

June 2023

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

## Contents

1. Introduction .....	3
2. Solution Summary .....	4
2.1 Solution summary .....	4
3. Summary of representations .....	5
3.1 Representations received .....	5
3.2 Our response .....	7
3.2.1 Environment .....	8
3.2.2 Solution Costs .....	8
3.2.3 Solution Design .....	9
3.2.4 Social Impact .....	9
3.2.5 Interdependency of Solution .....	9
3.2.6 Gate timing .....	10
3.2.7 Drinking Water Quality .....	10
3.2.8 Gate funding (Additional) .....	10
3.2.9 Gate Funding (Cost Sharing) .....	11
3.2.10 Point of clarification .....	11
3.3 Other changes to our draft decisions .....	11
3.3.1 Area that we have changed not as a result of a representation .....	11
4. Solution assessment summary .....	12
4.1 Solution progression to standard gate three .....	12
4.2 Solution funding to standard gate three .....	14

4.3	Evidence of efficient expenditure .....	16
4.4	Quality of solution development and investigation .....	16
4.4.1	Solution Design .....	17
4.4.2	Solution costs .....	18
4.4.3	Evaluation of Costs and Benefits .....	18
4.4.4	Programme and Planning .....	18
4.4.5	Environment.....	19
4.4.6	Drinking water quality .....	19
4.4.7	Board Statement and assurance.....	19
5.	Actions and recommendations .....	21
5.1	Actions and recommendations from gate two assessment.....	21
5.2	Actions and recommendations from gate one assessment.....	21
6.	Delivery Incentive Penalty.....	23
7.	Proposed changes to partner arrangements .....	24
8.	Gate three activities and timing.....	25
8.1	Gate three timing.....	25
	Appendix A: Gate two actions and recommendations.....	26
	Appendix B: Gate one actions and recommendations.....	29

# 1. Introduction

The purpose of this publication is to set out our final 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 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 and Affinity Water for the level of engagement, collaboration and innovation that they have exhibited during this stage in the gated process.

---

<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](#)

