2040[9]. The option is assumed to be operational after 11 years from the start of the planning stage.

6.10 AIC of an option includes the costs for all stages (Planning, Development and 'Construction & Operation') of an option.

6.11 The scheme is likely to be progressed as a Development Consent Order (DCO) rather than via a conventional planning application, therefore the investment profile has been adapted to account for this, the output of which is shown in Figure 6-1[10].

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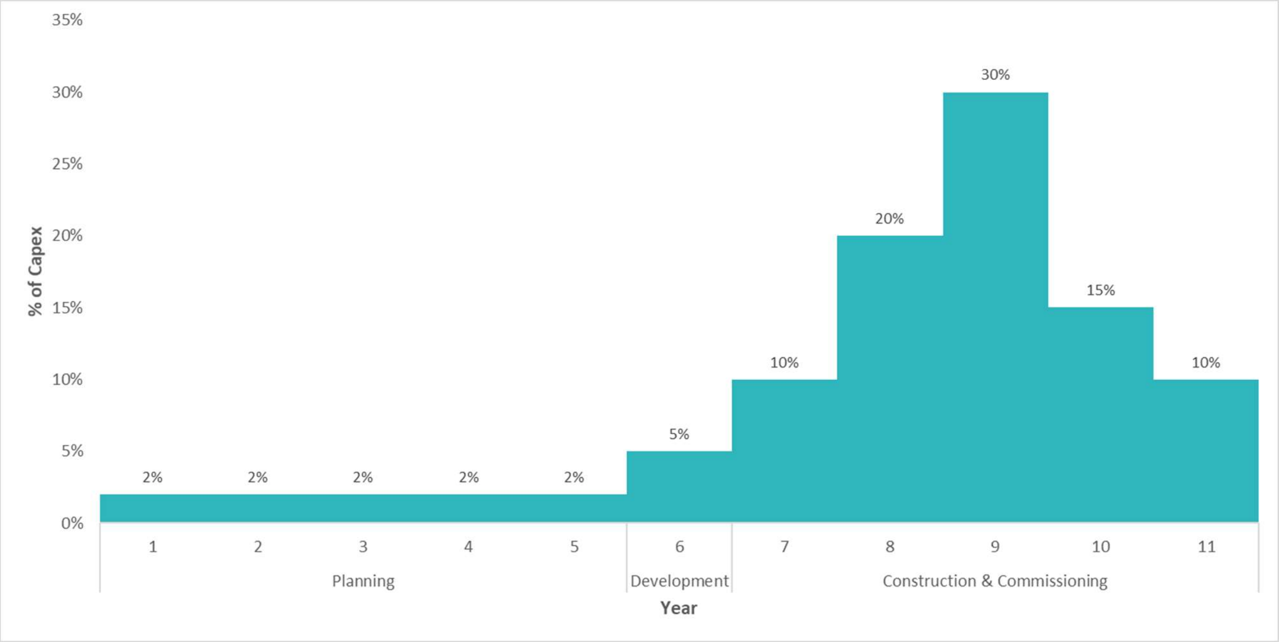
[7] ACWG (2021), One Scheme AIC RevC Template.xlsx

[8] ACWG (2021) - Cost Consistency Methodology - Rev E

[9] For illustrative purposes only

[10] Investment profile is indicative only to facilitate multi-solution decision making and will be refined at Gate 2

Figure 6-1: Option Investment Profile



6.2 100% utilisation scenario

6.12 For 100% utilisation, the option is assumed to operate at 100% of capacity every day from the date that the asset becomes operational. The 100% utilisation figures allow comparison with other SROs at Gate 2, which have been calculated on the same basis.

NPV and AIC costs for the option, if implemented and operated at 100Ml/d or 50Ml/d DO, are shown in Table 6-1. The NPV values are shown graphically in

6.13 Figure 6-3.

Table 6-1: NPV & AIC (2020/21 cost base) for 100% utilisation scenario

ADO (Ml/d)	Option benefit (Ml at 100% capacity)	NPV Capex (£m)	NPV Opex (£m)	Total NPV (£m)	AIC (p/m3)
100	680,000	380	82	462	60
50	340,000	304	43	347	88

6.3 Estimated operational utilisation scenario

6.14 It is not expected that the scheme will be used at 100% capacity for 100% of the time. If the T2AT scheme is modelled as the last source to be utilised, then there are significant periods during which the scheme is not called on at all. However, the nature of conventional drinking water treatment plant is such that it requires a considerable amount of time and cost to recommission when starting from zero throughput. Therefore, the scheme will always be operated at a minimum throughput of 25% of its full capacity.

6.15 Pipelines and service reservoirs also need a minimum throughput to avoid over-aging of the water within them. In general, drinking water should not be allowed to remain in the pipeline or service reservoir for more than three days, with an absolute maximum of seven days in abnormal circumstances. Longer periods are allowable for raw water pipelines.

6.16 NPV and AIC calculations for current best estimate of operational utilisation consider both the minimum throughput requirements and the forecast utilisation profile derived from results of the PyWR water resources modelling. For the 100 Ml/d alternative this gives the utilisation profile shown by the blue line in Figure 6-2 below.

Figure 6-2: Operational utilisation profile for the 100Ml/d DO

6.17 For the purposes of calculating Opex for the T2AT scheme, the profile has been simplified as shown by the green line in Figure 6-2. The simplified utilisation profile for each alternative is shown in tabular form in Table 6-2.

Table 6-2: Simplified utilisation profile for 50Ml/d ADO and 100Ml/d ADO alternatives

Utilisation (% of Capacity)	Proportion of time spent at utilisation (% of time)
0%	0%
25%	60%
40%	15%
70%	20%
100%	5%

6.18 Note that the average utilisation is 40% for both alternatives. Further details of the modelling that supports this utilisation profile can be found in Section 4.4 of Technical Supporting Document (A1b) - Concept Design Report.

