

March 2023

**Strategic regional water
resource solutions:
standard gate two draft decision
for River Severn to River
Thames Transfer**

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1. Introduction

The purpose of this publication is to set out our draft decision about whether the River Severn to River Thames Transfer (STT)¹ solution should continue to receive development funding². The solution owners Thames Water, Severn Trent Water and United Utilities submitted their standard gate two reports on 14 November 2022 for assessment. Further information concerning the background and context of the Thames Water, Severn Trent Water and United Utilities STT can be found in the STT publication document on the [Thames Water](#) website³.

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

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, have reviewed the environmental sections of the submissions, and provided feedback to RAPID. The Consumer Council for Water provided input to the assessment on customer engagement. Natural Resources Wales is involved in an advisory capacity and has a decision-making role for any solution involving Wales, Welsh policy and legislation.

The solution owners and other interested parties can now respond to the draft decision. Representations are invited by email to rapid@ofwat.gov.uk and the representation period will close at 6pm on 11 May 2023. All representations will be considered before our final decision is published at 10am on 28 June 2023.

We will publish representations on our website at www.ofwat.gov.uk/regulated-companies/rapid, unless you indicate that you would like your representation to remain unpublished. We will also share representations with our partner regulators, Ofwat, the Environment Agency and the Drinking Water Inspectorate and with Natural England. Subject to the following exceptions, by providing a representation to this consultation you are deemed to consent to its publication.

If you think that any of the information in your response should not be disclosed (for example, because you consider it to be commercially sensitive), an automatic or generalised confidentiality disclaimer will not, of itself, be regarded as sufficient. You should identify specific information and explain in each case why it should not be disclosed (and provide a redacted version of your response), which we will consider when deciding what information to publish. As minimum, we would expect to publish the name of all organisations that

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

² [PR19 final determinations: Strategic regional water resource solutions appendix](#)

³ <https://www.thameswater.co.uk/about-us/regulation/strategic-water-resource-solutions>

provide a written response, even where there are legitimate reasons why the contents of those written responses remain confidential.

In relation to personal data, you have the right to object to our publication of the personal information that you disclose to us in submitting your response (for example, your name or contact details). If you do not want us to publish specific personal information that would enable you to be identified, our [privacy policy](#) explains the basis on which you can object to its processing and provides further information on how we process personal data.

In addition to our ability to disclose information pursuant to the Water Industry Act 1991, information provided in response to this consultation document, including personal data, may be published or disclosed in accordance with legislation on access to information – primarily the Freedom of Information Act 2000 (FoIA), the Environmental Information Regulations 2004 (EIR) and applicable data protection laws.

Please be aware that, under the FoIA and the EIR, there are statutory Codes of Practice which deal, among other things, with obligations of confidence. If we receive a request for disclosure of information which you have asked us not to disclose, we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances.

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

2. Solution Summary

2.1 Solution summary

The River Severn to River Thames Transfer (STT) enables a transfer of water from the River Severn to the River Thames. The solution forms part of the wider STT system composed of STT, Severn Trent Sources (STS) and North West Transfer (NWT). STT is composed of:

- **Interconnector:** the treatment and transfer of flows from the River Severn to the River Thames.
- **River Vyrnwy bypass pipeline:** connects flows from Lake Vyrnwy at Oswestry to the River Severn, thus mitigating any environmental impacts in the River Vyrnwy.
- **Shrewsbury Redevelopment:** the provision of 25Ml/d of treated water supply to Shrewsbury from the NWT. This will release flows into the River Severn that were previously abstracted to supply Shrewsbury.

Due to the risk of concurrent droughts in both the River Severn and River Thames, additional sources of water have been identified to augment the natural flows and ensure that a transfer can be maintained. These sources and their conveyance through the rivers are addressed in the NWT and STS gate two submissions.

Figure 1. River Severn to River Thames Transfer Solution Schematic



3. Solution assessment summary

Table 1. Draft decision summary

Recommendation item	River Severn to River Thames Transfer
Solution owners	Thames Water, Severn Trent Water and United Utilities
Should further funding be allowed for the solution to progress to gate three?	Yes, subject to any decisions taken at a Conditional Review Point
Is there evidence all expenditure is efficient and should be allowed?	Yes
Delivery incentive penalty?	No
Is there any change to partner arrangements?	Yes, set out in section 6.
Are there priority actions for urgent completion?	Yes, set out in section 4.1.
Are all priority actions and actions from previous gates addressed?	No, set out in section 4.2.
Suitable timing for gate three has been proposed	Yes, January 2025.

