

March 2023

**Strategic regional water  
resource solutions:  
standard gate two draft decision  
for Minworth SRO**

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## 1. Introduction

The purpose of this publication is to set out our draft decision about whether the Minworth SRO<sup>1</sup> solution should continue to receive development funding<sup>2</sup>. The solution owners Severn Trent Water and Affinity Water submitted their standard gate two reports on 14 November 2022 for assessment. Further information concerning the background and context of the Minworth SRO can be found in the solutions publication document on the Severn Trent website<sup>3</sup>.

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.

The solution owners and other interested parties can now respond to the draft decision. Representations are invited by email to [rapid@ofwat.gov.uk](mailto: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](http://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unless you indicate that you would like your representation to remain unpublished.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 provide a written response, even where there are legitimate reasons why the contents of those written responses remain confidential.

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<sup>1</sup> Referred to in PR19 final determination as “Minworth effluent reuse”

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

<sup>3</sup> [SRO Plans | Our plans | About us | Severn Trent Plc](#)

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 Severn Trent Water and Affinity Water 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

Minworth SRO provides a source of raw water flow augmentation to support the Grand Union Canal (GUC) Transfer, and/or Severn Thames Transfer (STT), by diverting treated wastewater currently discharged into the River Tame and River Trent, with some additional treatment, then discharging into the River Avon and/or the Grand Union Canal system.

There are three feasible raw water transfer options summarised below and represented in a schematic in Figure 1. The capacity for each of the options below will be further investigated beyond gate two.

- 1: GUC – Potential to provide up to 100 megalitres per day (Ml/d) treated wastewater to the Grand Union Canal system to supply Affinity Water via a new or upgraded WTW.
- 2: STT – Potential for up to 115Ml/d of further treated wastewater discharged to the River Avon to supplement flows to the River Thames forming part of the Severn to Thames (STT) transfer solution.
- 3: GUC / STT – Potential to support both schemes from Minworth, with a combined output of up to 215Ml/d.

**Figure 1. Minworth SRO Solution Schematic**



### 3. Solution assessment summary

Table 1. Draft decision summary

Recommendation item	Minworth SRO
Solution owners	Severn Trent Water and Affinity Water
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?	No
Are there priority actions for urgent completion?	No
Are priority actions and actions from previous gates addressed?	Yes
Suitable timing for gate three has been proposed	No, RAPID have decided a gate three of September 2024 to align with other solutions.

#### 3.1 Solution progression to standard gate three

The evidence suggests that the solution is a potentially valuable way of providing an additional source of raw water for abstraction and treatment to 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 and Affinity Water's submissions in response to the priority actions set out in Appendix A, 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

