

Regulators' Alliance for Progressing
Infrastructure Development

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Strategic regional water resource solutions: Standard gate one final decision for Thames Water to Southern Water Transfer



Contents

1.	Introduction	3
2.	Solution summary	4
3.	Summary of representations	6
3.1	Representations received	6
3.2	Our Response	7
3.2.1	Transparency of cost estimates and cost	7
3.2.2	Deployable output assessments and stochastic flow data	7
3.2.3	Carbon costing	8
3.2.4	Transporting water outside the Thames catchment	8
3.2.5	Sources of supply	8
3.2.6	Solution progression	8
3.2.7	Utilisation of gate one underspend at gate two	9
4.	Solution assessment summary	10
4.1	Solution progression and funding to gate two	10
4.2	Evidence of efficient expenditure	10
4.3	Quality of submission	11
4.3.1	Solution Design	11
4.3.2	Evaluation of Costs & Benefits	12
4.3.3	Programme and Planning	12
4.3.4	Environment	13

4.3.5	Drinking water quality	13
4.3.6	Board Statement and assurance	14
5.	Proposed changes to partner arrangements	15
6.	Actions and recommendations	16
7.	Gate two activities	17
8.	Incentives for gate two	18
	There will be no opportunity to remediate deficiencies identified at the assessment in order to defer penalties. Appendix: Actions and Recommendations	19

1. Introduction

The purpose of this publication is to set out our final decision in respect of the Thames Water to Southern Water transfer (T2ST) strategic regional water resource solution submitted for the standard gate one assessment by solution sponsors Southern Water and Thames Water¹. The solution includes six feasible options within it, each with three different capacities. Further information concerning the background and context of the Southern Water and Thames Water T2ST can be found in the T2ST publication document on the [Southern Water](#)² and [Thames Water](#) websites³.

This publication should be read in conjunction with the final decision letter issued to each solution sponsor. Both this document and final decision letters have been published on our website today.

The assessment process is overseen by RAPID, with input from the partner regulators Ofwat, the Environment Agency and the Drinking Water Inspectorate. The Environment Agency together with Natural England and, where a solution impacts Wales, Natural Resources Wales, have reviewed the environmental sections of the submissions, and have provided feedback to RAPID. The Consumer Council for Water provided input to the assessment on customer engagement.

The solution sponsors and other interested parties had the opportunity to respond to the draft decision during the representation period, which followed the publication of the draft decisions on 14 September 2021. We have taken all relevant representations into account in making our final decision.

We would like to thank Southern Water and Thames Water for the level of engagement, collaboration and innovation that they have exhibited during this stage in the gated process.

¹ Referred to in PR19 final determination as “Thames to Southern transfer”

² [Southern Water – Gate One Submission \(southernwater.co.uk\)](#)

³ [Thames Water – Gate One Submission \(thameswater.co.uk\)](#)

2. Solution summary

T2ST aims to transfer water from Thames Water to Southern Water's Hampshire area. As there is not currently a surplus of supply within the Thames Water Resource Zones, the transfer is dependent on the prior development and commission of an additional water resource option, namely the Severn to Thames Transfer (STT) or the South East Strategic Reservoir Option (SESRO).

There are six feasible sub-options summarised in Table 1 below including two potable water options and four raw water transfers. Capacities of 50 Ml/d, 80 Ml/d, and 120 Ml/d are being investigated for each option. A 200 Ml/d capacity will also be developed post gate one. A schematic of the transfer is shown in Figure 1 below.

