

June 2023

**Strategic regional water
resource solutions:
standard gate two final decision
for Severn Trent Sources**

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1. Introduction

The purpose of this publication is to set out our final decision about whether the Severn Trent Sources¹ solution should continue to receive development funding². The solution owner Severn Trent Water submitted their standard gate two reports on 14 November 2022 for assessment. Further information concerning the background and context of the Severn Trent Water Severn Trent Sources can be found in the Severn Trent Sources publication document on the Severn Trent Water website³.

This publication should be read in conjunction with the final decision letter issued to each solution owner. Both this document and final 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 and Natural Resources Wales (for solutions involving Wales), 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.

The solution owners and other interested parties had the opportunity to respond to the draft decision during the representation period, which followed the publication of the decisions on 30 March 2023. We have taken all relevant representations into account in making our final decision.

We would like to thank Severn Trent 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 “Severn Trent Sources”

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

³ <https://www.severntrent.com/about-us/our-plans/sro-plans/>

2. Solution Summary

2.1 Solution summary

Severn Trent Sources (STS) discharges treated final effluent from Netheridge wastewater treatment works at a location near to Deerhurst, currently identified as Haw Bridge. This will provide raw water support to the River Severn to River Thames Transfer (STT). STT will abstract the same volume of water and transfer it to the River Thames. The solution forms part of the wider River Severn to River Thames Transfer system composed of STS, STT and North West Transfer (NWT).

Figure 1. Severn Trent Sources Solution Schematic



3. Summary of representations

3.1 Representations received

We have received the following representations relevant to the Severn Trent Sources.

Table 1. Summary of representations

Representation from	Summary of representation
<p>Members of the public</p>	<p>Loss of amenity</p> <ul style="list-style-type: none"> • Members of the public raised concerns around the impact on amenity value of the River Severn particularly around potential impacts on water levels and water quality. • They believe that water turbulence caused by the inflows and outflows of the proposed projects will make sailing in this part of the river extremely dangerous and therefore any proposals to proceed must include the very substantial costs of relocating the sailing club. • They are also concerned about the loss of amenity value of the River Severn due to any attempt to site proposed works in this position. • They are concerned that water quality will be lower which will affect the health of recreational users of the river. • They are concerned that the proposed works will create a hazard to small boats, both during construction and in operation. • They are concerned that there will be disruption to the countryside, especially during construction. • Members of the public expressed concern that there would be significant environmental damage, included felled trees, caused by infrastructure, including the pipeline and pumping stations. <p>Environment</p> <ul style="list-style-type: none"> • Members of the public raised concerns around the impact on water levels and water quality in the River Severn, particularly during summer. • They state that the ecology of these rivers depends upon an established pattern of seasonal river levels, and acceptable water quality. Changes are likely to be detrimental to some species and to reduce biodiversity. • They expressed distrust of water companies releasing treated effluent into rivers given numerous reports about the quality of the rivers in the UK which are heavily polluted by bad practises by the water companies. They state that there seems to be inadequate regulation and laws to stop this pollution occurring.

	<p>Fixing leaks</p> <ul style="list-style-type: none"> Members of the public assert that fixing leaks and reducing consumption would address the perceived water supply shortfall. <p>Carbon costs</p> <ul style="list-style-type: none"> Members of the public state that the energy cost (carbon cost) of construction will be very high, and into the future that of ongoing pumping, especially to cross the Severn-Thames watershed. <p>Stakeholder engagement</p> <ul style="list-style-type: none"> Members of the public do not feel that they have been engaged as recreational users of the River Severn in regards to their concerns around impact on water levels and quality.
<p>Wantage and Grove Campaign Group (WaGCG)</p>	<p>Interconnectedness</p> <ul style="list-style-type: none"> WaGCG suggest that the gated process should consider the connected solutions together. They assert that the carbon footprint, financial cost, return on value, cost to the consumer, recreation and amenity value, and environmental impact of any integrated solution is impossible to define from the fragmentation of the strategies. They find that the current process does not allow for comparison of different options. <p>Water resource planning</p> <ul style="list-style-type: none"> WaGCG support the Group Against Reservoir Development (GARD) proposal that the STT transfer aqueduct should be built as quickly as possible, initially with only a modest amount of support sources including STS, but with the capability of adding new sources if needed. <p>Solution costs</p> <ul style="list-style-type: none"> WaGCG are concerned about the financial burden of RAPID solutions on future generations. They strongly support the call by GARD that Regulatory Capital Value should be included in the intergenerational equity metric. They also assert that the impact on customer bills should be required in the submissions and gated assessment.
<p>Severn Trent Water</p>	<p>Document consistency</p> <ul style="list-style-type: none"> Severn Trent Water would like to clarify that STS ‘discharges’ treated final effluent from Netheridge wastewater treatment works at a location near to Deerhurst, rather than ‘uses’ treated final effluent, as stated in section 2.1 of the draft decision document. <p>Gate timing</p> <ul style="list-style-type: none"> Severn Trent Water ask that their request for the gate three submission in the first quarter of 2025 is upheld and that there is an acknowledgement that this date is the ‘earliest target date’. They state that whilst Strategic Resource options (SROs) should seek to maintain the programme, a