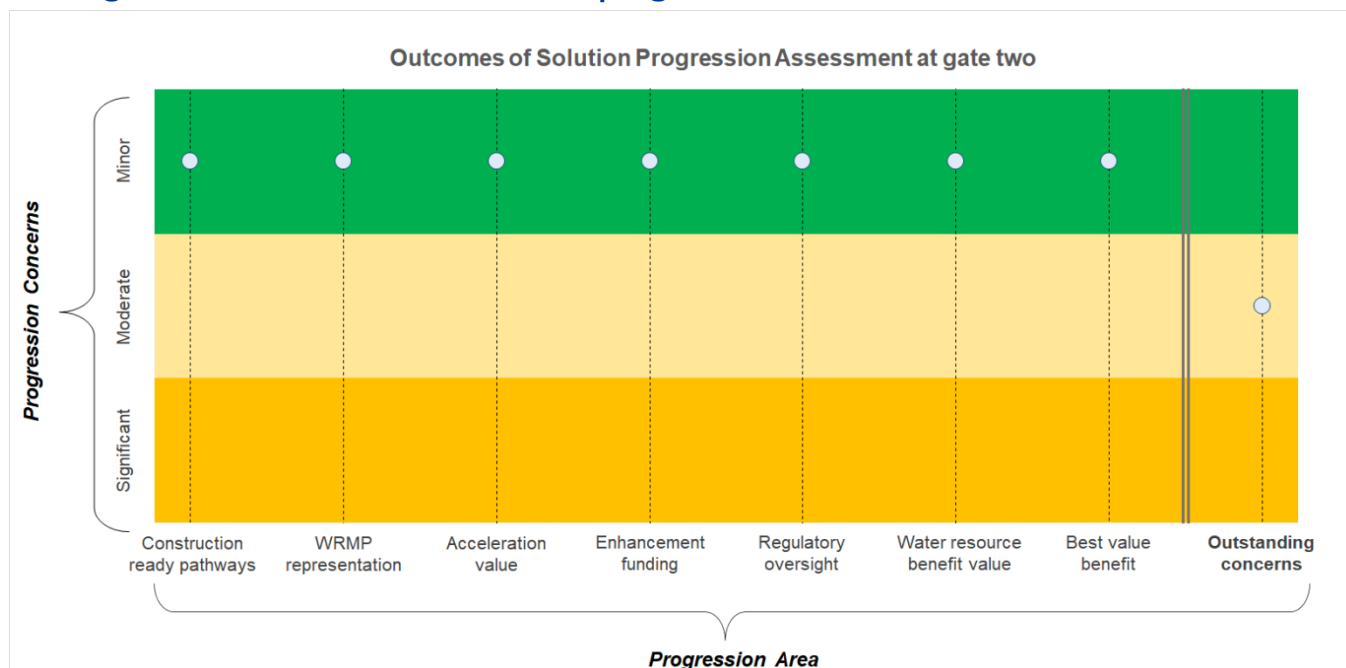


Table 2. Draft decision progression criteria

Progression criteria	Minworth
<b>Solution owners</b>	Severn Trent Water and Affinity Water
<b>Is the solution in a preferred or alternative pathway in relevant regional plan or WRMP (where applicable) to be construction ready by 2030?</b>	<p>The SRO feeds into the West Water Resources (WWR) and Water Resource South East (WRSE) Regional Plan. Minworth SRO will support inter-regional transfers of raw water to either the GUC, the STT or a combination of both. The solution features as a supply option in Severn Trent's draft WRMP.</p> <p>Development of the combined option to treat 230 MI/d will be reviewed in gate three considering WRSE's adaptive pathway. This pathway uses Minworth to support the STT if the South East Strategic Reservoir Option is undeliverable.</p> <p>No further action is required on this progression criteria.</p>
<b>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?</b>	<p>No, the regulators do not have concerns on how the solution is represented, or the information about it, in Severn Trent Water's and Affinity Water's draft WRMP24, or WRW's or WRSE's draft regional plan.</p> <p>No further action is required on this progression criteria.</p>
<b>Is there value in accelerating the solution's development to meet a company's or region's forecast supply deficit?</b>	<p>Yes. The solution is required to address Affinity Water's forecast deficit by supporting the delivery of the GUC which is dependent on this option.</p> <p>No further action is required on this progression criteria.</p>



<b>Does the solution need continued enhancement funding for investigations and development to progress?</b>	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.
<b>Does the solution need the continued regulatory support and oversight provided by the Ofwat gated process and RAPID?</b>	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.
<b>Does the solution provide a similar or better cost / water resource benefit ratio compared to other solutions?</b>	This solution is expensive if considered on the basis of cost per projected utilisation as it is a drought resilience asset. However, when considered on a capacity basis, solution costs are not unreasonable and over the medium- to long-term the solution can be adapted to provide capacity beyond the immediate resilience requirement.
	No further action is required on this progression criteria.
<b>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?</b>	Yes, although there are some concerns that the submission shows potential permanent habitat loss, agricultural value loss, and welfare value and tourism/recreation value loss from initial environmental assessments.
	This progression concern is addressed in actions 2 and 3, and recommendation 1 in Appendix A of this document.
<b>Does a regulator or regulators have outstanding concerns that have not been addressed through the strategic planning processes taking into account proposed mitigation?</b>	Yes. The solution owner is required to confirm any additional treatment at Minworth STW to comply with discharge consents and the Water Framework Directive (WFD) and to detail how this will be funded.
	The solution owner should develop the programme of environmental monitoring, assessment and modelling to determine potential environmental impacts and provide mitigation for these.
	The progression concern for additional treatment is addressed in priority action 2 in Appendix A of this document.  Environmental monitoring concerns are addressed in actions 5 and 12 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. Minworth SRO funding allowances**

	Gate one	Gate two	Gate three	Gate four	Total
<b>Minworth SRO gated allowance</b>	£0.90m	£1.35m	£5.88m	£3.60m	£11.73m
<b>Comment</b>	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
<b>Previous Allowance</b>	£0.90m	£1.35m	£3.15m	£3.60m	£9.00m
<b>Change from Previous Allowance</b>	£0.00m	£0.00m	£2.73m	£0.00m	£2.73m

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.

Minworth SRO has carried forward £0.45m underspend from gate one, increasing the allowance available to them at gate two to £1.80m.