Table 1. T2ST Sub-option Summary

Option	Water Type	Source	Description	Key Components
1	Potable	STT or SESRO	Transfer from Culham to Otterbourne	New treatment works at Culham, 76.5km pipeline, additional 7.1km Kingsclere spur main and 8.9km Andover spur main
2	Raw	STT or SESRO	Culham to Otterbourne	76.5km pipeline, additional 7.1km Kingsclere spur main and 11km Andover spur main, additional treatment capacity at Otterbourne, Andover, and Kingsclere
3	Raw	STT or SESRO	New intake on R. Thames upstream of Reading to Otterbourne. Supported by STT / SESRO	New intake on R. Thames, 64.7km pipeline, additional 6.3km Kingsclere spur main and 16.3km Andover spur main, additional treatment capacity at Otterbourne, Andover, and Kingsclere.
4	Potable	STT or SESRO	New intake on R. Thames upstream of Reading to Otterbourne. Supported by STT / SESRO	New intake and treatment works on R. Thames upstream of Reading, 64.7km pipeline, additional 6.3km Kingsclere spur main and 14.2km Andover spur main
5	Raw	STT or SESRO	Culham to Testwood	90.5km pipeline, additional 7.1km Kingsclere spur main and 8.9km Andover spur main, additional treatment capacity at Testwood, Andover, and Kingsclere
6	Raw	STT or SESRO	New intake on R. Thames upstream of Reading to Testwood	New intake on R. Thames, 76.7km pipeline with 6.3km Kingsclere spur main and 16.3km Andover spur main, additional treatment capacity at Testwood, Andover, and Kingsclere.

Figure 1. T2ST Schematic



3. Summary of representations

3.1 Representations received

We have received the following representations relevant to T2ST.

Table 2. Summary of Representations

Representation from	Summary of representation
<p>Group Against Reservoir Development (GARD)</p>	<p>Transparency of cost estimates GARD cites concerns over a lack of transparency in solution cost estimates generally, requesting further detail to the level that was included in the Fens reservoir gate one report</p> <p>Deployable output and stochastic flow data GARD is also concerned about a lack of transparency in deployable output (DO) assessments, suggesting the evidence should be made available for scrutiny of the assumptions, data, and outputs of the modelling.</p> <p>GARD has concerns over the reliability of stochastic river flow data, such as: inaccurate weather data for groundwater-dominated catchments; the stochastic weather base period not containing any long duration droughts; the base period excluding weather since 1997; and the geological difference in catchments not being reflected in the generated Thames and Severn flows.</p> <p>Carbon costing GARD asserts that the gate one reports are poor on the subject of carbon costing of strategic options and have shortcomings in the data presented.</p> <p>Transporting water outside the Thames catchment GARD do not believe that a transfer exporting water outside of the Thames catchment where it is already in such short supply makes strategic sense.</p> <p>Sources of supply GARD can see some merit in using the Severn to Thames Transfer (STT) as a source, but note that Severn Trent Water and United Utilities should also be participating companies in the T2ST if so. However, GARD do not think that the using STT as the source would be cost effective when the T2ST pipeline cost is added to the STT cost. GARD propose that Southern consider desalination at locations on the south coast in order to meet their water needs.</p>

	Solution progression GARD do not believe that T2ST should progress to gate two.
Thames Water and Southern Water	Thames and Southern Water have no concerns over the actions and recommendations raised by Ofwat/RAPID in our draft decision, and they will proceed to gate two intending to resolve each item. They enquire about the possibility of utilising the underspend of their gate one allowance for gate two activities. Their final and reconciled costs are £167,000 lower than those reported in the gate one submission.

3.2 Our Response

We have taken the representations into account in our final decisions and set out below our response to the key points and issues raised.

3.2.1 Transparency of cost estimates and cost

We do not consider information about solution costs to be material to gate one decisions. Gate one is a checkpoint and is the first opportunity to check the progress made by solution owners on investigations and development of solutions in the gated process. At gate one, all solutions were expected to progress to gate two and continue to receive ring-fenced funding unless there was a clear reason why they should not.

Solution costs will be considered further from gate two onwards and in regional plans and water resource management plans. We will provide companies with guidance on presenting and publishing solution costs in their gate two submissions.

3.2.2 Deployable output assessments and stochastic flow data

We consider that the work completed on the DO assessment is sufficient for gate one. The water companies will continue to develop the solutions and evidence surrounding them. Guidance will be provided on our expectations for a more detailed examination of deployable output at gate two. The use of stochastic flow data reflects the requirement to test droughts larger than those observed in the historic record, such as drought events with 1:500 year return periods. Solutions generation of stochastic flow data is expected to follow Water Resource Planning Guidelines Supplementary Guidance: Planning to be resilient to a 1 in 500 drought (England), and Supplementary Guidance: Stochastics. We will pass on the specific points raised to solution owners for consideration as they develop their deployable output assessments further.