## 2. Solution Summary

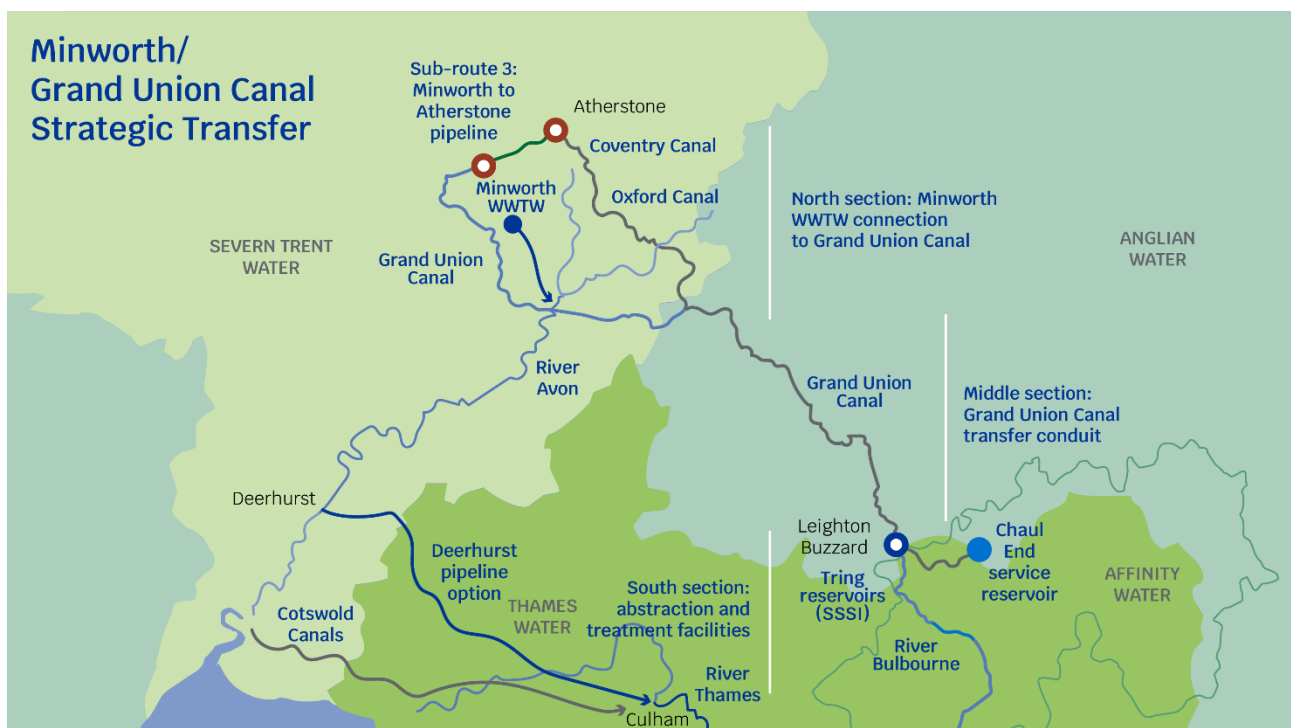
### 2.1 Solution summary

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. Summary of representations

### 3.1 Representations received

We have received the following representations relevant to the Minworth SRO.

**Table 1. Summary of representations**

Representation from	Summary of representation
<b>Members of the public</b>	<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Concern from member of the public on the integrated schemes (Minworth, GUC and STT) impact on water levels and quality.</li> <li>Noted main area of focus is flow of River Severn by Deerhurst, where water will be extracted and wastewater will be added to increase the level of water.</li> <li>Interest in impact to the erosion of the bank and sedimentation changes.</li> </ul> <p><b>Social impact</b></p> <ul style="list-style-type: none"> <li>Concern development of scheme will also impact the wider recreational use of the river due to potential changes in water levels and quality.</li> </ul>
<b>North Warwickshire Borough Council</b>	<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Concerns raised over the proposed pipeline and its route. Query if it is the best or most cost-effective option.</li> <li>Suggestion to discharge treated water to Birmingham and Fazeley Canal that would not require new infrastructure, saving costs and environmental impact.</li> </ul> <p><b>Solution Design</b></p> <ul style="list-style-type: none"> <li>Interest in method of how the pipe will be laid and if it will be a cut and cover installation.</li> <li>Noted the potential visual, environmental and physical implications to North Warwickshire.</li> <li>Query if the solution qualifies as a Nationally Significant Infrastructure Project (NSIP).</li> </ul>
<b>Group Against Reservoir Development (GARD)</b>	<p><b>Solution Design</b></p> <ul style="list-style-type: none"> <li>Recommended that the gate two decision should require a separate report on the need for additional treatment at the Netheridge and Minworth Wastewater Treatment Works (WWTWs).</li> <li>GARD propose that this work is completed before their suggested gate three interim check point.</li> </ul>
<b>Oxfordshire County Council</b>	<p><b>Interdependency of solution</b></p> <ul style="list-style-type: none"> <li>Noted support for the solution. However, the risk was highlighted that a conditional review point may be set for</li> </ul>