Our assessment of the efficient costs as spent on standard gate two activities results in an allowance for this solution of £1.48m (of £1.48m claimed). Minworth SRO has therefore underspent its combined gates one and two allowance by £0.33m 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 £6.21m.

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 Minworth SRO is progressing to gate three, this will apply here, subject to any decisions taken at a 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.

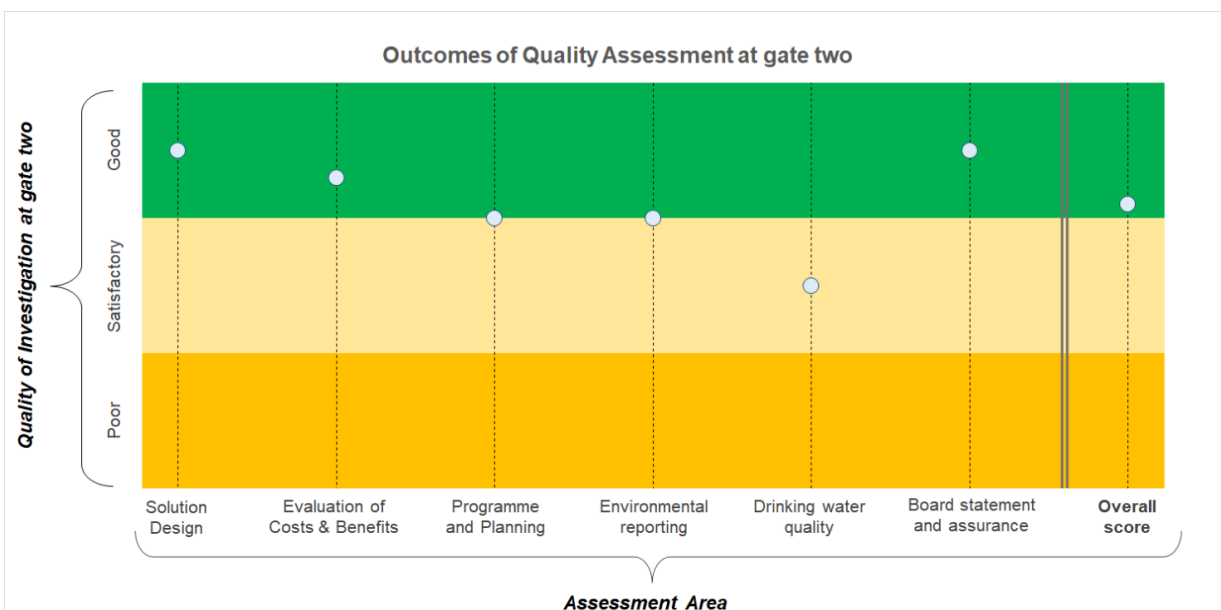


Figure 3. Assessment of quality of investigation

Our overall assessment for the solution submission is that it is a good submission that meets expectations of gate two.

In addition to the overall assessment score, there is some variance in expectations being met across the submission, with drinking water quality falling short of expectations and not as developed as would be expected at gate two.

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 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 sufficient evidence of progress in developing the solution design has been presented for gate two.

### **3.4.2 Solution costs**

Our assessment of the unit costs of delivering Minworth SRO finds that the costs presented 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 scale of treatment required has changed to support the WFD "no deterioration" criteria. 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 sufficient evidence of evaluating the costs and benefits of the solution has been provided to an appropriate standard for gate two. However, the solution falls short in some areas as the natural capital assessment deviates from published guidance.

### 3.4.4 Programme and Planning

Our assessment of the Programme and Planning considered whether Severn Trent Water and Affinity 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 regarding the programme and planning, risks and issues and the procurement and planning route strategy to be of sufficient detail and quality for gate two. However, the solution falls short in some areas due to uncertainty with some risks and mitigation.

The submission has fallen short in its assessment of technical discreteness for Direct Procurement for Customers. A priority action is included to review the technical discreteness assessment following Ofwat's issue of consultation on its updated guidance<sup>4</sup> with an updated assessment required. For gate three, Severn Trent Water and Affinity Water need to develop how they will ensure adequate systems and resources for planning and land acquisition related activities and how they will consider the customer journey. An action is included to address this.

### 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 sufficient evidence of progress in the environmental assessment, potential mitigations, future work programmes and embodied and operational carbon commitments has been provided for gate two. There are ongoing discussions between the solution owners and the Environment Agency around mitigations for the Rivers Tame, Trent and Avon during periods of extended dry weather.