3.2.3 Carbon costing

Gate one assessment of solution submissions took account of the fact that assessments of the carbon implications of the solution would inevitably contain a significant degree of uncertainty given the stage of solution development. We consider that the level of information presented on carbon was sufficient for gate one. Solution development to gate two should follow the Water Resources Planning Guidelines for WRMP24 section 8.3.2 which states expectations for accounting for and reducing greenhouse gas emissions. The design should consider; build nothing, build less, build clever and build efficiently throughout the development of the solution, with offsetting only as a last resort. We expect all direct mitigations to be included in the solution costs. The solution should also be considered by the water company within their wider carbon plans.

We will require any carbon assessment annexes to be published alongside the submission at gate two.

3.2.4 Transporting water outside the Thames catchment

Water resources planning at a regional and company level is following a best value approach. This allows consideration of how water transfers, particularly from new sources such as those considered for T2ST, can best be used to bring about best value at a national and regional scale, therefore going beyond Thames' catchment.

3.2.5 Sources of supply

We do not consider that it is necessary or appropriate for Severn Trent Water and United Utilities to be added as participating companies for this solution because this solution is concerned about investigating and developing a transfer route. Potential sources utilising this transfer route are being investigated and developed in other gated submissions and through the water resources planning processes.

The consideration by Southern Water of the use of desalination is outside the scope of this gate one decision.

3.2.6 Solution progression

We understand that the need, utilisation, deployable output, and timing of the scheme is to be determined by ongoing regional modelling and WRMP24 work as the solution was not a preferred option at WRMP19. We expect this work to continue and consider it is important

that investigation and development of this solution continues until this work is concluded. We therefore confirm our decision to progress this solution to gate two.

3.2.7 Utilisation of gate one underspend at gate two

Some solution owners raised concerns in their representations regarding whether gate two allowances would be sufficient for completion of gate two activities and suggested that gate one underspend should be carried forward to gate two. The percentage allocations to each gate in our Final Determination at PR19 were inherently imprecise and were based on our understanding of likely profile of activities to be carried out in progressing the development and investigation of solutions taking into account companies' proposals in this respect. We now have an improved understanding of the activities to be carried out at gate two and consider that it will be beneficial to allow funding allowance that has not been used at gate one to be made available to solution owners for carrying out gate two activities.

We have therefore decided to merge gate one and gate two allowances for this solution. This will allow any underspend on gate one activities to be used for gate two activities. We will continue to scrutinise expenditure to ensure that it is appropriate and efficient. Companies remain responsible for management of cost risk to meet gate requirements

4. Solution assessment summary

Table 3. Final decision summary

Recommendation item	Thames Water to Southern Water transfer
Solution sponsors	Southern Water and Thames Water
Should further funding be allowed for the solution to progress to gate two?	Yes
Is there evidence all expenditure is efficient and should be allowed?	Yes
Delivery incentive penalty?	No
Is there any change to partner arrangements?	No
Is there a need for a remediation action plan?	No

4.1 Solution progression and funding to gate two

The evidence suggests that the solution is a potentially valuable way of supplying water to customers. Based on our assessment of the potential solution costs and benefits we have concluded that the solution should progress through the gated process to gate two, and that further funding be allowed.

We are not changing the funding of this solution. This solution's total allowance and gate allowances remain the same as the final determination.

We have decided to merge the gate one and gate two allowances. This results in a total allowance of £3.12m being available at gate two. Companies remain responsible for management of cost risk to meet gate requirements.

4.2 Evidence of efficient expenditure

The PR19 final determination specified that any expenditure on activities outside the gate activities for the identified solutions (or solutions that transfer in) will be considered as inefficient and be returned to customers. We will consider whether gate activity is efficient by considering the relevance, timeliness, completeness, and quality of the submission which should be supported by benchmarking and assurance.