	<p>flexible approach will be applied to these dates, within reason, acknowledging the uncertainties associated with the pre-application stage of major infrastructure projects. They provide a number of reasons to support this request including pilot plant outputs, engineering outline design, contract dates and Direct Procurement for Customer (DPC) implications.</p> <ul style="list-style-type: none"> • They would welcome a discussion with RAPID about the potential need for a gate five, what that may involve, what the funding would look like and any immediate next steps. These discussions should explicitly link to the stages of both the Development Consent Order (DCO) and DPC processes and clarify respective timelines and expectations, versus the RAPID stage gates. They request this clarification as a matter of urgency, due to the need to align with ongoing PR24 inputs and its demanding timeline. <p>Funding</p> <ul style="list-style-type: none"> • Severn Trent Water note that the draft decision increases gate three funding by 65% of the forecast shortfall. They would like confirmation in the final decision that funding for AMP 8 will be separately determined through the PR24 process and reflect any changes to project schedules arising from the Water Resource Management Plan (WRMP) process. They assert it would be helpful to know what the mechanism for allowing the additional 35% would be. • They provided their final gate two expenditure. <p>Cost sharing</p> <ul style="list-style-type: none"> • Severn Trent Water recognises RAPID’s objectives in making these changes to cost sharing for gate three, principally to challenge the more efficient delivery of gate three and to protect the customers’ interests. However, they believe that this arrangement does not allow the project to make a judgement on key risks and incentivises project teams to defer work which may damage the success of the project. This may ultimately result in an increased cost to customers. They would welcome further conversations about this issue, which might include whether cost sharing is a suitable mechanism for major projects at this stage of development – given the uncertainty that exists around schedule, scope, and costs. • They would welcome an ongoing dialogue about alternative approaches to managing uncertainty in AMP8, with the objective of enabling funding efficiency while maintaining customer protection. <p>Best value planning</p> <ul style="list-style-type: none"> • Regarding priority actions 2 and 3, the solution owner would request that RAPID confirm that they are required to undertake ‘Best Value Analysis’ using the WRW analysis tool in order to demonstrate that Netheridge represents the best
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	means of conveying water to the Thames. In terms of STS in isolation, they feel that 'Best Value Analysis' would not be appropriate at this stage, as they have only one viable solution.
Group Against Reservoir Development (GARD)	<p>Solution design</p> <ul style="list-style-type: none"> GARD propose an interim gate three checkpoint at which the need for additional treatment at Netheridge (STS) and Minworth WWTWs, including consideration of potential disproportionality of costs, is addressed in a properly evidenced and transparent way.
Campaign to Protect Rural England Oxfordshire (CPREO)	<p>Solution progression</p> <ul style="list-style-type: none"> CPREO supports GARD's proposal that STT should be built as soon as possible with limited number of support sources that can be expanded if needed. <p>Interconnectedness</p> <ul style="list-style-type: none"> CPREO do not agree that the gated process assesses solutions individually and suggests the connected solutions should be reviewed and evaluated together (including the various sources of water in the River Severn).

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. For the representations or parts of representations which indicate support, provide information, or give an update without raising key points and issues, we do not provide a response below but are grateful for the comments provided and confirm that we have also taken these into account.

3.2.1 Interconnectedness

RAPID took a decision at gate one that STS and other solutions supporting STT should continue to be developed separately to STT. It is recognised that, as water resources planning and the gated process advances, these supporting solutions may provide resilience benefits to their own regions, to other solutions, or to other regions beyond those served by STT itself. Linking the development of supporting solutions, and their ability to progress through the gated process exclusively to STT, could hinder investigation of these alternate configurations and their benefits.

Whilst assessing these solutions individually through the gated process, RAPID does also review them within the STT system that they may collectively create. As the solutions progress through gate three and alignment to the final water resource management plans occurs, RAPID will continue to look at solutions in an integrated way across the STT system, as well as at the individual solutions.

3.2.2 Fixing leaks

Whilst we agree that reducing leakage and being more efficient in our use of water both have a large role to play, this will not be sufficient to solve the future water deficit problem alone. Infrastructure options will be selected as part of regional plans and WRMPs. These plans consider both demand side measures and supply side measures as part of the twin track approach to water resources. The national framework – published by the Environment Agency in 2020 for England – set out expectations that the industry reduces demand to around 110 litres per person per day and reduces leakage by 50% both by 2050. Even with these reductions in demand, the sector is going to need to invest in infrastructure to improve drought resilience, reduce the impact of abstraction on the environment, supply a growing population and adapt to climate impacts.

3.2.3 Document consistency

The solution owners would like to clarify that STS ‘discharges’ treated final effluent from Netheridge wastewater treatment works at a location near to Deerhurst, rather than ‘uses’ treated final effluent. We have made this correction in the final decision document.

3.2.4 Carbon costs

We consider that the level of information presented on carbon is largely sufficient for gate two and where it would benefit from improvement, we have set a recommendation for these gaps to be addressed by gate three. Solution development to gate three should continue to build from the gate two submissions. In particular, our gate three guidance asks solutions to continue to follow the Water Resources Planning Guidelines for WRMP24 section 8.3.2 (published in April 2022) which states expectations for accounting for and reducing greenhouse gas emissions. In Wales, expectations are set out in the Welsh government guiding principles 2021 [Water resources management plan: guidance | GOV.WALES](https://gov.wales/water-resources-management-plan-guidance).