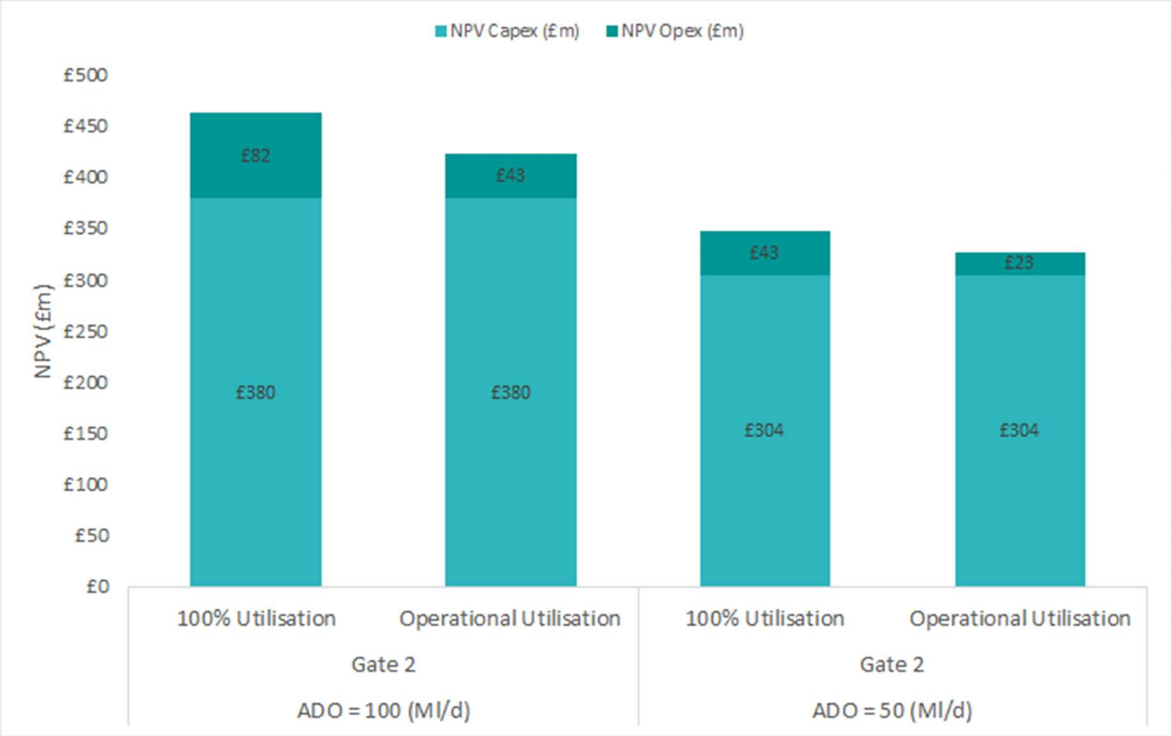
NPV and AIC costs for the options if implemented at 100Ml/d or 50Ml/d DO but operated at the estimated operational utilisation are shown in Table 6-3. The NPV values are also shown graphically in

6.19 Figure 6-3.

Table 6-3: NPV and AIC (2020/21 cost base) at estimated operational utilisation

ADO (Ml/d)	Option benefit (Ml on full implementation)	NPV Capex (£m)	NPV Opex (£m)	Total NPV (£m)	AIC (p/m3)
100	700,000	380	43	423	54
50	340,000	304	23	327	82

Figure 6-3: Comparison of NPV (2020/21 cost base) for 100Ml/d and 50Ml/d alternatives, and 100% utilisation and estimated operational utilisation scenarios



6.20 For the estimated operational utilisation scenario, the Capex and fixed Opex NPV results are the same as for the 100% utilisation scenario, when comparing scenarios with the same ADO. The NPV of total planning period option benefit results are also the same because they relate to the water available for use rather than the amount of water actually delivered. The difference lies in the variable Opex results, which are ~50% of the full capacity values, leading to AIC values which are approximately ~65% of the AIC values for the options if operated at 100% utilisation.

6.21 As with all of the figures in this report, the results apply only to the treatment and transfer assets and do not take into account the upstream and downstream supporting infrastructure.

7. Change from Gate 1 and WRSE draft regional plan submission

7.1 Change from Gate 1 to Gate 2

7.1.1 Base Capital cost

7.1 The capex cost estimates at Gate 2 are based upon a much more granular concept design and a 'bottom-up' cost estimate of many of the main elements, compared to the approach used at Gate 1, which was based around more generic cost curves to ensure accurate comparison between options by WRSE. This has resulted in some cost increases since Gate 1, the most significant factors are summarised in Table 7-1 below.

7.2 *Figure 7-1*, compares the Gate 2 Capex estimate with Gate 1 for the 50 and 100Ml/d alternatives. The Capex estimates have increased from Gate 1 to Gate 2 predominantly due to the movement of the WTWs from a greenfield to brownfield site and due to a greater understanding of crossing complexity.

Table 7-1: Significant influencers to increased Capex

Description	% of overall CAPEX increase
The costs associated with land acquisition and compensation has increased by a factor of 8, now making up a significant proportion of the Capex. An allowance has been added for the rental of land for temporary works.	~56%
The relocation of the WTW from greenfield to a brownfield site to decrease environmental and planning risks has resulted in additional engineering complexity e.g., demolition, site clearance and piling of foundations. These were previously assumed to have been covered by the LRMC cost curves.	~28%
As a result of bottom-up estimating, the average cost of a crossing has increased by a factor of 3. AFW agreement with HS2 for the crossing point has changed both in terms of location and HS2's scope. The HS2 crossing represents ~3% of the increase in estimated cost.	~12%
Bottom-up shaft costing has resulted in its cost doubling.	~1%
An allowance has been added for pipeline land compensation costs and environmental mitigation measures, along with contaminated ground processing. These were previously assumed to have been covered by the LRMC cist curves.	~2%

7.3 Other influencing factors include.

a) The latest AFW Long-run marginal cost (LRMC) sheets have been used incorporating improved cost curves[11].

b) A ~15% increase in capacity for the treatment works and pipelines following additional DO modelling[Error! Bookmark not defined.].

c) A 20% increase in the quantity of major crossings and a greater understanding of the engineering complexity has resulted in a ~25% increase in pipeline length. The desire to avoid planning and environmental constraints has also influenced the refined pipeline corridor.

d) An allowance has been added for environmental mitigation measures and landscaping at the WTWs.

e) Backup generator has been replaced by a dual power supply.