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<sup>4</sup> [Technical discreteness consultation - Ofwat](#)

However, the solution falls short in some areas as the carbon assessment does not meet expectations in all areas and due to detail on further activities.

### **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 teams and a plan for future work to develop Drinking Water Safety Plans.

This solution is designed to augment flows in GUC and the River Tame and Avon for GUC/STT solutions. There are no explicit drinking water quality requirements. However, we consider the company to have provided sufficient evidence of progress in the water quality assessment, considerations, and future work around Strategic Water Quality Risk Assessments (SWQRA) for gate two as this resource will feed into the Drinking Water Safety Plans (DWSPs) for downstream water treatment works. We expect to see continued monitoring including for emerging contaminants into gate three.

### **3.4.7 Board Statement and assurance**

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

We consider that the boards of Affinity Water and Severn Trent Water 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

Three priority action has been identified for Minworth SRO, which should be delivered no later than the dates specified against each priority action, as part of a remediation plan. If solution owners cannot meet these deadlines please explain this in the representation.

Twenty one actions and recommendations have been identified for Minworth SRO, 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 recommendation for Minworth SRO can be found in Appendix A. If solution owners cannot meet action deadlines set please explain this in the representation.

### 4.2 Actions and recommendations from gate one assessment

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

No priority actions were identified for Minworth SRO,

Nine actions and recommendations were identified for Minworth SRO, which were expected to be fully addressed at the gate two submission.

We have decided that the actions have 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 no changes proposed to partner arrangements from gate two.

## 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 Severn Trent Water and Affinity 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.

### 7.1 Gate three timing

Severn Trent Water and Affinity Water have proposed a date for gate three of December 2024. This is proposed alongside a forward programme of gate four in January 2027, proposed planning application submitted in 2025, solution construction ready in late 2027, and solution operational in 2031.

We have decided that Minworth SRO gate three should be September 2024. This is to align 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 Severn Trent Water's and Affinity Water's submissions in response to the priority actions set out in Appendix A at the regular checkpoint with Severn Trent Water and Affinity Water in December 2023, we will confirm to Severn Trent Water and Affinity Water whether there will be a Conditional Review Point and the date this will occur. Any Conditional Review Point will be in addition to the regular checkpoints that the companies hold with us.

We have reviewed your 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 November 2025.

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](mailto: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 date specified against each priority action		
Number	Area	Detail
1	Programme and Planning	Review the technical discreteness assessment following Ofwat's issue of consultation on its updated guidance on <a href="#">technical discreteness</a> , and provide an updated assessment. This will be required by the regular checkpoint in December 2023.
2	Programme and Planning	Risk remains to the solution from the potential impact on water quality and compliance with the Water Framework Directive and environmental standards. Mitigation to reduce this risk is planned in the form of further modelling, monitoring and trial treatment programmes. Confirmation of mitigation measures should be submitted by the regular checkpoint in December 2023 for the treatment programme this means the bench trial package, to allow time for unresolved risks to be managed by the end of gate three.
3	Programme and Planning	By the regular checkpoint in December 2023 provide information and assurance to RAPID on how uncertainty with developing environmental advice will be managed by the project. This should include making allowances for adaptability within in the development of the pilot treatment plant and treatment processes required to meet regulatory standards.
Actions – to be addressed in standard gate three submission		
Number	Area	Detail
1	Solution Design	Continue investigations to better understand the potential impact of Minworth (at full transfer support, 230MI/d) and the South Lincolnshire Reservoir solution operating together. Incorporate consideration of the Upper Derwent Valley Reservoir Extension solution into in combination assessment work on the River Trent and Humber Estuary.
2	Evaluation of Costs and Benefits	Improve assessment by taking ecosystem services through to the quantification and (where applicable) valuation stages. Statement and quantification of natural hazard regulation is necessary. The rationale for the exclusion of natural hazard regulation requires additional explanation.
3	Evaluation of Costs and Benefits	Development of assessments in gate three should assume demand management measures are not sufficiently effective and that the full support to GUC is required in a single phase.
4	Programme and Planning	For gate three, further develop how you will ensure adequate systems and resources for planning and land acquisition related activities and how you will also take into account the customer journey i.e. landowners, residents, businesses affected by the project.
5	Environment	Further modelling and monitoring work covering ecology, water quality and hydrology should be carried out to inform environmental assessments.