We are asking companies to reduce and mitigate embodied carbon as much as possible using standard approaches and appropriate frameworks. On 6 January 2022, Ofwat published its net zero principles position paper⁴. Solutions should be designed in line with these principles. In particular, companies are encouraged to ensure solutions:

- are reflective of national government targets on net zero;

⁴ <https://www.ofwat.gov.uk/publication/net-zero-principles-position-paper/>

- prioritise the reduction of GHG emissions before the use of offsets, doing so in line with the IEMA GHG Management Hierarchy⁵; and
- clearly address both operation and embedded emissions.

3.2.5 Water resource planning

The water resource management planning processes drive companies' decisions regarding which solutions they promote through the RAPID programme, including the sequencing and timing of the solutions. The gated process interacts with the regional planning and statutory company-level water resource management plan (WRMP) development processes. The gated process is intended to support companies in progressing the investigation and development of solutions in the RAPID programme to a high standard with the aim of solutions being construction ready for the 2025–2030 period and includes decisions about whether companies should continue to receive funding for this purpose. Neither Ofwat nor RAPID has a decision-making role in regional plans or water resource management plans.

3.2.6 Environment

Members of the public and stakeholders have raised concern about the water quality, ecology, levels and flow in the River Severn. Extensive environmental assessment and modelling has been undertaken and meets expectations for gate two. Whilst the gate two submission has identified potential risks from the solution, there is more work required to understand the significance of these impacts and whether they can be mitigated. There are risks to the solution's feasibility from water quality, flow/ level changes and the likely, if any, impact of the Severn Estuary Habitat Directive site and its functionally linked catchments. We have asked STS to complete an action relating to these issues to provide this extra detail in its gate three submission to inform forward feasibility.

RAPID's current remit is to provide oversight of the gated process established to support, review and challenge the development and delivery of the strategic water resource solutions funded as part of the 2019 price review. Part of the reason why these solutions are being developed is to protect, improve and enhance the environment. Each solution will need to comply with environmental legislation, undertake detailed environmental investigations and demonstrate how they will make a positive contribution to the environment and society. The

⁵ The GHG Management Hierarchy, as detailed by the Institute of Environmental Management and Assessment (2020 version), is a framework that organisations can use to guide the scoping and strategic planning of their energy and carbon management activities.

regulators that look after the environment are fully involved by RAPID at every stage of this programme and water companies also have duties in relation to environmental protection.

3.2.7 Loss of amenity

We understand the concern about impacts from construction of the solution, including construction traffic, on local communities and on the environment, for example on trees. There was also concern about the loss of amenity for users of the River Severn for recreational purposes. The impacts on amenity and recreation will be considered in more detail through the planning process and stakeholders should engage with the relevant planning consultations and processes to raise these concerns. RAPID is not the decision maker on Development Consent Order applications for Nationally Significant Infrastructure Projects, on applications for local planning permissions, or on the granting of permissions from environmental regulators. Those will progress through their own processes and decision-making regulators, with relevant consultation. Engagement with local stakeholder and regulators as part of the RAPID process will increase during gate three, to support awareness of the solution proposals and the understanding of local details.

3.2.8 Stakeholder engagement

We agree that stakeholder engagement is important, and we feel that the priority action around stakeholder engagement addresses the concerns raised in the representation. Furthermore, solutions will need to follow gate three engagement guidance which include:

- Pre-planning statutory consultation as described in The Planning Inspectorate Advice note 11: [working with public bodies in the infrastructure planning process](#) and Annexes A-H⁶
- Plans showing ongoing and continued engagement, that have been shared with public and statutory bodies, including any required enhanced advisory services.
- Customer engagement, particularly on changes of source where relevant.
- Engagement with all stakeholders affected by the solution's development.

3.2.9 Gate timing

The solution owners have requested that the gate three timing be Q1 2025, noting the dates are 'earliest target dates'. We confirm that, in alignment with NWT and STS, gate three is

⁶ <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

March 2025 but the solution owners must advise RAPID of any further proposed changes to this.

The solution owners have also asked for clarification regarding gate five. At present, we do not know the requirements for gate five. As we move through the gated process, we will define the requirements of future stages and release guidance accordingly.

3.2.10 Funding

We have considered the representations made on the gate three allowance and have considered further the interests of customers over the lifecycle of the solution's development and delivery. As a consequence, we have decided to increase funding for gate three. We will consider gate four expenditure either as part of the gate three decision or PR24, as appropriate.

We have adjusted Table 4 of the final decision to reflect these changes and have added some explanatory text to section 4.2.

We have updated the text in section 4.3 to reflect the change in final gate two expenditure derived from the final gate two accounts.

3.2.11 Solution costs

We are mindful of the financial burden that the solutions will place on current and future generations, however future customers will benefit from the additional water resource. At this stage of the solution's development, Ofwat does not consider it appropriate to ask solution owners to measure the impact on customer bills. Cost estimates are still relatively immature, and any measurement of an impact on customer bills is likely to be misleading at this time. Furthermore, the solution is likely to be delivered by an external delivery partner, hence it will not increase the Regulated Capital Value of water companies.