3.1 Solution progression to standard gate three

The evidence suggests that the solution is a potentially valuable way of supplying water to customers. Based on our assessment of a wide range of areas that could concern the progression of the solution, we have concluded that the solution should progress through the gated process to gate three, subject to the possibility that, after considering Thames Water's, Severn Trent Water's and United Utilities' submissions in response to the priority actions set out in Appendix A at the regular checkpoint in December 2023, we may decide to set a conditional review point (Conditional Review Point) at which we may decide that the solution should not progress beyond the Conditional Review Point or should only progress subject to further priority actions, actions or recommendations. Figure 2 below summarises the area of any progression concerns, including indication of the significance. The reasons for this assessment conclusion are set out in table 2 below.

Decisions on funding as a result of this progression decision, are set out in section 3.2.

Figure 2. Assessment of solution's progression concerns

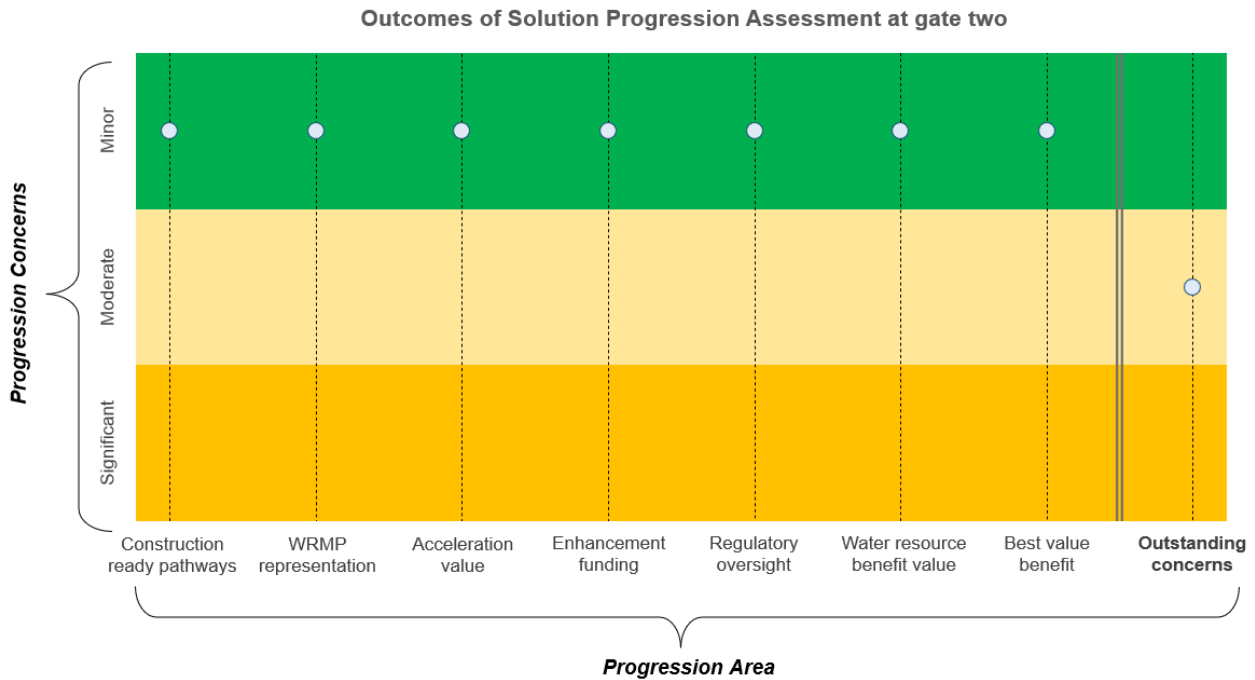


Table 2. Draft decision progression criteria

Progression criteria	River Severn to River Thames Transfer
Solution owners	Thames Water, Severn Trent Water and United Utilities
Is the solution in a preferred or alternative pathway in relevant regional plan or WRMP (where applicable) to be construction ready by 2030?	Yes, the solution is chosen in Thames Water draft Water Resource Management Plan 2024 (WRMP24), as a solution on its preferred pathway, which is the relevant plan for the standard track. The solution is also in the Water Resources South East (WRSE) and Water Resources West (WRW) draft regional plan. The solution will be construction ready by 2028.
	No further action is required on this progression criteria.
Do regulators have any significant concerns with the solution's inclusion or non-inclusion in a WRMP or regional plan or with any aspects that may impact its selection, to a level that they have (or intend to) represent on it when consulted?	No, the regulators do not have concerns on how the solution is represented, or the information about it, in Thames Water's, Severn Trent Water's and United Utilities' draft WRMP24. However, we note differences between the WRSE and WRW plans on the timing of the River Severn to River Thames Transfer. WRW and WRSE should represent this option consistently in the final plans.
	No further action is required on this progression criteria.
Is there value in accelerating the solution's development to meet a company's or region's forecast supply deficit?	Yes. A solution is required to address Thames Water's forecast deficit.
	No further action is required on this progression criteria.