	<p>Minworth that would lead to a conditional review point for GUC.</p> <ul style="list-style-type: none"> <li>• GUC is dependent on Minworth as a source of water. Cautious of any risks to Minworth that could impact GUC achieving Development Consent Order (DCO).</li> <li>• Accept that the council does not expect to be involved as none of the land for the route is found in Oxfordshire.</li> </ul>
<p><b>Wantage and Grove Campaign Group</b></p>	<p><b>Solution costs</b></p> <ul style="list-style-type: none"> <li>• WaGCG are concerned about the financial burden of RAPID solutions on future generations. They strongly support the call by Group Against Reservoir Development (GARD) that Regulated Capital Value (RCV) 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.</li> </ul> <p><b>Interdependency of solution</b></p> <ul style="list-style-type: none"> <li>• Noted that GUC and STT solutions will rely on Minworth as a source of water for each solution.</li> <li>• State evaluation of the solutions is being conducted as three separate projects (Severn Thames Transfer, the Minworth Water Treatment Works Study and the Severn-Trent 'strategic sources' study).</li> <li>• Suggested that reviewing the projects independently will make it difficult to assess the options and benefits objectively. Minworth needs to be included in the assessment of both GUC and STT.</li> </ul>
<p><b>Affinity Water and Severn Trent</b></p>	<p><b>Gate timing</b></p> <ul style="list-style-type: none"> <li>• Request that RAPID confirms final gate three decision aligns with December 2024. Currently the RAPID recommended gate three date is September 2024 to align with the other solutions.</li> <li>• Recognise that this is the earliest target date. The solution will seek to maintain a programme, but a flexible approach is applied to these dates to manage uncertainties associated with the pre-application stage of major infrastructure projects.</li> <li>• Do not believe that gate four in November 2025 would provide sufficient time for them to produce a DCO application of sufficient quality and request gate four date remains in early 2027.</li> </ul> <p><b>Gate funding (additional)</b></p> <ul style="list-style-type: none"> <li>• Request confirmation that funding for AMP 8 will be separately determined through the 2024 Price Review (PR24) process and reflect changes to project schedules arising through Water Resource Management Plan (WRMP) process.</li> <li>• Noted 65% of additional funding request is approved as RAPID considers estimates 'not fully mature'. If it becomes clear through discussions between Minworth team and</li> </ul>

	<p>RAPID that the additional budget request is accurate, the solution would like to know the steps to achieve the additional 35% of the funding request.</p> <ul style="list-style-type: none"> <li>• Signalled that GUC is working on DCO pre-application phase in gate three with aim to submit DCO by gate four in line with requirements set by Water Resources South East (WRSE) regional planning and fWRMP24. Limitations to funding could impact the delivery timeline and the date of deployable output as the DCO application would not be submitted until it was of a sufficient standard.</li> <li>• Noted 2019 Price Review (PR19) promotion of Minworth SRO was to support a single Strategic Resource Option (SRO). During gate one and gate two development the support scope has expanded to cover both GUC and STT.</li> <li>• In the event of a suspension for STT, the Minworth solution does not expect the budget for the solution to be impacted.</li> <li>• They provided their final gate two expenditure.</li> </ul> <p><b>Gate funding (cost sharing)</b></p> <ul style="list-style-type: none"> <li>• Acknowledged RAPID changes to the cost sharing rate.</li> <li>• Believe that the changes prevent the project making a judgement on key risks and incentivises project teams to defer work that can risk the success of the project and increase costs for customers.</li> <li>• Welcome discussions on the issue, such as if cost sharing is a suitable mechanism for major projects at this stage of development with uncertainty over schedule, scope and costs.</li> </ul> <p><b>Drinking Water Quality</b></p> <ul style="list-style-type: none"> <li>• Section 3.4.6 (Drinking Water Quality) is the only area of solution marked satisfactory.</li> <li>• The solution will continue the water quality monitoring programme into gate three as requested but seeks further information into the rationale of the scoring.</li> </ul> <p><b>Environment</b></p> <ul style="list-style-type: none"> <li>• The solution confirms that the bench trials will be completed within the prescribed time period. They request that RAPID's final response confirms that this is the requirement for this action.</li> </ul> <p><b>Point of clarification</b></p> <ul style="list-style-type: none"> <li>• Figure 1 is missing the Minworth STT component.</li> </ul>
--	--

## 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 Environment**

Environmental assessment and modelling has been undertaken and meets the expectations for gate two. The gate two submission has identified potential risks from the scheme. There is further work required to understand the significance of these impacts and how they can be mitigated.

As part of the gate two assessment, we have set several actions for the solution to be completed for gate three. We expect further environmental monitoring work concerning ecology and water quality to be conducted, in addition to various other key environmental risks. We accept that the bench trials will be completed as part of the actions in gate three.