Figure 7-1: Capex (2020/21 cost base) comparison with Gate 1

7.1.2 Costed risk and optimism bias

7.4 Figure 7-2, compares the Gate 2 Combined Upper Bound Optimism bias (CUBOB)

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[11] Included in Feb '22 WRSE update.

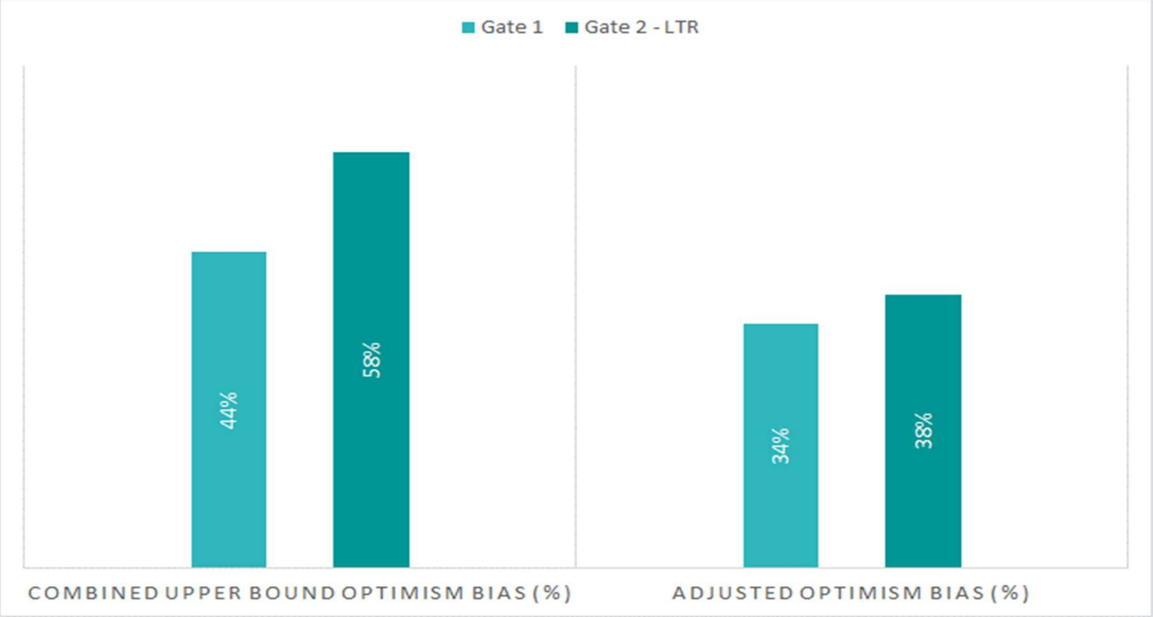
with Gate 1 CUBOB for the 50 and 100Ml/d alternatives. The CUBOB estimates have increased from Gate 1 to Gate 2 predominantly due to the relocation of the WTW from a greenfield to a brownfield site. This has resulted in additional engineering complexity due to space constraints, piling of foundations, demolition works and site clearance including potential ground contamination.

7.5 The number of major crossings and a greater understanding of the engineering complexity has also influenced OB.

7.6 The cost related to OB is relative to base Capex (excluding land costs), therefore as base Capex has increased the cost related to OB has increased.

7.7 A QCRA has been produced for Gate 2, this was not available at Gate 1. The adjusted OB % at Gate 2 is only slightly higher than that of Gate 1 as the QCRA now accounts for some elements of OB.

Figure 7-2: Optimism Bias comparison with Gate 1



7.1.3 Operational cost

7.8 Changes to operating costs since Gate 1 are less pronounced than capex but are driven by factors such as a ~15% increase in capacity for the treatment works and pipelines following additional DO modelling.

7.9 *Figure 7-3*, compares the Gate 2 Opex with Gate 1 for the 50 and 100Ml/d alternatives. Between Gate 1 and Gate 2 the total Opex estimates has remained the same for the 100Ml/d alternative and decreased for the 50Ml/d alternative. The most significant factors are captured below.

a) A ~15% increase in capacity for the treatment works and pipelines following additional DO modelling[12].