Our assessment of the efficient costs as spent on gate one activities results in an allowance for this solution of £0.63m (of £0.63m claimed). These costs reflect final and reconciled costs.

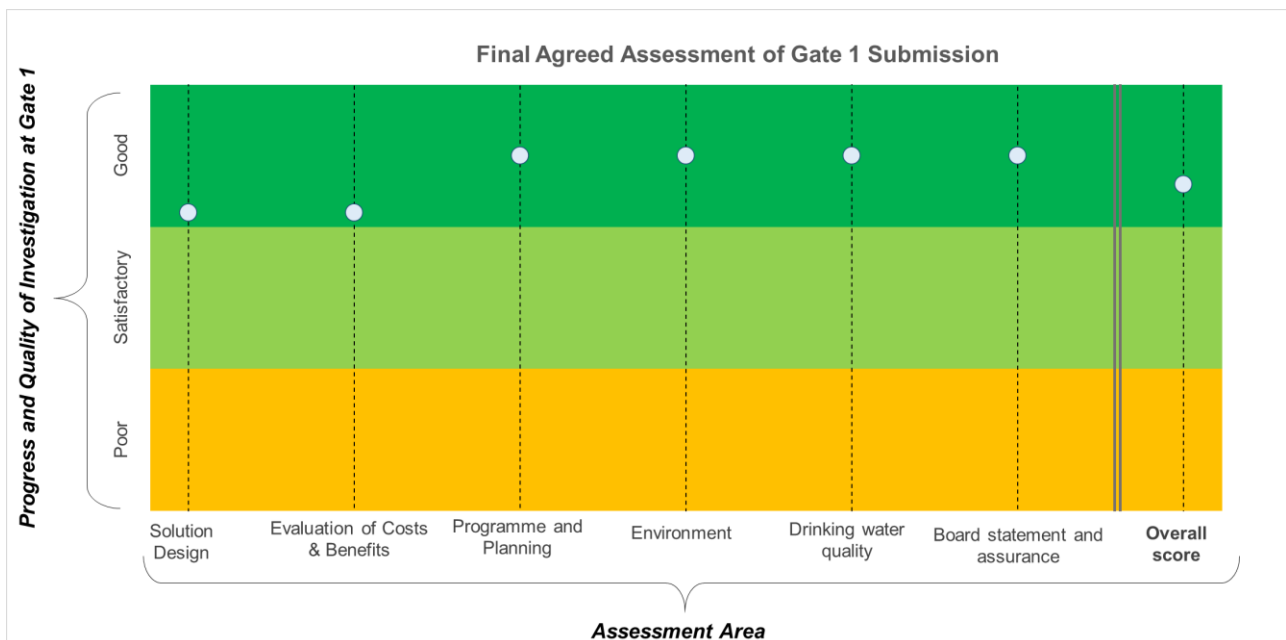
We have made no adjustments to the costs claimed.

4.3 Quality of submission

The aim of the assessment was to determine whether appropriate progress has been made towards delivery of the solution. We recognise at this stage solutions may be at different development points and the assessment takes this into account.

Figure 2 shows our assessment of the work completed on the solution, which was presented in the submission. Our assessment was made against the criteria of robustness, consistency, and uncertainty to grade each area of the submission as good, satisfactory, or poor in accordance with [our guidance published on 22 February 2021](#). We also assessed the Board assurance provided.

Figure 2. Submission assessment



Our overall assessment for the solution submission is that it is good (meets expectations).

4.3.1 Solution Design

Our assessment of the solution design considered the quality of the evidence provided on the initial solution and options; the anticipated operational utilisation of solutions; the interaction of the solution with other proposed water resource solutions and stakeholder and customer engagement. The assessment also considered whether information was provided on the context of the solution's place within company, regional and national plans.

We consider that the progress and quality of the investigation completed by Thames Water and Southern Water in developing the solution design at gate one has been good, although we expect to see this expanded upon with more detail in the gate two submission, and the submission fell short of expectations in some areas of solution design and solution interactions.