The canal routing from Minworth is covered in the submission for the gate one Grand Union Canal (GUC) submission, and can be found on page 12, section 4 of this document. The sub-options included the potential use of the Birmingham Fazeley canal. The main reasons that this route was eliminated as the preferred route to the GUC were due to pollution in the River Tame which would require additional treatment at the point at which the flow is lifted to the eastern canal waterways, passing through built-up areas of Birmingham and the need to make upgrades to the canal infrastructure to accommodate the increased flows as well as difficulties in access.

RAPID's remit is to provide oversight of the gated process. This was 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. The amount of water available for water supply has reduced to meet environmental objectives, hence, in part, the need for new solutions. 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. Each solution will need to comply with environmental requirements to gain relevant environmental permits which the Environment Agency regulates and planning consents for which they are a statutory consultee. The Environment Agency and Natural England sit on a number of environmental technical working groups to advise on potential environmental impacts and appropriate mitigation measures.

### **3.2.2 Solution Costs**

We are mindful of the financial burden that the solutions will place on 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.

### **3.2.3 Solution Design**

For gate two the solution is at the concept design stage of development. Details of how the solution will be constructed, including the pipeline route, will be established at a later time as the solution continues through the RAPID gated process and carries out preparation prior to an application for a Development Consent Order (DCO) or local planning permission(s).

The solution owner will determine whether to apply for a DCO or local planning permission(s). Our gate three guidance asks solution owners to submit a consenting strategy at gate three and to set out progress in implementing the strategy. We understand that the solution owner's current preferred consenting route is to make an application under s35 Planning Act 2008 for the solution to be treated as a Nationally Significant Infrastructure Project so that an application can be made for a DCO.

The Minworth and Netheridge WwTWs discharges will require approval through an Environment Permit, granted by the Environment Agency. If granted, this permit will set out the quality and volume of permitted discharges which the treatment works must achieve. Discharge quality is a necessary element of the design criteria.

### **3.2.4 Social Impact**

Affinity Water and Severn Trent Water are responsible for developing their supply options, including the location of any infrastructure. Minworth SRO will be subject to environmental impact assessment to identify any impacts and mitigation required. This assessment will be required to support any planning consent or environmental permit applications. During gate three, the solution owners will increase engagement with local stakeholders and regulators to ensure these impacts are considered and assessed in addition to the statutory planning process. We expect that an environmental impact assessment would encompass the effects on recreational activities and any mitigation for those effects.

### **3.2.5 Interdependency of Solution**

Water resources infrastructure options are considered and selected as part of regional plans and water resource management plans. These plans consider both demand side measures and supply side measures as part of a twin track approach to water resources and determine

the need for new water resource infrastructure. Neither Ofwat nor RAPID has a decision-making role in regional plans or water resource management plans.

Whilst assessing these solutions individually through the gated process, RAPID does also review them as a system 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, as well as at the individual solutions.

### **3.2.6 Gate timing**

The solution owners requested that the final decision on gate three remains December 2024. This is noted as the 'earliest target date' with some flexibility for the delivery due to uncertainty that is associated with pre-application for major infrastructure projects. RAPID confirms that the final decision for gate three for Minworth SRO is December 2024. The solution owners must inform RAPID of any difficulties in meeting the gate three date as set.

We agree that gate four should be aligned with acceptance of a DCO or planning application so will be early 2027.

### **3.2.7 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.

There are no explicit drinking water quality requirements for river augmentation, however we consider the company to have provided sufficient evidence of progress in the water quality risk assessment, 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.

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

### **3.2.8 Gate funding (Additional)**

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.

### **3.2.9 Gate Funding (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.

#### **3.2.10 Point of clarification**

We have added the Minworth STT components to Figure 1.

## **3.3 Other changes to our draft decisions**

### **3.3.1 Area that we have changed not as a result of a representation**

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	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.