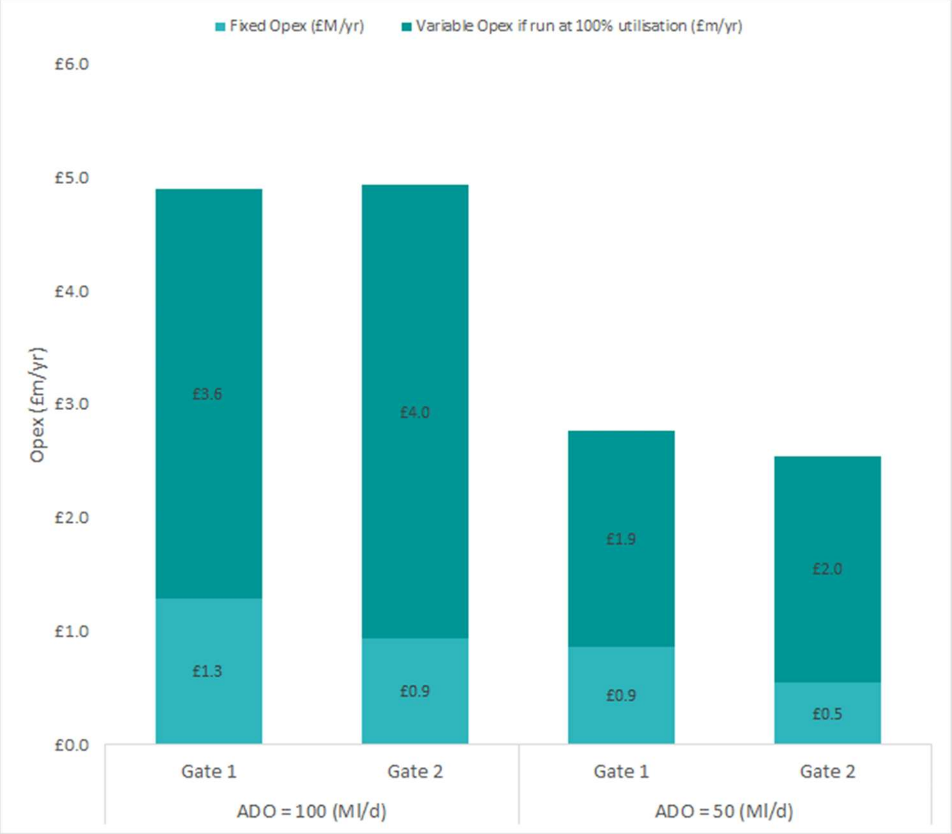
b) The latest AFW Long-run marginal cost (LRMC) sheets have been used incorporating improved cost curves[Error! Bookmark not defined.].

c) The largest change factor for variable Opex is power consumption, which has decreased as result of pipeline and pump optimisation, which in turn decreased energy use at the raw water pumping station.

d) WTW processes have also be optimised which has had an impact on chemical volumes.

e) Chemical unit rates have been customised where appropriate.

Figure 7-3: Opex (2020/21 cost base) comparison with Gate 1



7.1.4 Average Incremental Cost

Figure 7-4, shows the increases in NPV and AIC from Gate 1 to Gate 2, for further details of these increases refer to sections 7.1.1, 7.1.2 and 7.1.3 above.

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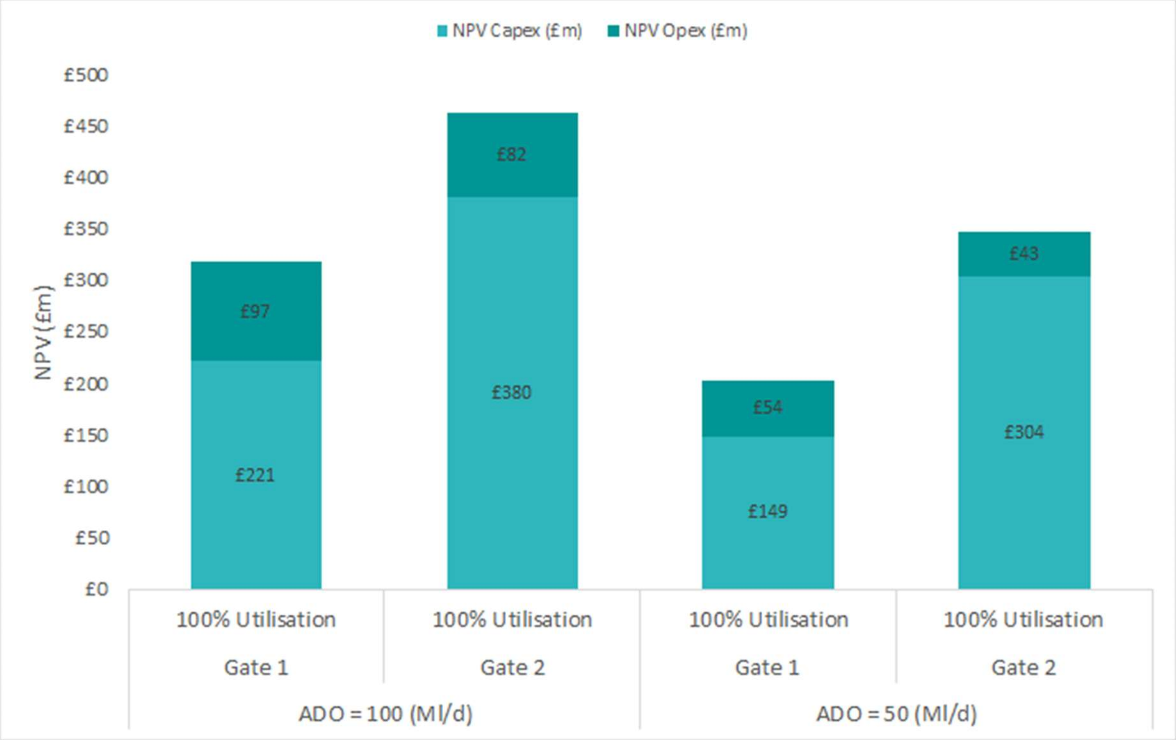
[12] Included in Feb '22 WRSE update.

Figure 7-4: NPV & AIC (2020/21 cost base) comparison with Gate 1 for 100% utilisation scenario



7.2 Change from WRSE draft regional plan submission to Gate 2

7.10 The primary increases in Capex cost are as a result of changes from WRSE draft regional plan to the Gate 2 submission, the most significant factors are summarised in *Table 7-1* above. The two exceptions are factors a and b in Section 7.1.1 above, that were also captured in the WRSE draft regional plan.

7.11 The primary decreases in Opex cost are as a result of changes from WRSE draft regional plan to the Gate 2 submission, the most significant factors are summarised in Section 7.1.3 above. The two exceptions are factors a and b in Section 7.1.3 that were also captured in the WRSE draft regional plan.