6	Environment	Gate three investigations must include climate change factors, including effects on flow and water quality, etc. The application of climate change factors to stochastic hydrological datasets and also the use of climate change scenarios is recommended. The approach must be discussed with the teams working on GUC, STT, South Lincolnshire Reservoir (SLR) and Upper Derwent Valley Reservoir Expansion (UDVRE) to ensure integration of models accounting for climate change is 'compatible'.
7	Environment	Continue to develop environmental assessments based on potential to support both transfer schemes up to 230Ml/d.
8	Environment	A clear plan to continue investigating the potential in combination and cumulative impact with SLR and UDVRE should be set out. The in combination and cumulative assessments should be expanded to include other plans, permissions and projects with the sector and within other sectors (notably the energy sector).
9	Environment	Continue investigating the risk presented by invasive non-native species (INNS) both with the transfers and also on changes in temperature and flow regime in the River Tame.
10	Environment	Detailed investigation of the potential impact on fish passage and fish passes on the Tame and Trent is necessary, and any identified impact should have feasible mitigation proposed in detail.
11	Environment	Recommendations made by Environment Agency and Natural England through gate two engagement should be used to inform gate three environmental work. Recommendations set out in the environmental assessments are also expected to be actioned.
12	Environment	Update and bring together modelling work and monitoring to better understand potential hydroecological impacts, in particular at low flows.
13	Environment	Present further information for the calculation of carbon emissions and whether a focus on carbon has helped to mitigate the solution costs. Information should be presented on risk or uncertainties in carbon assessment and how mitigation has been planned.
<b>Recommendations</b>		
<b>Number</b>	<b>Area</b>	<b>Detail</b>
1	Evaluation of Costs and Benefits	Provide descriptions for why and how solution costs are changing between each gate.
2	Programme and Planning	The programme plan for gate three onwards is lacking and there is no additional information about programme plan in annex E5. Provide a more detailed programme plan in the gate three submission.
3	Programme and Planning	Provide more detail about: <ul style="list-style-type: none"> <li>• how risks identified in the gate two submission will affect programme delivery.</li> <li>• the impact of residual risks on programme delivery timeline</li> </ul>

4	Programme and Planning	The description of the highest treatment standard as worst-case could confuse readers, an alternative term is recommended.
5	Programme and Planning	Recommendations for future work within the WQ monitoring report should be implemented
6	Environment	Modelling and monitoring should inform updated WFD and Habitats Regulations Assessment (HRA). Further assessment of temperature and dissolved oxygen is recommended for gate three. Targeted bathymetric surveys at weir locations and detailed investigation of gauging station issues are recommended to improve understanding of potential impacts.
7	Environment	Early engagement with EA and NE on risks and scope of environmental assessments for gate three.
8	Drinking Water Quality	Consider whether by-products from wastewater treatment should be taken into account including: chlorate, trihalomethanes.

## Appendix B: Gate one actions and recommendations

Actions – addressed in standard gate two submission			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	This needs to be fully developed taking into account all scenarios to establish the best option. A catchment / multi-option overarching report should be provided for gate two to give full confidence that the complex interactions between these options has been fully assessed. We would expect this to be part of the in-combination assessment following the outputs of the regional plans	Complete
2	Costs and Benefits	Ensure that assessment of costs and benefits take into account any environmental impact as a result of any diversion of effluent discharge. The solution needs to be included in Water Resources East regional plan if being utilised for South Lincolnshire Reservoir and/or Anglian to Affinity Transfer SROs.	Complete
3	Costs and Benefits	Ensure a best value analysis, following relevant guidelines and including environmental/societal/economic costs, is undertaken and presented for all of the options within this SRO.	Complete
4	Environment	The assessment considering the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 needs to consider deterioration (including in-class deterioration) and pathway to Good. The Habitats Regulations Assessment (HRA) needs to consider indirect impacts on the River Mease SAC further and those protected species that may utilise it as functionally linked habitat from the Humber Estuary.	Complete
Recommendations			
Number	Area	Detail	RAPID assessment outcome
1	Stakeholders	Produce a stakeholder engagement plan, including identification of wider / local stakeholders	Complete



2	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.	Complete
3	Environment	Site features must be considered even outside of the designated site boundary, particularly in relation to migratory fish species as this functional linkage can extend throughout catchments.	Complete
4	Costs and Benefits	Carry out studies to investigate source option-specific wider resilience opportunities in gate two once regional modelling outputs are complete.	Complete
5	Drinking Water Quality	The risk assessment must consider the impact of influent on the treatment process at Minworth Wastewater Treatment Works (WwTW) and inclusion of a failsafe shut down to ensure that any partial or full treatment failure at Minworth WwTW does not lead to non-compliant wastewater being discharged for abstraction/transfer to STT/GUC.	Complete

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