### 4.1 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 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

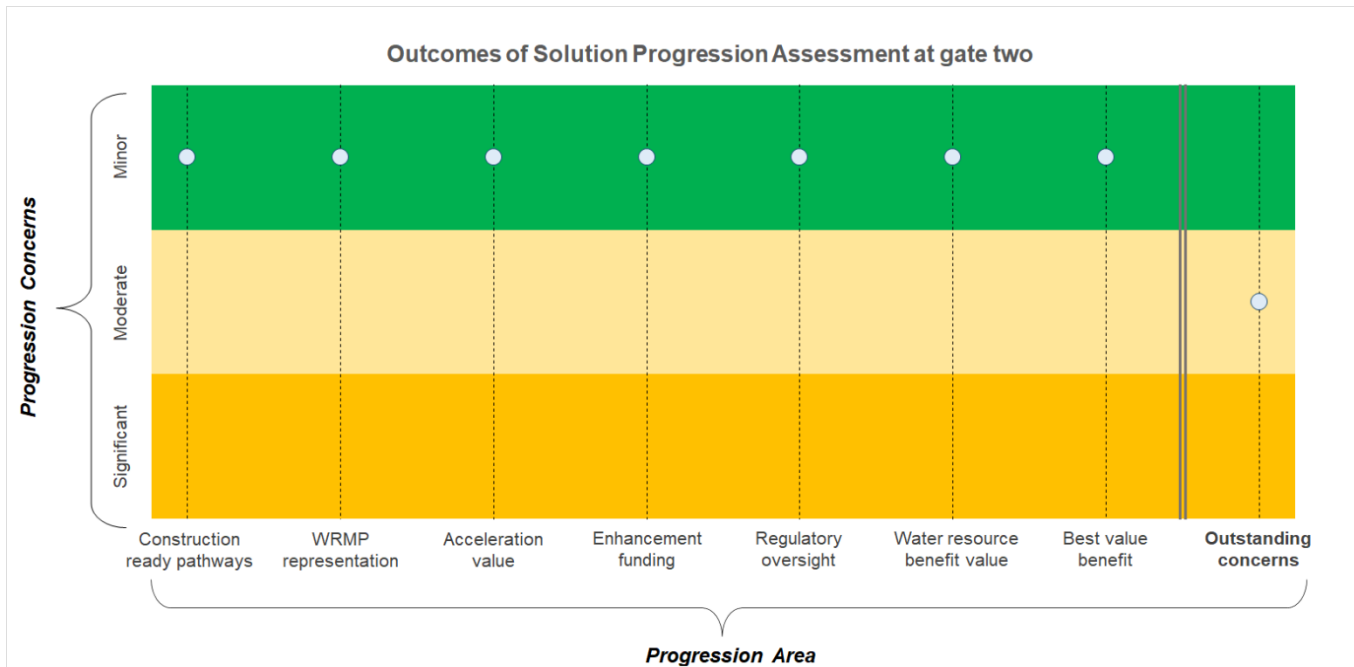


Table 3. Final decision progression criteria

Progression criteria	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.

## 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. Minworth SRO funding allowances (2017/18 Prices)**

	Gate one	Gate two	Gate three	Gate four	Total
<b>Minworth SRO gated allowance</b>	£0.90m	£1.35m	£7.36m	£3.60m	£13.21m
<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	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.
<b>Previous Allowance</b>	£0.90m	£1.35m	£3.15m	£3.60m	£9.00m
<b>Change from Previous Allowance</b>	£0.00m	£0.00m	£4.21m	£0.00m	£4.21m

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.

Minworth SRO will be allowed to spend up to £7.36 million to undertake gate three activities, representing an increase of £1.47 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 owners 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.

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 £1.47m (of £1.47m 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 £7.68m.