7.12 The CUBOB estimates have increased from WRSE draft regional plan submission to Gate 2 predominantly due to the relocation of the WTW from a greenfield to a brownfield site. This has resulted in additional engineering complexity due to space constraints, piling of foundations, demolition works and site clearance including potential ground contamination. The cost related to OB is relative to base Capex (excluding land costs), therefore as the most significant increase in base Capex has occurred since the WRSE draft regional plan submission the cost related to OB has also increased.

7.13 A QCRA has been produced for Gate 2, this was not available for the WRSE draft regional plan submission. The adjusted OB % at Gate 2 is slightly higher than that of WRSE draft regional plan submission as the QCRA now accounts for some elements of OB.

Appendix A WRMP 24 Tables 5a and 5b

Cost Profile WRMP24 Table

Water Company	Thames & Affinity Water	Version	V2.0

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Table 5a: WC Level - Option Level Cost Profile Table

Table Instruction	Option ID	Option Name	Cost Metric (£m)	Cost Sub-metric (£m)	Asset Life: Estimated average number of years an asset is considered useable before its value is fully depreciated.	Total/Fixed/Variable	2019-20	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49
Complete for all options (Feasible and preferred)	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Capex			Total		3.1675	3.1675	3.1675	3.1675	97.343	7.9187	15.837	31.675	47.512	23.756	15.837	0	0	0	0.6954	0	0	0	0.6954	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Opex			Total		0	0	0	0	0	0	0	0	0	0	0	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Financing Cost			Total		0.0724	0.2173	0.3622	0.5071	2.4012	4.404	4.9474	6.0341	7.8453	9.4753	10.381	12.999	12.932	12.865	12.811	12.757	12.691	12.624	12.57	12.516
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Discount Rate			Total		0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Discount Factor			Total		0.9662	0.9335	0.9019	0.8714	0.842	0.8135	0.786	0.7594	0.7337	0.7089	0.6849	0.6618	0.6394	0.6178	0.5969	0.5767	0.5572	0.5384	0.5202	0.5026
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Capex	Costed Risk		Total		0.9324	0.9324	0.9324	0.9324	0.9324	2.3311	4.6622	9.3243	13.986	6.9932	4.6622	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Capex	Optimism Bias		Total		0.8622	0.8622	0.8622	0.8622	26.497	2.1555	4.311	8.6219	12.933	6.4664	4.311	0	0	0	0.1893	0	0	0	0.1893	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Net Present Cost (NPC)			Total		0.07	0.2029	0.3267	0.4419	2.0218	3.5827	3.8886	4.5824	5.7563	6.7172	7.1104	10.118	9.7335	9.363	9.0142	8.6783	8.3475	8.0293	7.7297	7.4412
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Total NPC			Total	298.97387																				

Cost Metric (£m)	Cost Sub-metric (£m)	Total/Fixed/Variable	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69
Capex		Total	0.6553	0	0.6954	0	0	0	0.6954	0	0	0	7.0744	0	0	0	0.6954	2.8762	0	0	0.6954	0
Opex		Total	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905
Financing Cost		Total	12.461	12.407	12.353	12.299	12.232	12.165	12.111	12.057	11.99	11.923	11.988	12.053	11.986	11.919	11.865	11.864	11.851	11.784	11.73	11.676
Discount Rate		Total	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Discount Factor		Total	0.4856	0.4692	0.4533	0.438	0.4231	0.4088	0.395	0.3817	0.3687	0.3563	0.3459	0.3358	0.326	0.3165	0.3073	0.2984	0.2897	0.2812	0.2731	0.2651
Capex	Costed Risk	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capex	Optimism Bias	Total	0.1784	0	0.1893	0	0	0	0.1893	0	0	0	1.9257	0	0	0	0.1893	0.7829	0	0	0.1893	0
Net Present Cost (NPC)		Total	7.163	6.8951	6.6375	6.3895	6.1451	5.91	5.6888	5.4758	5.266	5.0641	4.939	4.8168	4.6547	4.498	4.3504	4.2235	4.0966	3.9585	3.8285	3.7027
Total NPC		Total																				

Cost Metric (£m)	Cost Sub-metric (£m)	Total/Fixed/Variable	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89
Capex		Total	1.1628	0	0.6954	0	0	0	0.6954	0	0	0	7.0744	0	0	0	0.6954	0	0	0	0.6954	0
Opex		Total	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905
Financing Cost		Total	11.631	11.586	11.532	11.478	11.411	11.344	11.29	11.236	11.17	11.103	11.167	11.232	11.165	11.098	11.044	10.99	10.923	10.857	10.803	10.749
Discount Rate		Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Discount Factor		Total	0.2574	0.2499	0.2426	0.2355	0.2287	0.222	0.2156	0.2093	0.2032	0.1973	0.1915	0.1859	0.1805	0.1753	0.1702	0.1652	0.1604	0.1557	0.1512	0.1468
Capex	Costed Risk	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capex	Optimism Bias	Total	0.3165	0	0.1893	0	0	0	0.1893	0	0	0	1.9257	0	0	0	0.1893	0	0	0	0.1893	0
Net Present Cost (NPC)		Total	3.5832	3.4675	3.3534	3.243	3.1333	3.0272	2.9274	2.8309	2.7348	2.642	2.5774	2.5143	2.429	2.3466	2.269	2.194	2.1194	2.0473	1.9795	1.9139
Total NPC		Total																				