In particular, the submission provided a limited justification for the chosen capacities and the need for the solution in terms of the future demand deficit and potential environmental flow requirements. The submission also provided limited detail on how regional modelling will integrate spur connections such as the Kennet Valley spur and transfers to Portsmouth Water and Wessex Water.

4.3.2 Evaluation of Costs & Benefits

Our assessment of the evaluation of costs and benefits considered the quality of the information provided on initial solution costs; the societal, environmental and economic cost and benefits, water resource benefits and wider resilience benefits. The assessment also considered whether evidence was provided on how the solution delivers a best value outcome for customers and the environment.

We consider that Thames Water and Southern Water's evaluation of the costs and benefits of the solution for gate one has been good, although we expect to see this expanded upon with more detail in gate two submission, and the submission fell short of expectations in the areas of water resource benefits and wider resilience benefits.

In particular, the submission did not present the deployable output (DO) of the solution. We note that the submission was underspent on its gate one allowance and could have used the underspend to undertake its own modelling to progress the solution further. It also did not discuss how the solution could improve regional resilience to other water companies such as Portsmouth, Bournemouth and Wessex Water, as well as other wider benefits including those other than from resilience in water supply and economic benefits, such as environmental, flood, and multi-sector benefits.

Natural Capital Assessments, and Biodiversity Net Gain assessments need to be reassessed at gate two. Following outputs of regional modelling, wider benefits will need to be refined for the preferred option and the size and yield of the option will need to be confirmed.

4.3.3 Programme and Planning

Our assessment of the programme and planning considered whether Southern Water and Thames Water presented a programme with key milestones and whether its delivery is on

track. The assessment also considered the quality of the information provided on risks and issues to solution progression, the procurement and planning route strategy and subsequent gate activities with outcomes, penalty assessment criteria and incentives.

We consider the progress and quality of the gate one investigation completed by Thames Water and Southern Water regarding the programme and planning, risks and issues and the procurement and planning route strategy for T2ST has been good. Going into gate two, a full risks register should be shared with the Environment Agency to ensure a work programme is in place to address environmental risks.

4.3.4 Environment

Our assessment of environment considered the initial environmental assessment; the identification of environmental risks and an outline of potential mitigation measures; the detailed programme of work used to address environmental assessment requirements and the initial outline of how the solution will take into account the carbon commitments.

We consider that the progress and quality of the work presented in the gate one submission provided by Thames Water and Southern Water regarding the environmental assessment, potential mitigations, future work programmes and embodied and operational carbon commitments has been good.

In working towards gate two, sponsor companies should work with the Environment Agency and Natural England to ensure potential risks are addressed through a detailed work programme, including a review of the scope of monitoring and refining environmental assessments. Where impacts are identified appropriate mitigation should be investigated and agreed with environmental regulators.

4.3.5 Drinking water quality

Our assessment of drinking water quality considered drinking water quality and risk assessments; evidence that the solution has been discussed with the drinking water quality team and a plan for future work to develop Drinking Water Safety Plans (DWSPs).

We consider that the information provided in this submission on drinking water quality risks, stakeholder engagement and DWSPs for gate one was good. We expect to see further development of DWSPs, water quality monitoring, including for emerging contaminants, and wider stakeholder engagement with ongoing dialogue with the respective water quality teams in gate two.

4.3.6 Board Statement and assurance

The evidence provided relating to assurance has been assessed as good.

The solution sponsors have provided Board statements that indicate:

- their support of submission recommendations for solution / option progression;
- they are satisfied that progress on the solution is commensurate with the solution being construction ready for 2025-30;
- they are satisfied the work carried out to date is of sufficient scope, detail and quality as would be expected for a large infrastructure project of this nature at this stage; and
- that expenditure has been incurred on activities that are appropriate for gate one and is efficient.

These statements are accompanied by an explanation of the approach to assurance and a description of the evidence and information that the Boards have relied on in giving the statements.

5. Proposed changes to partner arrangements

There are no proposed changes to partner arrangements.