3.2.12 Cost sharing

We have considered the representations made on the appropriateness of the cost-sharing mechanism which appeared in the draft decision and have considered further the interests of customers over the lifecycle of the solution's development and delivery. As a consequence, we have decided to remove the cost sharing arrangements for gate three and are instead capping the gate three allowance at a higher level. This means that the solution may pass on to customers the costs of gate three activities but only up to the higher cap. The solution will be allowed to use its previous underspends to offset expenditure above the cap to provide some flexibility against cost uncertainty.

We have added some explanatory text to section 4.2 to reflect these changes.

3.2.13 Best Value Planning

We agree that there is a lack of evidence on best value in the gate two submission and have included two priority actions (2 and 3) to address these concerns.

The solution owner has questioned whether they need to undertake best value analysis because they only have one viable solution. We confirm that we are not requesting that best value analysis is undertaken using the WRW analysis tool because this best value analysis should be undertaken through regional water resource planning and water resource management plans. However, we are asking the solution to provide details of what best value metrics they used in their appraisal of the solution sub-options (outside of the capex/opex/carbon metrics). We have reworded priority action 2 to clarify this point.

We are requesting information on the metrics used in regional planning and WRMPs, and those the solution provided to the regional plans to allow the water companies and regional plans to undertake their Best Value Planning, by retaining priority action 3. We have amended the deep dive text at Recommendation 6, as we feel it would be better to have the discussion with STS directly and not in combination with solutions within the STT system. This will provide an opportunity to focus solely on the best value aspects of STT which are most relevant to the solution progression.

The gate two guidance requires a summary of the best value considerations relevant to each solution included in all the individual company WRMPs and regional water resource plans where the solution appears. For Severn Trent Sources, this means a summary of best value considerations that were provided for Thames Water's and Severn Trent Water's draft WRMP24, Water Resources West's draft regional plan and Water Resources South East's draft regional plan. This should include the consideration of financial cost and how the solution will achieve an outcome that increases the overall benefit to customers, the wider environment and society.

3.2.14 Solution design

Discharge quality is a necessary element of the solution option design criteria. The Netheridge (STS) wastewater treatment works discharges will require approval through an Environment Permit. If granted, this permit will set out quality and volume of discharge conditions which the treatment works must comply with in order to meet statutory environmental standards. The gate three guidance requires overall costs of construction and operation for the preferred option and options that have been discarded in order to demonstrate that the preferred option is best value.

3.3 Other changes to our draft decisions

3.3.1 Areas that we have changed not as a result of a representation

We have amended Appendix B, Action 3 to clarify that we were not satisfied at gate two with the evidence provided on best value and have updated the text throughout the document to reflect this. This is reflected in the revised priority action 2 and retained priority action 3, that we set to be completed by December 2023.

We have decided that the best value deep dive session, as described in recommendation 6 in the draft decision document, should be attended by STS only, rather than all three solutions related to the STT system. This will provide an opportunity to focus solely on the best value aspects of STS which are most relevant to the solution progression. We have therefore reworded recommendation 6 in the final decision document.

We have decided to escalate action 1 to a priority action that needs to be completed by December 2023. This is to align with the requirement for STT to deliver bench testing for Severn Trent Sources.

To support our decision on whether to set a Conditional Review Point, we have set a new priority action to report on the expenditure incurred up to December 2023 and a revised forecast of expenditure to gate three, for RAPID to consider alongside progress against the other priority actions in Appendix A.

4. Solution assessment summary

Table 2. Final decision summary

Recommendation item	Severn Trent Sources
Solution owners	Severn Trent Water
Should further funding be allowed for the solution to progress to gate three?	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
Are there priority actions for urgent completion?	Yes, set out in section 5.1.
Are all priority actions and actions from previous gates addressed?	No, there is one action around best value metrics that was not completed, and this has been set as a priority action
Suitable timing for gate three has been proposed	RAPID have agreed gate three as March 2025 to align with other related solutions.

4.1 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 Severn Trent Water's submissions on response to the priority actions set out in Appendix A at the regular checkpoint with Severn Trent Water 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 proceed 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 3 below.

Decisions on funding, as a result of this progression decision, are set out in section 4.2.