Does the solution need continued enhancement funding for investigations and development to progress?	Yes. Continued funding is required to develop a solution to be delivered in time for the planned construction ready date.
	No further action is required on this progression criteria.
Does the solution need the continued regulatory support and oversight provided by the Ofwat gated process and RAPID?	Yes. The solution will continue to benefit from the regulatory support and oversight provided by being included in the RAPID programme.
	No further action is required on this progression criteria.
Does the solution provide a similar or better cost / water resource benefit ratio compared to other solutions?	Yes. This solution does provide a similar or better cost / water resource benefit ratio compared to other solutions.
	No further action is required on this progression criteria.
Does the solution have the potential to provide similar or better value (environmental, social and economic value – aligned with the Water Resources Planning Guideline) compared to other solutions?	Yes, this solution has the potential to provide similar or better value (environmental, social and economic value – aligned with the Water Resources Planning Guideline) compared to other solutions.
	No further action is required on this progression criteria.
Does a regulator or regulators have outstanding concerns that have not been addressed through the strategic planning processes taking into account proposed mitigation?	Yes. Outstanding concerns remain around stakeholder engagement for Wales, key programme delivery risks and impacts on the Severn Estuary Habitat Directive site, as well as Water Framework Directive compliance.
	This progression concern is addressed in priority actions 1 and 2 in Appendix A of this document.

3.2 Solution funding to standard gate three

We are changing the funding of this solution. The details of this funding decision are set out in Table 3 below, and details on forward programme in section 7.1.

Table 3. River Severn to River Thames Transfer funding allowances

	Gate one	Gate two	Gate three	Gate four	Total
River Severn to River Thames Transfer gated allowance	£6.66m	£9.99m	£40.34m	£26.64m	£83.62m
Comment	10% of development allowance calculated as 6% of total solution costs	15% of development allowance calculated as 6% of total solution costs	65% of the forecast overspend has been added on top of the previous allowance determined at PR19	40% of development allowance calculated as 6% of total solution costs	Total development allowance calculated as 6% of total solution costs
Previous Allowance	£6.66m	£9.99m	£23.31m	£26.64m	£66.60m
Change from Previous Allowance	£0.00m	£0.00m	£17.03m	£0.00m	£17.03m

This funding has been revised to account for forecast costs at gate three. We have determined that across all solutions gate three costs have risen due to factors such as increases in solution design costs, changes in scope and additional funding required to develop the environmental impact assessment (EIA), water quality assessments, ground investigations and other environmental field studies and assessments. We determine that providing the original gate three allowance combined with 65% of their projected overspend at gate three is appropriate. We do not feel that it would be appropriate to provide solutions with their complete projected overspend at gate three as these projections are not fully mature, and we want to ensure that solutions are still incentivised to keep costs as low as possible.

In addition, we are changing the cost sharing rate that is applied to the solution. At gate three, the solution owners will be responsible for 80% of any overspend. Furthermore, solution owners will be able to retain 25% of any total underspend at gate three, while the remaining 75% will be returned to customers. This diverges from the 50% cost sharing that was outlined in the [PR19 final determinations: Strategic regional water resources solution appendix](#).

3.3 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.

River Severn to River Thames Transfer has carried forward £2.65m underspend from gate one, increasing the allowance available to them at gate two to £12.63m.

Our assessment of the efficient costs as spent on standard gate two activities results in an allowance for this solution of £7.21m (of £7.21m claimed). River Severn to River Thames Transfer has therefore underspent its combined gates one and two allowance by £5.43m and may take this underspend forward to gate three, subject to any decisions taken at a Conditional Review Point, increasing the allowance available to them at gate three to £45.76m (when rounded down).