6. Actions and recommendations

Where the submission has not been assessed as ‘meeting expectations’ we have provided feedback on where we will seek remediation of the issues. We have also identified specific steps that solution owners should take in preparing for gate two.

We have categorised these remediation issues and steps into priority actions, actions and recommendations.

Priority actions are those that should have been completed at gate one and must now be addressed on a short timescale in order to make sure the solutions stay on track. They require urgent remediation in full and for this reason directly relate to the assessment of delivery incentives set out in this publication. The response to the priority actions will determine whether a delivery incentive is imposed; and the extent to which the delivery incentives can be mitigated by the solution sponsors. If all priority actions are satisfactorily completed then the penalty will not be imposed. If one or more of priority actions are not satisfactorily completed then the whole of the penalty will be imposed.

We have also identified actions that should be addressed in full in the gate two submission. The response to these actions will influence the assessment of the gate two submission.

Recommendations are issues where additional information or clarification could improve the quality of future submissions.

No priority actions have been identified for T2ST, therefore we do not require the solution sponsors to provide us with a remediation action plan. The full list of other actions can be found in the Appendix.

7. Gate two activities

The solution will continue to be funded to gate two as part of the standard gate track.

For its gate two submission, we expect Southern Water and Thames Water to complete the activities listed in [PR19 final determinations: strategic regional water resources solutions appendix](#) as expanded on in Section 15 of its gate one submission.

8. Incentives for gate two

For gate two we maintain the same arrangements for incentives as applied in gate one – that is, a maximum penalty of 30% of company's total efficient gate funding that could be applied to solutions that have not made adequate progress, where work is of inadequate quality, or the submission deadline is missed.


Penalties will be determined on a case by case basis taking into account:

- the level of completeness and the overall quality of the work carried out in investigating and developing the solution based on the evidence summarised in the submission;
- the evidence and justification provided where aspects of the work carried out fall short of expectations; and
- the impact on the decisions and delivery of solutions, including the extent to which deficiencies adversely impact customers.

Penalties will be applied through the PR24 reconciliation mechanism, as described in '[PR19 final determinations: Strategic water resource solutions](#)'.

There will be no opportunity to remediate deficiencies identified at the assessment in order to defer penalties. Appendix: Actions and Recommendations

Actions – to be addressed in gate two submission		
Number	Section	Detail
1	Solution Design	Complete regional modelling to determine the preferred SRO capacity.
2	Solution Design	Fully identify and assess the impacts of pipeline routes and construction on the environment, particularly on designated sites and river crossings.
3	Solution Design	Consider requirements for maintenance flows from the River Thames.
4	Solution Design	Update Table 3 (Inter-related schemes affecting need and timing of T2ST) to reflect the current understanding of the Havant Thicket delivery timing, and the requirement and timing of other strategic resolution solutions and other solutions when they are on differing timescales. Include the new Havant Thicket+ strategic resource solution in this table and update it at gate two to reflect the decision at Southern Water's accelerated gate two.
5	Solution Design	Ensure regional modelling considers the full range of spur connections and transfers to Portsmouth and Wessex Water. Potential supplies to Thames Water's Kennet Water Resource Zone and to South East Water should also be included in the scope of work.
6	Solution Design	Provide a detailed assessment of interdependencies and in-combination impacts with other strategic resource solutions and other solutions required for gate two following the outputs of regional modelling.
7	Evaluation of Costs & Benefits	Undertake regional modelling to quantify the water resource benefits of the solution. As outlined in the response to query TST008, this is expected to be a two-stage process, with an initial phase in late 2021 to model the solution, followed by an update where the updated solution is submitted into a second round of regional modelling in early 2022. The DO should be set out in terms of meeting the deficit.
8	Evaluation of Costs & Benefits	Further investigate how the solution could improve regional resilience to other water companies such as Portsmouth, Bournemouth, and Wessex Water. Include benefits other than from resilience in water supply and economic benefits, such as environmental, flood, and multi-sector benefits.



Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA
Phone: 0121 644 7500

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