Figure 2. Assessment of solution's progression concerns

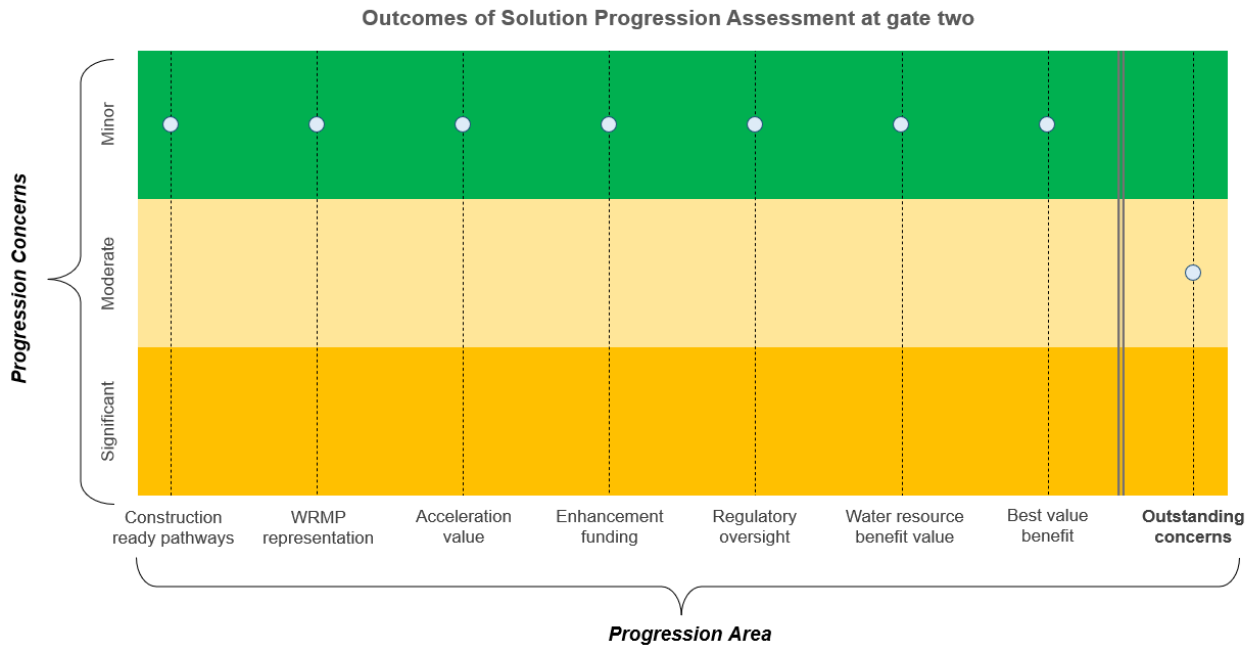


Table 3. Final decision progression criteria

Progression criteria	Severn Trent Sources
Solution owners	Severn Trent Water
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's draft Water Resource Management Plan (WRMP24), as a solution on its preferred pathway. The solution is also in the Water Resources South East draft regional plans. The solution will be construction ready by 2029.
	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 significant concerns on how the solution is represented, or the information about it, in Thames Water or Severn Trent Water's draft WRMP24, Water Resources West's draft regional plan or Water Resources South East's draft regional plan.
	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) compared to other solutions. However, we require more evidence to demonstrate this.
	We have set two priority actions around providing evidence of best value.
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 with the need for a detailed stakeholder engagement plan, the lack of engagement with relevant Drinking Water Quality teams, the proposed enhanced treatment required for the new discharge location, the assessment of water quality impacts on drain down points, and the significance of the depleted reach.
	This progression concern is addressed in priority actions 1 and 3, and action 2 in Appendix A of this document.

4.2 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 4 below, and details on forward programme in section 8.1.

Table 4. Severn Trent Sources funding allowances (2017/18 Prices)

	Gate one	Gate two	Gate three	Gate four	Total
Severn Trent Sources gated allowance	£0.53m	£0.80m	£6.37m	£2.12m	£9.81m
Comment	10% of development allowance calculated as 6% of total solution costs	15% of development allowance calculated as 6% of total solution costs	Allowance has been revised and capped.	We will review gate four expenditure as part of gate three assessment or PR24.	Updated to reflect revised gate three expenditure cap.
Previous Allowance	£0.53m	£0.80m	£1.86m	£2.12m	£5.30m
Change from Previous Allowance	£0.00m	£0.00m	£4.51m	£0.00m	£4.51m

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.

Severn Trent Sources will be allowed to spend up to £6.37 million to undertake gate three activities, representing an increase of £1.58 million from our draft decision. This figure has been reached based on funding 100% of the forecast costs for gate three. We are not amending the gate four allowances at this point.

We are removing the cost sharing arrangements for gate three which were in our draft decision and are instead capping the allowance at a higher level. This means that the solution may pass on the costs of gate three development but only up to the higher cap. The solution will be allowed to use its previous underspends to offset expenditure above the cap to provide some flexibility against cost uncertainty.

These arrangements will be implemented through the PR19 reconciliation mechanism. The impact on the solution owner(s) of any expenditure above or below the cap will depend on the extent to which the solution was already funded at PR19.

The solution may bring forward some gate four activities, which can be funded from the gate four allowance. There must be a clear rationale for undertaking the expenditure early, including evidence of the benefits of doing so instead of waiting for greater solution certainty.

We confirm that any funding for AMP 8 will be decided through the PR24 process.

4.3 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.

Severn Trent Sources has carried forward £0.31m underspend from gate one, increasing the allowance available to them at gate two to £1.06m.

Our assessment of the efficient costs as spent on standard gate two activities results in an allowance for this solution of £0.67m (of £0.67m claimed). Severn Trent Sources has therefore underspent its combined gates one and two allowance by £0.38m 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 £6.75m.

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. As Severn Trent Sources is progressing to gate three, this will apply here, subject to any decisions taken at a Conditional Review Point.