Cost Metric (£m)	Cost Sub-metric (£m)	Total/Fixed/Variable	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09
Capex		Total	4.997	0	0.6954	0	0	0	0.6954	0	0	0	34.458	0	0	0	0.6954	0	0	0	0.6954	0
Opex		Total	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905	2.2905
Financing Cost		Total	10.775	10.801	10.747	10.693	10.626	10.559	10.505	10.451	10.384	10.317	10.891	11.464	11.397	11.33	11.276	11.222	11.155	11.089	11.035	10.981
Discount Rate		Total	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.025	0.025	0.025	0.025	0.025
Discount Factor		Total	0.1425	0.1384	0.1343	0.1304	0.1266	0.1229	0.1193	0.1159	0.1125	0.1092	0.106	0.1029	0.1	0.097	0.0942	0.0919	0.0897	0.0875	0.0854	0.0833
Capex	Costed Risk	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capex	Optimism Bias	Total	1.3602	0	0.1893	0	0	0	0.1893	0	0	0	9.3795	0	0	0	0.1893	0	0	0	0.1893	0
Net Present Cost (NPC)		Total	1.8619	1.8112	1.7512	1.6932	1.6354	1.5796	1.5271	1.4764	1.4259	1.377	1.3977	1.416	1.3681	1.3218	1.2782	1.242	1.2058	1.1705	1.1373	1.1051
Total NPC		Total																				

Table 5b: WC Level - Option Level Unit Cost Profile Table

Table Instruction	Option ID	Option Name	Cost Metric (£m)	Cost Sub-metric (£m)	Asset Life: Estimated average number of years an asset is considered useable before its value is fully depreciated.		2019-20	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49
Complete for all options >£100m (Feasible and preferred)	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Opex	Cost		Fixed		0	0	0	0	0	0	0	0	0	0	0	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Opex	Cost		Variable		0	0	0	0	0	0	0	0	0	0	0	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Land (Non depreciating)			Fixed		0	0	0	0	119.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Planning and Development (Non depreciating)			Fixed		4.0297	4.0297	4.0297	4.0297	4.0297	10.074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Other Non-Depreciating Assets (Non depreciating)			Fixed		0	0	0	0	0	0	4.7344	9.4689	14.203	7.1016	4.7344	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Process-Related Carbon Media Including GAC (4)		4	Fixed		0	0	0	0	0	0	0.1041	0.2082	0.3123	0.1561	0.1041	0	0	0	0.8847	0	0	0	0.8847	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Vehicles (4)		4	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Computers and Data Logging (4)		4	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Fencing (10)		10	Fixed		0	0	0	0	0	0	0.0316	0.0632	0.0947	0.0474	0.0316	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Domestic Meters (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Building Services (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Membranes (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	ICA (Instrumentation, Control & Automation) (10)		10	Fixed		0	0	0	0	0	0	0.0665	0.133	0.1995	0.0998	0.0665	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Plant and Machinery (15)		15	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)		20	Fixed		0	0	0	0	0	0	0.8567	1.7133	2.57	1.285	0.8567	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Raw Water and District Meters (20)		20	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Power Supply (25)		25	Fixed		0	0	0	0	0	0	0.4305	0.861	1.2915	0.6457	0.4305	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Steel/Timber/GRP Structures (30)		30	Fixed		0	0	0	0	0	0	0.0153	0.0306	0.0459	0.023	0.0153	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Landscaping/Environmental Works (30)		30	Fixed		0	0	0	0	0	0	0.0607	0.1213	0.182	0.091	0.0607	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Borehole Screening and Casing (30)		30	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Bridges (40)		40	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Brick/Concrete Office Structures (50)		50	Fixed		0	0	0	0	0	0	0.2193	0.4387	0.658	0.329	0.2193	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Treatment and Pumping Station Civils (incl. Intakes) (60)		60	Fixed		0	0	0	0	0	0	3.4306	6.8612	10.292	5.1459	3.4306	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Roads and Car Parks (60)		60	Fixed		0	0	0	0	0	0	0.592	1.1839	1.7759	0.8879	0.592	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Water Towers (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Borehole Installation (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Headworks/Valves (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Underwater Assets (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Reinforced Concrete Tanks / Service Reservoirs (80)		80	Fixed		0	0	0	0	0	0	1.368	2.736	4.1041	2.052	1.368	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Weirs (100)		100	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Pipelines (100)		100	Fixed		0	0	0	0	0	0	4.9412	9.8823	14.823	7.4117	4.9412	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Tunnels (100)		100	Fixed		0	0	0	0	0	0	3.2976	6.5952	9.8928	4.9464	3.2976	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Aqueducts (100)		100	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Embankment Works (250)		250	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR	LTR_50	Costed Risk			Fixed		0.9324	0.9324	0.9324	0.9324	0.9324	2.3311	4.6622	9.3243	13.986	6.9932	4.6622	0	0	0	0	0	0	0	0	0