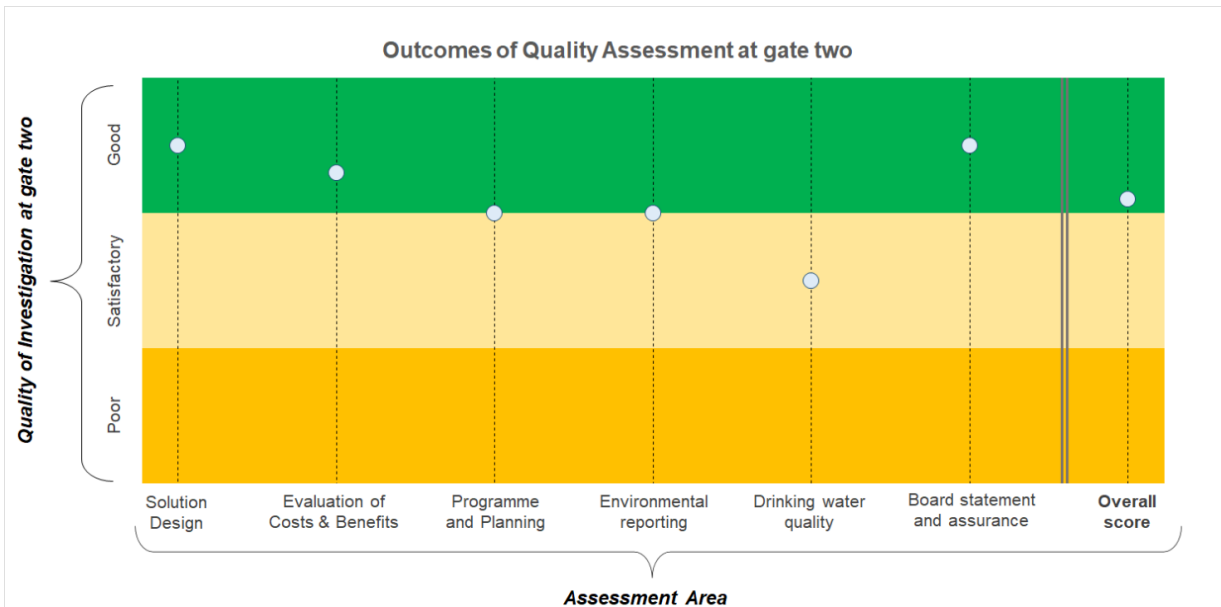
From gate two, we will move to look at the cumulative gate spend against the cumulative total allowance, across all gates consistent with the activities being undertaken. For example, any gate four allowance that is brought forward towards gate three should be for the purpose of early gate four activities. As Minworth SRO is progressing to gate three, this will apply here, subject to any decisions taken at a Conditional Review Point.

We expect United Utilities to provide a report on the expenditure incurred up to the Conditional Review Point 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 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 6.

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

## 4.4.2 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.

## 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 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.

## 4.4.4 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

---

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

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.

#### **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 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.

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.

#### **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 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.

#### **4.4.7 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.

## 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 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.

### 5.1 Actions and recommendations from gate two assessment

Four 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.

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.

### 5.2 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.

## 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 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.

### 8.1 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.

Severn Trent Water and Affinity Water commented on the timing of gate three in their representation. We accept their reasoning to retain gate three in December 2024.

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 and read your representation. Gate four should be scheduled a minimum of a month after the acceptance of planning applications, so agree gate four should be early 2027.

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 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.
4	Evidence of efficient spend	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.
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, 230Ml/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

**Ofwat (The Water Services Regulation Authority)  
is a non-ministerial government department.  
We regulate the water sector in England and Wales.**

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

© Crown copyright 2023

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit [nationalarchives.gov.uk/doc/open-government-licence/version/3](https://nationalarchives.gov.uk/doc/open-government-licence/version/3).

Where we have identified any third party copyright information, you will need to obtain permission from the copyright holders concerned.

This document is also available from our website at [www.ofwat.gov.uk](https://www.ofwat.gov.uk).

Any enquiries regarding this publication should be sent to [mailbox@ofwat.gov.uk](mailto:mailbox@ofwat.gov.uk).

**OGL**