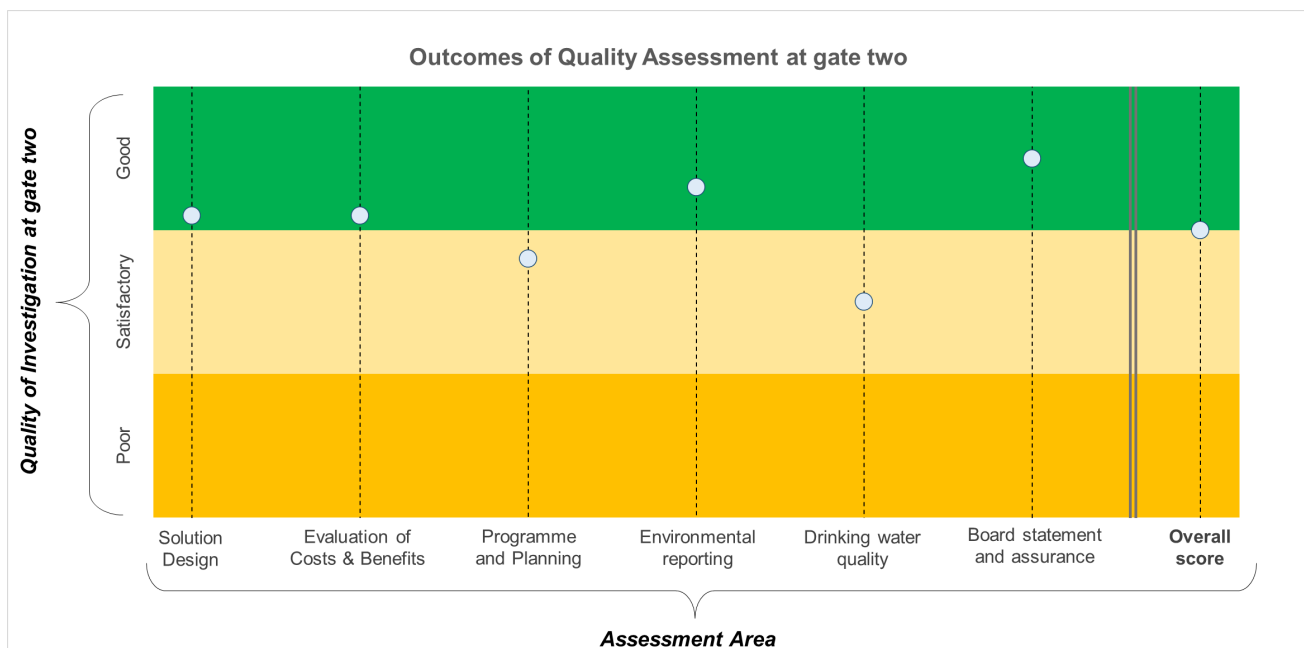
We expect the solution to provide a report on the expenditure incurred up to December 2023 and a revised forecast of expenditure to gate three.

4.4 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.

In addition to the overall assessment score, there is some variance in expectations being met across the submission, with Programme and Planning and Drinking Water Quality being assessed as requiring attention.

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 of this assessment of quality, as further detailed in section 5.

4.4.1 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 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 stakeholder and customer engagement and alignment with company, regional and national plans, for which priority actions, actions and recommendations are included.

We welcome the engagement with Severn Rivers Trust at gate two. However, we require provision of a detailed plan for local, strategic stakeholder and customer engagement, including Welsh interests by the regular checkpoint in December 2023 and ongoing updates provided through gate three regular checkpoints on its implementation, progress and how customer and stakeholder views have and will inform key decisions.

Alignment with company, regional and national plans requires improvement, as there are inconsistencies between the information presented in the submission and the WRMPs. We expect an update on final alignments and proposals at the regular checkpoint in December 2023. We require Severn Trent to ensure the solution aligns with relevant WRMP and regional plans. We also recommend that Severn Trent continue to explore water transfer opportunities to other regions.

4.4.2 Solution costs

Our assessment of the unit costs of delivering Severn Trent Sources shows that they are reasonable at this stage. 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, the discharge location has been changed to Haw Bridge, reducing the transfer pipe length and pumping head. Our 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.

4.4.3 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 have provided partially sufficient evidence of evaluating the costs and benefits of the solution to an appropriate standard for gate two.

The environmental net gain assessment is well presented and evidenced. The submission describes the connection to other assessments eg biodiversity net gain and carbon assessment. However, there is no description of the best value metrics used. The submission states that Water Resources South East (WRSE) regional plan metrics are used however there is no explanation of what these are. There is also no reference to WRMP24 best value guidance or Ofwat public value principles.

There is partially insufficient evidence to determine whether the solution has the potential to provide similar or better value compared to other options. The best value decision making and justification for solution option selection and timing is not clearly presented. There is insufficient evidence to determine whether Severn Trent Water have considered a wide range of metrics, risks and values supported by data, analysis and customer/stakeholder support.

In addition to the priority actions set in Appendix A, we would welcome a deep dive session early in gate three. This session should 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.

4.4.4 Programme and Planning

Our assessment of the Programme and Planning considered whether Severn Trent 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 evidence provided by Severn Trent Water regarding the programme and planning, risks and issues and the procurement and planning route strategy for the Severn Trent Sources to be of partially sufficient detail and quality for gate two. Additional work is required in the area of risks and issues to solution progression. We expect Severn Trent Water to provide more information on the proposed advanced treatment processes and on the significance of the depleted reach to fully understand the overall risk to the environment by the December 2023 checkpoint.