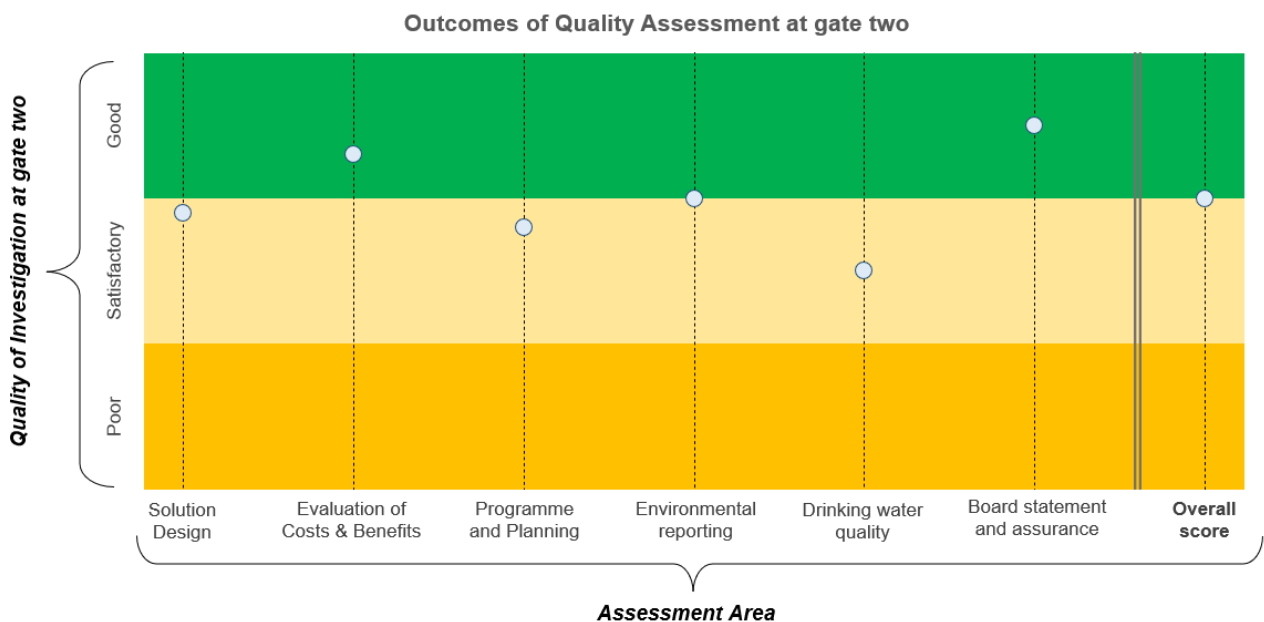
From gate two, we will move to look at the cumulative gate spend against the cumulative total allowance, across all gates consistent with the activities being undertaken. For example, any gate four allowance that is brought forward towards gate three should be for the purpose of early gate four activities. Overspends and underspends are then to be managed through cost sharing between the water company and customers. As River Severn to River Thames Transfer is progressing to gate three, this will apply here, subject to any decisions taken at the Conditional Review Point.

3.4 Quality of solution development and investigation

The aim of the assessment was to determine whether gate two activities have been progressed to the completion and quality expected, for the continued development of the solution.

Figure 3 shows our assessment of the work completed on the solution, which was presented in the gate two 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 the [standard gate two guidance](#), (updated version published on 12 April 2022). We also assessed the Board assurance provided.

Figure 3. Assessment of quality of investigation



Our overall assessment for the solution submission is that it is a good submission but falls short of meeting gate two expectations in some areas including solution design, programme and planning and drinking water quality. We explain our assessment of each individual area, including any shortfalls in expectations, in the sections below. We have not applied any delivery incentive penalties as a result this assessment of quality, as further detailed in section 4.

3.4.1 Solution Design

Our assessment of the solution design considered the quality of the evidence provided on the initial solution and sub-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 Severn Trent Water, Thames Water and United Utilities (the companies) to have provided partially sufficient evidence of progress in developing the solution design for gate two. They have fallen short in providing enough evidence in the areas of utilisation, the interaction of the solution with other proposed water resource solutions, stakeholder and customer engagement, and alignment with company, regional and national plans.

Alignment with company, regional and national plans require improvement. The companies should confirm preferred volumes and configuration of the solution as soon as possible, ensuring that WRW and WRSE regional plans align. We expect an update on final alignments and proposals at the regular checkpoint in December 2023.

We require more evidence about anticipated operational utilisation of the solution including:

- further breakdown of utilisation by return periods to understand how the solution may be used in different events;
- further explanation of how the utilisation of the solution may change with interaction of South East Strategic Reservoir Option (SESRO), Thames to Affinity Transfer (T2AT) and Thames to Southern Transfer (T2ST);
- more detailed explanation about conjunctive benefits with other solutions, such as SESRO, T2AT and T2ST.

There has been significant engagement work, including considering Wales and Welsh legislation, delivering in response to the action at gate one "Ensure Welsh stakeholders and customers are included in solution specific engagement". However, this has focused on strategic engagement in gate two, primarily using the Water Resources West Regional Plan engagement work.

Stakeholder and customer engagement requires further development. The development of an engagement plan must occur before the gate three submission. This needs to include who, where, how and why Welsh stakeholders will be engaged. This should include the wider statutory regulators like Cadw/Planning and Environment Decisions Wales (PEDW) using a "no surprises" approach. The engagement plan should be provided by the regular checkpoint in December 2023 and ongoing updates provided through the regular checkpoints before gate three on its implementation, progress and how customer and stakeholder views have/will inform key decisions. This engagement plan, in conjunction with North West Transfer, should address the 25% of stakeholder reported feedback that was negative towards water transfer.

3.4.2 Solution costs

Our assessment of the unit costs of delivering the River Severn to River Thames Transfer is that they are reasonable at this stage and cost changes from gate one to gate two have been sufficiently explained and are as a result of detailed development of the solution or changing market conditions. For instance, there has been a reduction in the size of pipes and the size of the break pressure tank. The assessment also considers the use of the solution as a drought resilience asset, and therefore cost per capacity is often a more appropriate metric than cost per projected utilisation. We will continue to scrutinise cost estimate changes from gate two to gate three.