Cost Metric (£m)	Cost Sub-metric (£m)		2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69
Opex	Cost	Fixed	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402
Opex	Cost	Variable	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503
Land (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning and Development (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-Depreciating Assets (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process-Related Carbon Media Including GAC (4)		Fixed	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0
Vehicles (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computers and Data Logging (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fencing (10)		Fixed	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0
Domestic Meters (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Services (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Membranes (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ICA (Instrumentation, Control & Automation) (10)		Fixed	0.5653	0	0	0	0	0	0	0	0	0	0.5653	0	0	0	0	0	0	0	0	0
Plant and Machinery (15)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)		Fixed	0	0	0	0	0	0	0	0	0	0	7.2817	0	0	0	0	0	0	0	0	0
Raw Water and District Meters (20)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Supply (25)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6592	0	0	0	0
Steel/Timber/GRP Structures (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landscaping/Environmental Works (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borehole Screening and Casing (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bridges (40)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brick/Concrete Office Structures (50)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Treatment and Pumping Station Civils (incl. Intakes) (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roads and Car Parks (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Towers (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borehole Installation (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Headworks/Valves (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Underwater Assets (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reinforced Concrete Tanks / Service Reservoirs (80)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weirs (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipelines (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunnels (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aqueducts (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Embankment Works (250)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Costed Risk		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cost Metric (£m)	Cost Sub-metric (£m)		2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89
Opex	Cost	Fixed	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402
Opex	Cost	Variable	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503
Land (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning and Development (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-Depreciating Assets (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process-Related Carbon Media Including GAC (4)		Fixed	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0
Vehicles (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computers and Data Logging (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fencing (10)		Fixed	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0
Domestic Meters (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Services (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Membranes (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ICA (Instrumentation, Control & Automation) (10)		Fixed	0.5653	0	0	0	0	0	0	0	0	0	0.5653	0	0	0	0	0	0	0	0	0
Plant and Machinery (15)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)		Fixed	0	0	0	0	0	0	0	0	0	0	7.2817	0	0	0	0	0	0	0	0	0
Raw Water and District Meters (20)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Supply (25)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Steel/Timber/GRP Structures (30)		Fixed	0.1301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Landscaping/Environmental Works (30)		Fixed	0.5155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borehole Screening and Casing (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bridges (40)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brick/Concrete Office Structures (50)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Treatment and Pumping Station Civils (incl. Intakes) (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roads and Car Parks (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Towers (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borehole Installation (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Headworks/Valves (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Underwater Assets (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reinforced Concrete Tanks / Service Reservoirs (80)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weirs (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipelines (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunnels (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aqueducts (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Embankment Works (250)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Costed Risk		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cost Metric (£m)	Cost Sub-metric (£m)		2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09
Opex	Cost	Fixed	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402	0.5402
Opex	Cost	Variable	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503	1.7503
Land (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning and Development (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-Depreciating Assets (Non depreciating)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process-Related Carbon Media Including GAC (4)		Fixed	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0	0	0	0.8847	0
Vehicles (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Computers and Data Logging (4)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fencing (10)		Fixed	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0
Domestic Meters (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Building Services (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Membranes (10)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ICA (Instrumentation, Control & Automation) (10)		Fixed	0.5653	0	0	0	0	0	0	0	0	0	0.5653	0	0	0	0	0	0	0	0	0
Plant and Machinery (15)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)		Fixed	0	0	0	0	0	0	0	0	0	0	7.2817	0	0	0	0	0	0	0	0	0
Raw Water and District Meters (20)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Supply (25)		Fixed	3.6592	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Steel/Timber/GRP Structures (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0.1301	0	0	0	0	0	0	0	0	0
Landscaping/Environmental Works (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0.5155	0	0	0	0	0	0	0	0	0
Borehole Screening and Casing (30)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bridges (40)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brick/Concrete Office Structures (50)		Fixed	1.8643	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Treatment and Pumping Station Civils (incl. Intakes) (60)		Fixed	0	0	0	0	0	0	0	0	0	0	29.16	0	0	0	0	0	0	0	0	0
Roads and Car Parks (60)		Fixed	0	0	0	0	0	0	0	0	0	0	5.0316	0	0	0	0	0	0	0	0	0
Water Towers (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borehole Installation (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Headworks/Valves (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Underwater Assets (60)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reinforced Concrete Tanks / Service Reservoirs (80)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weirs (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipelines (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunnels (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aqueducts (100)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Embankment Works (250)		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Costed Risk		Fixed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cost Profile WRMP24 Table

Water Company	Thames and Affinity Water	Version	V2.0

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Table 5a: WC Level - Option Level Cost Profile Table

Table Instruction	Option ID	Option Name	Cost Metric (£m)	Cost Sub-metric (£m)	Asset Life: Estimated average number of years an asset is considered useable before its value is fully depreciated.	Total/Fixed/Variable	2019-20	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09
Complete for all options (Feasible and preferred)	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Capex			Total		4.2755	4.2755	4.2755	4.2755	98.451	10.689	21.377	42.755	64.132	32.066	21.377	0	0	0	1.2263	0	0	0	1.2263	0	0.7005	0	1.2263	0	0	0	1.2263	0	0	0	14.795	0	0	0	1.2263	3.4226	0	0	1.2263	0	1.208	0	1.2263	0	0	0	1.2263	0	0	0	14.795	0	0	0	1.2263	0	0	0	1.2263	0	5.5885	0	1.2263	0	0	0	1.2263	0	0	0	53.252	0	0	0	1.2263	0	0	0	1.2263	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Opex			Total		0	0	0	0	0	0	0	0	0	0	0	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296	4.4296
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Financing Cost			Total		0.0978	0.2933	0.4889	0.6844	2.6292	4.7207	5.454	6.9206	9.365	11.565	12.787	16.705	16.603	16.501	16.423	16.344	16.242	16.141	16.062	15.983	15.894	15.806	15.727	15.648	15.547	15.445	15.366	15.287	15.186	15.084	15.257	15.431	15.329	15.227	15.148	15.133	15.095	14.994	14.915	14.836	14.757	14.678	14.599	14.52	14.418	14.317	14.238	14.159	14.058	13.956	14.129	14.302	14.201	14.099	14.02	13.942	13.84	13.738	13.66	13.581	13.583	13.585	13.506	13.428	13.326	13.224	13.146	13.067	12.965	12.864	13.751	14.639	14.537	14.435	14.357	14.278	14.176	14.075	13.996	13.917
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Discount Rate			Total		0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.025	0.025	0.025	0.025	0.025
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Discount Factor			Total		0.9662	0.9335	0.9019	0.8714	0.842	0.8135	0.786	0.7594	0.7337	0.7089	0.6849	0.6618	0.6394	0.6178	0.5969	0.5767	0.5572	0.5384	0.5202	0.5026	0.4856	0.4692	0.4533	0.438	0.4231	0.4088	0.395	0.3817	0.3687	0.3563	0.3459	0.3358	0.326	0.3165	0.3073	0.2984	0.2897	0.2812	0.2731	0.2651	0.2574	0.2499	0.2426	0.2355	0.2287	0.222	0.2156	0.2093	0.2032	0.1973	0.1915	0.1859	0.1805	0.1753	0.1702	0.1652	0.1604	0.1557	0.1512	0.1468	0.1425	0.1384	0.1343	0.1304	0.1266	0.1229	0.1193	0.1159	0.1125	0.1092	0.106	0.1029	0.1	0.097	0.0942	0.0919	0.0897	0.0875	0.0854	0.0833
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Capex	Costed Risk		Total		1.2578	1.2578	1.2578	1.2578	1.2578	3.1444	6.2888	12.578	18.866	9.4332	6.2888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Capex	Optimism Bias		Total		1.1638	1.1638	1.1638	1.1638	26.798	2.9095	5.8189	11.638	17.457	8.7284	5.8189	0	0	0	0.3338	0	0	0	0.3338	0	0.1907	0	0.3338	0	0	0	0.3338	0	0	0	4.0271	0	0	0	0.3338	0.9316	0	0	0.3338	0	0.3288	0	0.3338	0	0	0	0.3338	0	0	0	4.0271	0	0	0	0.3338	0	0	0	0.3338	0	1.5212	0	0.3338	0	0	0	0.3338	0	0	0	14.495	0	0	0	0.3338	0	0	0	0.3338	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Net Present Cost (NPC)			Total		0.0945	0.2738	0.4409	0.5964	2.2137	3.8403	4.2868	5.2556	6.8714	8.1986	8.7585	13.986	13.448	12.931	12.446	11.98	11.518	11.074	10.659	10.259	9.8687	9.4934	9.1367	8.7932	8.4528	8.1255	7.8196	7.525	7.2331	6.9523	6.8097	6.6696	6.4422	6.2224	6.0169	5.8371	5.6561	5.4628	5.2821	5.1074	4.9383	4.7747	4.6165	4.4634	4.3102	4.1621	4.0239	3.8902	3.7563	3.6268	3.5543	3.483	3.3632	3.2475	3.1395	3.035	2.9303	2.8291	2.7348	2.6436	2.5669	2.4925	2.4093	2.3288	2.2481	2.1702	2.0975	2.0273	1.9568	1.8888	1.9279	1.9631	1.8957	1.8307	1.7699	1.7195	1.6685	1.6189	1.5727	1.5277
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Total NPC			Total	405.24266																																																																															