We have concerns with the procurement section, in particular the assessment of technical discreteness for suitability for Direct Procurement for Customers (DPC). In terms of the criteria for being a DPC project, the solution has used an arbitrary cut off point for determining whether works are discrete or not and have not fully considered how commercial arrangements could address any issues. We expect Severn Trent Water to review the technical discreteness assessment following Ofwat's consultation on its latest guidance⁷ and provide an updated assessment.

Work provided for subsequent gate activities with outcomes, penalty assessment criteria and incentives is partly lacking. Clarification is required around how risks identified in the gate two submission around output availability (risk 31) and anticipated permitting resulting in additional treatment (risk 32) are addressed by gate three activities in the programme plan.

4.4.5 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 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. We welcome continued early engagement

⁷ Technical discreteness consultation, Ofwat, Feb 2023 <https://www.ofwat.gov.uk/consultation/technical-discreteness-consultation/>

in gate three to ensure the remaining uncertainty in the environmental assessments are addressed.

We consider that future carbon submissions would benefit from additional information on:

- a range of uncertainties and a plan to mitigate them – clarity on the calculation process (emission factors are missing);
- a plan to seek the availability of low carbon material;
- information on the reporting of operational carbon emissions post project completion; and
- how carbon savings have helped to mitigate the solution costs.

4.4.6 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 to have provided minimally sufficient evidence of progress in the drinking water quality assessment, considerations, and future work around Drinking Water Safety Plans for gate two. The submission fails to provide evidence that the solution has been presented to the drinking water quality team, for which priority actions, actions and recommendations have been provided.

The assessment for drinking water has scored satisfactory as it meets most of the expectations of the guidance for gate two. However, there is a priority action, action and recommendation in relation to liaison with company drinking water teams. We expect the project team to demonstrate that they have consulted with the drinking water quality teams of all water companies impacted by the solution to understand current risks identified in Drinking Water Safety Plans (DWSPs) and to inform any updates to these.

4.4.7 Board Statement and assurance

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

We consider that the Board of Severn Trent Water has provided a comprehensive assurance statement and has clearly explained the evidence, information and external / internal assurance that it has relied on in giving the statement.

5. 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 either 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 or are essential early actions for gate three to progress appropriately. 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.

5.1 Actions and recommendations from gate two assessment

Eight priority actions have been identified for Severn Trent Sources, which should be delivered by the regular checkpoint in December 2023.

Eleven actions and recommendations have been identified for Severn Trent Sources, which should be fully addressed at the gate three submission. Progress against actions 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 Severn Trent Sources can be found in Appendix A.

5.2 Actions and recommendations from gate one assessment

We have assessed whether Severn Trent Sources has met actions that were set out as a result of our gate one assessment.

No priority actions were identified for Severn Trent Sources.

Eight actions and recommendations were identified for Severn Trent Sources, 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.

6. 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.

7. Proposed changes to partner arrangements

There are no changes proposed to partner arrangements from gate two.

8. 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 Severn Trent Water 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.

8.1 Gate three timing

Severn Trent Water have proposed a date for gate three of January 2025 with a proposed checkpoint in February 2024. This is proposed alongside a forward programme of gate four in 2028, proposed planning application submitted in 2026, solution construction ready in 2029, and solution operational in 2031. The representation asks for a flexible gate three of Q1 2025 and this aligns with the asks from related solutions (STT and NWT)

We have therefore agreed that Severn Trent Sources gate three should be March 2025. This aligns gate three with solutions on a similar programme, and for RAPID to efficiently assess progress of activities, ahead of the solution's proposed planning application.

We have reviewed the forward programme for gate four. Gate four should be scheduled a minimum of a month after the acceptance of planning applications, so suggest gate four should be October 2026.

We have also decided that there may be a Conditional Review Point. After we have considered Severn Trent Water's submissions in response to the priority actions set out in Appendix A at the regular checkpoint with Severn Trent Water in December 2023, we will confirm to Severn Trent Water 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 Severn Trent Water holds with us.

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 4.2 of this document.

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 e.g. Cadw/PEDW/Hafren Dyfyrdyw; • 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	Costs & Benefits	<p>Provide evidence to show what best value metrics were used in options appraisal within the solution. This needs to be wider than capex, opex and eg social and environmental. This will be required by the regular checkpoint in December 2023.</p>
3	Costs & Benefits	<ul style="list-style-type: none"> • Describe which best value metrics have been applied to the solution at a regional plan and individual company WRMP level. • Provide a summary of the best value metric evaluation outcomes including: <ul style="list-style-type: none"> ○ weights and scoring applied. ○ non-monetised and monetised best value benefits (where possible) consistent with WRMP24 Table 5 for the solution within each company WRMP and regional plan where the solution appears. ○ any significant differences in best value assessment evaluation outcomes for the solution between plans should be identified and explained. <p>This will be required by the regular checkpoint in December 2023.</p>
4	Drinking Water Quality	<p>Provide evidence and outcomes of liaison with company drinking water quality teams to RAPID and identify any potential issues already included in current Drinking Water Safety Plans (DWSPs) by regular checkpoint in December 2023.</p>
5	Solution Design	<p>Confirm that the solution aligns with Severn Trent and Thames Water's Water Resource Management Plans (WRMPs) and relevant Regional Plans. This will be required by the regular checkpoint in December 2023.</p>
6	Programme and Planning	<p>Review the technical discreteness assessment following Ofwat's consultation of its latest technical discreteness guidance and provide an updated assessment. This will be required by the regular checkpoint in December 2023.</p>
7	Evidence of efficient spend	<p>At the regular checkpoint meeting in December 2023, provide a report to RAPID on the expenditure incurred up to December 2023 and a revised forecast of expenditure to gate three.</p>