3.4.3 Evaluation of Costs and Benefits

Our assessment of the evaluation of costs and benefits considered the quality of the information provided on initial solution costs; the social, 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 Severn Trent Water, Thames Water and United Utilities have provided sufficient evidence of evaluating the costs and benefits of the solution to an appropriate standard for gate two. We recognise and welcome the significant work undertaken in the wider benefits study and welcome the assessment against the Sustainable Management of National Resources principles and Well-being in respect of Wales.

We would welcome a deep dive session across all three STT system solutions early in gate three (including North West Transfer and Severn Trent Sources) to explore how environmental metrics have been considered and gain more clarity around the wider socio-economic benefits, including all ecosystem service benefits and cultural benefits in relation to Wales, rather than just environmental benefits. This session would clarify how best value metrics link to the wider benefits study and where WRMP24 best value guidance and the public value principles from Ofwat have been followed. For example, what has been considered for socio-economic metrics and how this has scored. For example, local markets, labour, skills, jobs, supply chains etc. and how would these benefits be maximised through development and delivery of the solution.

3.4.4 Programme and Planning

Our assessment of the Programme and Planning considered whether Thames Water, Severn Trent Water and United Utilities 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 evidence provided by Severn Trent Water, Thames Water and United Utilities regarding the programme and planning, risks and issues and the procurement and planning route strategy for the River Severn to River Thames Transfer to be partially sufficient in terms of detail and quality for gate two. However, additional work is required in the areas of:

- risks and issues to solution progression;
- the procurement and planning route strategy;
- subsequent gate activities with outcomes, penalty assessment criteria and incentives.

We welcome the progress on the gate one action to "demonstrate full understanding of the risks to the solution from potential regulatory barriers, this includes risks and issues associated with the Habitats Regulations ". However, we have significant concerns about the considerable programme risk that remains because of the potential impact on the Severn Estuary Habitat Regulations site. We recognise that mitigation in the form of further modelling, monitoring and trial treatment programmes has been proposed in the gate two submission. To manage this programme risk we have set a priority action for these mitigations in terms of further monitoring and modelling to be completed by the regular checkpoint in December 2023. In addition, we expect the solution team to work closely with the Minworth RAPID solution to ensure its trial treatment programme delivers the required discharge quality.

While the programme and planning score has been marked down as requirements that solution owners were funded to meet have not been met, we have made a decision that there is no longer a need for value for money assessments for RAPID solutions and therefore no associated gate two action is required.

Work provided for subsequent gate activities with outcomes, penalty assessment criteria and incentives is lacking to an extent. Clarification is required around how risk scores are defined and justification is needed for variation from quarterly risk reporting.

3.4.5 Environment

Our assessment of Environment considered the initial option-level 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 Severn Trent Water, Thames Water and United Utilities to have provided sufficient evidence of progress in the environmental assessment, potential mitigations,

future work programmes and embodied and operational carbon commitments for gate two for the most part.

However, there remains concerns in the category of risks and potential mitigations, around the proposed advanced treatment processes at the Minworth and Netheridge Wastewater Treatment Works. We have set a priority action to address this concern that must be completed by the regular checkpoint in December 2023.

3.4.6 Drinking water quality

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

We consider Severn Trent Water, Thames Water and United Utilities to have provided partially sufficient evidence of progress in the drinking water quality risk assessment, and future work around Drinking Water Safety Plans for gate two.

However, the submission is lacking in the area of drinking water quality and risk assessments. The impact of the solution on all the existing downstream abstractions and their treatment capability has not been fully assessed.

It is important that the Strategic Water Quality Risk Assessment (SWQRA) considers any impact on treatment at receiving water treatment works (WTWs), particularly as changes in water source may disrupt the biological layers in slow sand filtration used in a number of potential receiving WTWs. The need for any additional mitigation/treatment at these sites needs to be fully quantified and evidenced. Ongoing monitoring will help to inform Water Quality Risk Assessments and Drinking Water Safety Plans (DWSPs) receiving this water.

The submission provides poor evidence that the solution has been presented to relevant Drinking Water Quality teams, including those at downstream water companies. We have set two priority actions firstly, to ensure all Drinking Water Quality teams are engaged, and secondly, to review South East Water's DWSP for River Thames abstractions and include this in the SWQRA.

We would welcome clarification around:

- the SWQRA and whether an increase in pathogen loading at treatment works would present a treatment challenge. For example, although crypto risk was high and remains high, would increases in raw water loading require any additional treatment at some works e.g. treatment works without UV systems;
- whether the potential increased loading into the river has been formally reviewed;

- whether any increase in pathogen loading from the scheme exceed current disinfection operational envelopes;
- whether by-products from the additional treatment at Minworth have been considered e.g., chlorate or trihalomethanes.

3.4.7 Board Statement and assurance

The evidence provided relating to assurance is sufficient for this stage of the gated process.

We consider that the Boards of Severn Trent Water, Thames Water and United Utilities have provided a comprehensive assurance statement and have clearly explained the evidence, information, and external / internal assurance that they have relied on in giving the statement.