Table 5b: WC Level - Option Level Unit Cost Profile Table

Table Instruction	Option ID	Option Name	Cost Metric (£m)	Cost Sub-metric (£m)	Asset Life: Estimated average number of years an asset is considered useable before its value is fully depreciated.		2019-20	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09
Complete for all options >£100m (Feasible and preferred)	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Opex	Cost		Fixed		0	0	0	0	0	0	0	0	0	0	0	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252	0.9252
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Opex	Cost		Variable		0	0	0	0	0	0	0	0	0	0	0	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045	3.5045
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Land (Non depreciating)			Fixed		0	0	0	0	119.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Planning and Development (Non depreciating)			Fixed		5.4393	5.4393	5.4393	5.4393	5.4393	13.598	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Other Non-Depreciating Assets (Non depreciating)			Fixed		0	0	0	0	0	0	5.5047	11.009	16.514	8.257	5.5047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Process-Related Carbon Media Including GAC (4)		4	Fixed		0	0	0	0	0	0	0.1835	0.3671	0.5506	0.2753	0.1835	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0	0	0	1.5601	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Vehicles (4)		4	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Computers and Data Logging (4)		4	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Fencing (10)		10	Fixed		0	0	0	0	0	0	0.0316	0.0632	0.0947	0.0474	0.0316	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0	0.2684	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Domestic Meters (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Building Services (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Membranes (10)		10	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	ICA (Instrumentation, Control & Automation) (10)		10	Fixed		0	0	0	0	0	0	0.0733	0.1465	0.2198	0.1099	0.0733	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0	0.6227	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Plant and Machinery (15)		15	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	M&E (Mechanical and Electrical) Works on Pumping Stations and Treatment Works (20)		20	Fixed		0	0	0	0	0	0	1.9259	3.8519	5.7778	2.8889	1.9259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.37	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Raw Water and District Meters (20)		20	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Power Supply (25)		25	Fixed		0	0	0	0	0	0	0.5123	1.0245	1.5368	0.7684	0.5123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.3543	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.3543	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Steel/Timber/GRP Structures (30)		30	Fixed		0	0	0	0	0	0	0.0153	0.0306	0.0459	0.023	0.0153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1301	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Landscaping/Environmental Works (30)		30	Fixed		0	0	0	0	0	0	0.0607	0.1213	0.182	0.091	0.0607	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5155	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Borehole Screening and Casing (30)		30	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Bridges (40)		40	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Brick/Concrete Office Structures (50)		50	Fixed		0	0	0	0	0	0	0.2193	0.4387	0.658	0.329	0.2193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8643	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Treatment and Pumping Station Civils (incl. Intakes) (60)		60	Fixed		0	0	0	0	0	0	5.088	10.176	15.264	7.6321	5.088	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43.248	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Roads and Car Parks (60)		60	Fixed		0	0	0	0	0	0	0.592	1.1839	1.7759	0.8879	0.592	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0316	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Water Towers (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Borehole Installation (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Headworks/Valves (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Underwater Assets (60)		60	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Reinforced Concrete Tanks / Service Reservoirs (80)		80	Fixed		0	0	0	0	0	0	1.8747	3.7494	5.6241	2.8121	1.8747	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Weirs (100)		100	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Pipelines (100)		100	Fixed		0	0	0	0	0	0	7.101	14.202	21.303	10.651	7.101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Tunnels (100)		100	Fixed		0	0	0	0	0	0	4.014	8.028	12.042	6.021	4.014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Aqueducts (100)		100	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Embankment Works (250)		250	Fixed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AFW_AZ4_HI-ROC_WT1_CNO_LTR_wtw	LTR_100	Costed Risk			Fixed		1.2578	1.2578	1.2578	1.2578	1.2578	3.1444	6.2888	12.578	18.866	9.4332	6.2888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Affinity Water
Taking care of your water

Thames Water