8	Programme and Planning	Further information is required regarding the proposed advanced treatment processes and on the significance of the depleted reach to fully understand the overall risk to the environment.
Actions – to be addressed in standard gate three submission		
Number	Area	Detail
1	Programme and Planning	Explain in more detail how risks 31 and 32 identified in the gate two submission are addressed by gate three activities in the programme plan.
2	Drinking Water Quality	Liaise with water company drinking water quality teams to identify any potential issues already included in current Drinking Water Safety Plans (DWSPs).
Recommendations		
Number	Area	Detail
1	Solution Design	Continue to explore opportunities to transfer water to other regions.
2	Solution Design	Present utilisation information more clearly to show the normal year annual average, dry year annual average and dry year critical period. This will help clarify the difference between when Netheridge is used for sweetening flow, and when it is used to meet demand for WRSE.
3	Solution Design	Provide utilisation for other return periods to understand how the source will be used during different events.
4	Costs and Benefits	Describe how and why solution costs are changing between each gate.
5	Costs and Benefits	We would positively view further feasibility investigations at gate three into the use of wetland treatment for low-level flow.
6	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.
7	Costs and Benefits	Evidence that scores and metrics are in line with relevant WRMPs. We are recommending a deep dive session is held on the metrics and wider benefits assessments across all three solutions in the Severn to Thames Transfer system (including Severn to Thames Transfer and North West Transfer).
8	Environment	<p>Future carbon assessments would benefit from the inclusion of the following points;</p> <ul style="list-style-type: none"> • a range of uncertainties and a plan to mitigate them; • clarity on the calculation process (emission factors are missing); • plan to seek the availability of low carbon material; • information on the reporting of operational carbon emissions post project completion; and • how carbon savings have helped to mitigate the solution costs.

9	Drinking Water Quality	Share monitoring data with Drinking Water Quality teams and provide confirmation of ongoing liaison.
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Appendix B: Gate one actions and recommendations

Actions – addressed in standard gate two submission			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	Ensure that further detailed utilisation calculations are undertaken early in gate two in order to feed into environmental assessments.	We consider Severn Trent Water to have provided sufficient evidence of progress in addressing this action.
2	Costs and Benefits	Complete drought resilience modelling, taking into account possible restrictions resulting from the 'River Severn Drought Order', which applies to the Mythe abstraction licence.	We consider that this action is now no longer applicable because Mythe water treatment works has now been removed from the solution.
3	Costs and Benefits	Ensure that best value analysis (following relevant guidelines) is undertaken and presented for all options within the solution, with a focus on incorporating environmental, societal, and economic costs. Link into discussions of best value of this and other enabling solutions for dependant solutions (e.g. Severn Thames Transfer).	We don't consider Severn Trent Water to have provided sufficient evidence of progress in addressing this action.
4	Environment	Update status and deterioration risks under the (Water Framework Directive) (England and Wales) Regulations 2017, with particular attention paid to: Class used; standards used; Chemicals; <10% deterioration; Impact at permit limits.	We consider Severn Trent Water to have provided sufficient evidence of progress in addressing this action. The updated gate two Water Framework Directive assessment addressed this issue.
Recommendations			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	Develop utilisation figure during key drought events (such as 1:500 year events). This development would require input from other solutions/ regional models. Ensure lead in time for supply, dependent on solutions stand-by operating status, is represented in any receiving solutions decision making.	We consider Severn Trent Water to have provided sufficient evidence of progress in addressing this recommendation.
2	Solution Design	Further engage customers on change of supply source as a result of implementing this solution.	We do not consider Severn Trent Water to have provided sufficient evidence of progress in addressing this recommendation. The submission only references that a "new consultation on

			water transfers will be launched to understand stakeholder views on the impacts of changes of water supply, and understand their opinions on the specific SRO proposals under consideration." No detail has been provided on what has been done so far.
3	Costs and Benefits	Further consider social and amenity value, if this is limited due to type of solution, this can be explained in the submission.	We do not consider Severn Trent Water to have provided sufficient evidence of progress in addressing this recommendation. We could find no evidence of the consideration of social and amenity value of the solution.
4	Costs and Benefits	Further investigate potential opportunities of wider resilience benefits brought about by specific options within this solution. We recognise types of solution may limit the opportunities available.	We do not consider Severn Trent Water to have provided sufficient evidence of progress in addressing this recommendation. We could find no evidence that Severn Trent Water have investigated potential opportunities of wider resilience benefits brought about by specific options within this solution.

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