4. Actions and recommendations

Where the submission has not been assessed as ‘meeting expectations’ in the quality assessment, or progression concerns have been raised, 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 standard gate three.

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 two 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.

Actions are those that should be addressed in full in the standard gate three submission. The response to these actions will influence the assessment of the gate three submission.

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

We have also assessed progress on actions and recommendations from gate one.

4.1 Actions and recommendations from gate two assessment

Six priority actions have been identified for the River Severn to River Thames Transfer, which should be delivered by the dates identified in appendix A. If solution owners cannot meet these deadlines please explain this in the representation.

Thirteen actions and recommendations have been identified for the River Severn to River Thames Transfer, which should be fully addressed at the gate three submission. Progress against actions/recommendations will be tracked as part of regular checkpoints the solution holds with us whilst undertaking gate three activities.

The full list of priority actions, actions and recommendations for the River Severn to River Thames Transfer can be found in Appendix A.

4.2 Actions and recommendations from gate one assessment

We have assessed whether the River Severn to River Thames Transfer has met actions that were set out as a result of our gate one assessment.

No priority actions were identified for the River Severn to River Thames Transfer,

Twelve actions and recommendations were identified for the River Severn to River Thames Transfer, which were expected to be fully addressed at the gate two submission.

We have decided that the actions have not been fully addressed in the gate two submission. Further detail of our conclusion against each individual action is shown in Appendix B.

5. Delivery Incentive Penalty

We have not applied delivery incentive penalties to this solution, as a result of the assessment carried out on the gate two submission.

6. Proposed changes to partner arrangements

There are the following changes proposed to partner arrangements from gate two.

Thames Water, Severn Trent Water and United Utilities propose that accountability for the interconnector, including managing the delivery of the Development Consent Order (DCO) and DPC elements of the interconnector and river conveyance, lies solely with Thames Water going forwards. Continued joint working and partnership between Thames Water, Severn Trent Water and United Utilities is proposed for STT system co-ordination activities and the development of the River Vyrnwy Bypass pipeline.

The gate three split in development costs to the end of AMP7 is proposed to be changed to match the changes in accountability, with a split of 80:10:10 between Thames Water, Severn Trent Water and United Utilities. The change in partner arrangements must be from gate two onwards or it can be delayed until gate three. It cannot change at AMP cycles.

7. Gate three activities and timing

The solution will continue to be funded to gate three as part of the standard gate track, subject to any decisions at any Conditional Review Point.

For its gate three submission, we expect Thames Water, Severn Trent Water and United Utilities to complete the activities listed in [PR19 final determinations: strategic regional water resources solutions appendix](#), as expanded on in section 7 of the solutions gate two submission. Activities are expected to be completed in line with delivery incentives and expectations set out in [RAPID's gate three guidance](#). We also expect the actions listed in appendix A to be addressed.

7.1 Gate three timing

Thames Water, Severn Trent Water and United Utilities have proposed a date for gate three of January 2025 with a proposed checkpoint in December 2023. This is proposed alongside a forward programme of gate four in October 2026, proposed planning application submitted in July 2026, solution construction ready in 2029, and solution operational in 2033.

We agree that River Severn to River Thames Transfer's gate three should be January 2025. This aligns gate three with solutions on a similar programme, and for RAPID to efficiently assess progress of activities, ahead of the solutions proposed planning application.

We have also decided that there may be a Conditional Review Point. After we have considered Thames Water's, Severn Trent Water's and United Utilities' submissions in response to the priority actions set out in Appendix A at the regular checkpoint in December 2023, we will confirm to Thames Water, Severn Trent Water and United Utilities whether there will be a Conditional Review Point and the date of the Conditional Review Point, if there is to be one. Any Conditional Review Point will be in addition to the regular checkpoints that the companies hold with us.

We agree with the forward programme for gate four.

The forward programme proposed by the solution is in line with the principles of RAPID's standard programme. Funding arrangements are set out in section 3.2 of this document.

8. Next steps

Following publication of this standard gate two draft decision solution, owners and other interested parties are invited to respond to the draft decision. Representations, including evidence from solution owners that priority actions (identified in the Appendix) have been addressed, can be made by email to rapid@ofwat.gov.uk and will close at 6pm on 11 May 2023.

All representations will be considered before our final decision is published at 10am on 28 June 2023.

Appendix A: Gate two actions and recommendations

Priority Actions – to be addressed by the dates specified		
Number	Area	Detail
1	Solution Design	<p>Provide to RAPID a detailed plan for stakeholder and customer engagement (strategic and local). This plan should:</p> <ul style="list-style-type: none"> • explain how customer and stakeholder views have informed and will inform key decisions; • demonstrate how relevant local, strategic and regulatory Welsh stakeholders are consulted eg Cadw/PEDW/Hafren Dyfyrdyw; • explore the gate two engagement feedback that 25% of stakeholders were negative towards water transfers, identifying any implications for the SRO progression; • clarify the extent to which results from WRW online consultation on transfers through Idea Stream platform influenced solution design; and • seek views from CCW and explain subsequent actions as a result of this engagement. <p>This will be required by the regular checkpoint in December 2023.</p>
2	Programme and Planning	<p>Deliver the mitigations to reduce the uncertainty around the risks to the Severn Estuary Habitats Regulations site and its functionally linked habitat. These mitigations were proposed in the gate two submission and are composed of further modelling, monitoring and working closely with Minworth SRO to ensure its trial treatment programme delivers the required discharge quality. This action should be completed by the regular checkpoint in December 2023.</p>
3	Environment	<p>Provide information by the regular checkpoint in December 2023 on the proposed advanced treatment processes at the Minworth and Netheridge WwTWs, to fully understand the efficiency of the proposed treatment and the overall risk to the ecological features of the Severn Estuary Habitats Regulations site and associated tributaries.</p>
4	Drinking Water Quality	<p>Review and include the South East Water Drinking Water Safety Plan (DWSP) for River Thames abstractions in the Strategic Water Quality Risk Assessment (SWQRA) by the regular checkpoint in December 2023.</p>
5	Drinking Water Quality	<p>Provide evidence that all relevant Drinking Water Quality teams have been consulted about the scheme and their views taken into account. This should include those teams at the downstream water companies (including South East Water) as not all appear to have been included in the assessment so far. This action must be completed by the regular checkpoint in December 2023.</p>
6	Solution Design	<p>Confirm to RAPID that the solution aligns with Thames Water, United Utilities and Severn Trent Water's Water Resource Management Plans (WRMP) and relevant Regional Plans. This will be required by the regular checkpoint in December 2023.</p>

Actions – to be addressed in standard gate three submission		
Number	Area	Detail
1	Solution Design	Provide further breakdown of utilisation by return periods to understand how the solution may be used in different events.
2	Solution Design	Provide further explanation of how the utilisation of the solution may change with interaction of South East Strategic Reservoir Option (SESRO), Thames to Affinity Transfer (T2AT) and Thames to Southern Transfer (T2ST) (as noted in the solution interactions section) .
3	Solution Design	Currently the solution's need has been presented on an earliest available basis, given uncertainties of the solution's selection ahead of final WRMPs. Provide clearer context of the solution's needs as currently selected, and a RAPID gate and construction ready programme that results from this.
4	Solution Design	Explain the conjunctive benefits with other solutions such as SESRO, T2AT and T2ST.
5	Solution Design	Confirm preferred volumes and configuration of the solution. Confirm to RAPID that the solution aligns with Thames Water, Severn Trent Water and United Utilities Water Resource Management Plans (WRMP) and relevant Regional Plans at the next available regular checkpoint meeting after the publication of the WRMPs and Regional Plans
6	Programme and Planning	Clearly explain how risk scores in table 7-5 in the main report of the gate two submission are calculated and defined.
Recommendations		
Number	Area	Detail
1	Solution Design	Prioritise and present work around selecting preferred pipeline pathways.
2	Solution Design	Provide information on any revised figures after the regional reconciliation is completed in regular checkpoint meetings with RAPID.
4	Costs and Benefits	Explain the solution benefits in more explicit detail. RAPID would welcome a deep dive session before the regular checkpoint in December 2023 to understand the best value metrics in more detail across all three Severn to Thames Transfer system solutions (including NWT and STS).
4	Costs and Benefits	Further define the water resource benefit at different return periods to understand the benefit the solution may bring under different events using modelling.
5	Programme and Planning	Explain how the risk table in the gate two submission varies from the quarterly risk reporting.
6	Drinking Water Quality	The Strategic Water Quality Risk Assessment (SWQRA) S3-354, considers pathogens to high risk. However, it was unclear whether the SWQRA considered if

		<p>an increase in pathogen loading at treatment works would present a treatment challenge. For example, although crypto risk was high and remains high, explain whether increases in raw water loading require any additional treatment at some works, i.e. those treatment works without UV systems. Whilst there probably is not an increased loading as there is already significant effluent inputs into the River Thames, explain whether this been formally reviewed. Explain whether any increase in pathogen loading from the scheme would exceed current disinfection operational envelopes.</p>
7	Drinking Water Quality	<p>In respect to the Minworth reuse, confirm if by-products from the additional treatment have been considered e.g. chlorate, trihalomethanes.</p>

Appendix B: Gate one actions and recommendations

Actions – addressed in standard gate two submission			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	Ensure Welsh stakeholders and customers are included in solution specific engagement	We do not consider that United Utilities, Severn Trent or Thames Water have provided sufficient evidence of progress in addressing this action. Whilst there was stakeholder engagement at a strategic level and this did include the Welsh Stakeholders, wider stakeholders and regulators such as Cadw and PEDW and local stakeholders were not engaged. An engagement plan must therefore be provided in gate three (see priority action 1).
2	Costs and Benefits	Further work is required on elements of the solution which impact on Wales ecosystem resilience. This will achieve sustainable management of natural resources as well as helping to achieve goals set out in the Wellbeing of Future Generations (Wales) Act 2015. Any proposal which has implications for Wales must meet the requirements of this Act and the Environment (Wales) Act 2016. This is in addition to the natural capital and biodiversity net gain requirements for England.	We consider that the companies have provided sufficient evidence of progress in addressing this action. The companies have undertaken work that looks at sustainable management of natural resources etc, however, we require more consideration of the broader socio-economic and cultural element rather than the environmental element of the legislative requirements for gate three.
3	Costs and Benefits	Present the outcomes of the resilience assessments of the solution in submission documents, with a focus on comparisons between the routing options. Investigate multi sector benefits the solution could provide. The solution also needs to consider the benefits to Wales as required under Welsh legislation	We consider that the companies have provided sufficient evidence of progress in addressing this action. Multi-sector benefits seemed to be restricted to tourism and recreation with little consideration to cultural benefits, social or economic benefits across the whole scheme (eg jobs, supply chains etc). A broader understanding of what is possible across social, economic, environmental and cultural (Wales opportunities/impacts) will be required at gate three, even if the evidence points to little benefit with respect to Wales.
4	Programme and Planning	Demonstrate full understanding of the risks to the solution from potential regulatory barriers, this includes risks and issues associated with the Habitats Regulations	We consider that the companies have provided sufficient evidence of progress in addressing this action. Considerable work has been carried out in gate two assessing the functionally linked habitat

			and pathways to the Severn Estuary Habitats Regulations site. This includes Water quality monitoring and modelling including Olfactory cues, hydraulic modelling and ecology monitoring. Uncertainty on the likely impact still remains and further work is planned in gate three.
5	Environment	Ensure environmental assessments comply with the Environment (Wales) Act 2016 and Well-being of Future Generations (Wales) Act 2015.	We consider Thames Water, Severn Trent Water and United Utilities to have met this gate one action regarding Welsh legislation, but there is further work required to engage Welsh stakeholders as per the legislative requirements and to demonstrate benefits to Wales, for gate three.
6	Environment	Investigate the impact of the solution on the integrity of the Severn Estuary Special Area of Conservation.	We consider Thames Water, Severn Trent Water and United Utilities to have provided sufficient evidence of progress in addressing this action.
7	Environment	Illustrate the relationship between carbon reduction, sector net zero commitments and solution design and delivery choices. Show methods used for carbon calculation, considering framework and national policy guidance.	We consider Thames Water, Severn Trent Water and United Utilities to have provided sufficient evidence of progress in addressing this action. The gate two carbon assessment met the guidance requirements.
Recommendations			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	Ensure relationships with receiving SROs in the south east are closely managed, and the communication of benefits to each solution are aligned (for example with SESRO).	We do not consider Thames Water, Severn Trent Water and United Utilities to have provided sufficient evidence of progress in addressing this recommendation. The companies should engage with drinking water quality teams at receiving water companies in the south east.
2	Solution Design	Develop a stakeholder engagement plan, including wider and local stakeholders, once decision on preferred route has been made.	We do not consider Thames Water, Severn Trent Water and United Utilities to have provided sufficient evidence of progress in addressing this recommendation. This is reflected in the priority action for a stakeholder engagement plan to be presented by regular checkpoint in December 2023.
3	Costs and Benefits	Further integrate social and amenity values into a costs & benefits assessment of the solution. Provide	We do not consider Thames Water, Severn Trent Water and United Utilities to have provided sufficient evidence of

		specifics on work being undertaken to adhere to Welsh legislation.	progress in addressing this recommendation. This is reflected in the priority action for a stakeholder engagement plan to be presented by regular checkpoint in December 2023.
4	Costs and Benefits	Further explore uncertainties in Deployable Output modelling following Water Resources South East modelling outputs and River Severn to River Thames transfer model build, including the solutions unsupported flow assumptions. We acknowledge this is being incorporated into gate two activities.	The companies have provided updates in their gate two submission which further advances their modelling work in line with the expectations of this recommendation. The companies acknowledge there is more to do in early gate three with expanded model builds and scenarios. We will engage through the regular checkpoints prior to gate three to keep up to date with the modelling programme.
5	Costs and Benefits	Investigate and present potential wider resilience benefits of the solution, beyond the resilience of the solution itself, even if these opportunities are limited by the solution type.	The STT solution team have provided updates in their gate two submission which further advances their investigations into wider benefits, with a particular focus on opportunities for ecosystem benefits. This is in line with our expectation for this recommendation. We will engage with the solution team through the regular checkpoints prior to gate three to keep up to date with wider benefit opportunities.

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is a non-ministerial government department.
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