

Regulators' Alliance for Progressing
Infrastructure Development

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Strategic regional water resource solutions: Standard gate one final decision for Grand Union Canal Transfer



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1. Introduction

The purpose of this publication is to set out our final decision in respect of the Grand Union Canal Transfer strategic regional water resource solution submitted for the standard gate one assessment by solution sponsors Severn Trent Water and Affinity Water¹. The solution includes options within it, reflecting three different routes from the source for the transfer and three different abstraction points. Further information concerning the background and context of the Grand Union Canal Transfer can be found in the Grand Union Canal Transfer publication document on the [Severn Trent Water](#)² and [Affinity Water](#)³ websites.

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

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

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

We would like to thank Severn Trent Water, Affinity Water and Canal & River Trust 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 “Grand Union Canal Transfer”

² [Microsoft Word - RAPID - Gate 1 Submission GUC v7.docx \(severntrent.com\)](#)

³ <https://affinitywater.uk.engagementhq.com/strategic-resource-options>

2. Solution summary

The Grand Union Canal (GUC) solution utilises the existing canal and a new pipeline to convey treated wastewater from the Minworth Strategic Resource Option (SRO) in the Severn Trent Water supply area to areas of water deficit in Affinity Water's supply. Water will be abstracted in Affinity Water's supply area and treated prior to distribution to customers.

Figure 1: GUC Schematic



The transfer capacity will be 50 Ml/d to 100 Ml/d.

There are three potential routes and three potential abstraction points, and each option considers two capacities (50 and 100 Ml/d). For much of its length the transfer will make use of existing canals, with interventions as necessary along its route.

There are three potential abstraction points: Tring, Hemel Hempstead and The Grove.

There are three potential sub-routes, other sub-routes having been considered but not short-listed:

- Sub-route 1: Short pipeline from Minworth WwTW to discharge into Birmingham Fazeley Canal. Connection to Coventry Canal at Fazeley and transfer south via Coventry/Oxford Canal to GUC just north of Daventry.

- Sub-route 3: Pumped from Minworth WwTW via a new 15.5km pipeline to Coventry Canal at Atherstone and transfer south via Coventry/Oxford Canal to GUC just north of Daventry.
- Sub-route 6: Pumped from Minworth WwTW via a new 33.0km pipeline to GUC at Leamington Trough Pound, south of Leamington Spa and transfer south via GUC.

3. Summary of representations

3.1 Representations received

We have received the following representations relevant to Grand Union Canal (GUC).

Table 1 Summary of representations

Representation from	Summary of representation
<p>Group Against Reservoir Development (GARD)</p>	<p>Transparency of cost estimates GARD cites concerns over a lack of transparency in solution cost estimates generally, requesting further detail to the level that was included in the Fens reservoir gate one report.</p> <p>Deployable output and stochastic flow data GARD is also concerned about a lack of transparency in deployable output (DO) assessments, suggesting the evidence should be made available for scrutiny of the assumptions, data, and outputs of the modelling.</p> <p>GARD have concerns over the reliability of stochastic river flow data, such as: inaccurate weather data for groundwater-dominated catchments; the stochastic weather base period not containing any long duration droughts; the base period excluding weather since 1997; and the geological difference in catchments not being reflected in the generated Thames and Severn flows.</p> <p>Carbon costing GARD asserts that the gate one reports are poor on the subject of carbon costing of strategic options and have shortcomings in the data presented.</p> <p>Transfer capacity of the GUC GARD suggested that the transfer capacity of the GUC has been underestimated and proposed it could be used to meet Thames Water's needs for London in addition to Affinity Water. They proposed a 300 MI/d transfer capacity</p>
<p>Oxfordshire County Council</p>	<p>Agreed that the GUC transfer proposal should be progressed to gate two.</p>
<p>Dacorum Borough Council</p>	<p>Commented that, with respect to other potential abstraction points in the area, the impacts upon existing and proposed development must be fully considered as part of the evidence base to be progressed as part of the gate two submission. This should include the potential increase to possible flood risk and the impact of the land take, construction and operation of the solution.</p>

	Stated that it expects to be involved in the engagement process in the continuing gathering of the evidence base and in the evaluation and assessment of the GUC SRO as it progresses.
Affinity Water and Severn Trent	<p>Stated that total gate one expenditure has reduced by ~10%. As a result, subject to final costing confirmation, the companies are looking for reallocation of this underspend to be used at Gate Two.</p> <p>Would welcome discussions regarding the ‘satisfactory’ environmental assessment area rating in order to improve for gate two. The companies stated their commitment to address any uncertainties which remain, and to work collaboratively and closely with all of the environmental regulators and relevant stakeholders.</p> <p>Reviewed and accepted actions and recommendations, with the intention of proceeding to gate two and resolving each item.</p>

3.2 Our Response

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

3.2.1 Transparency in cost estimates

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

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

3.2.2 Deployable Output assessments and stochastic flow data

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

drought (England), and Supplementary Guidance: Stochastics. We will pass on the specific points raised to solution owners for consideration as they develop their deployable output assessments further.

3.2.3 Carbon costing

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

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

3.2.4 GUC as a transfer option supplying London and Affinity Water

In response to GARD's comment that a transfer larger than 100 Ml/d should be considered, the capacities of options considered within the RAPID process were developed by solution owners taking into account feasibility (including in this instance configuration of canal assets and structures) and environmental assessments in order to progress delivery of water resource management plans at WRMP19. We expect that any larger capacity options would be identified and assessed through the regional and company planning process at WRMP24 and an update to be provided on option capacities at gate two.

Transfer capacity will be constrained by the water level, velocity and environmental issues. GUC have identified gaps in their modelling which they will address in gate two. Their ultimate objective is to efficiently determine the scale and nature of the engineering enhancement or operational changes required to accommodate the optimal transfer capacity.

3.2.5 Resilience and impacts of GUC and other potential abstractions in the local borough

The water companies will continue to develop the solutions and evidence surrounding them and we expect that this will include consideration of the impact on existing and proposed development and factors such as flood risk and the impact of the land take, construction and operation of the solution.

Each solution is assessed on its impact to water resilience and environment as gates progress and through statutory planning consent process. Engagement with stakeholders as identified in the proposed gate two activities is expected to be an integral part of the solution evidence base.

3.2.6 Potential flood risk increase

Flood risk will be investigated further through gate two, informed by the hydrological modelling work being undertaken. RAPID will continue working with the project to ensure the scheme appropriately considers flood risk and to look for any potential benefits which can be delivered which may themselves help flood risk management.

3.2.7 Utilisation of gate one underspend at gate two

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

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

3.2.8 RAPID assessment and gate two plans – joint representation from GUC solution partners

We welcome the work proposed by the GUC team to address the actions and recommendations as set out in the Appendix. RAPID is happy to discuss any aspect of the assessment.

4. Solution assessment summary

Table 2. Final decision summary

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

4.1 Solution progression and funding to gate two

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

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

We have decided to merge the gate one and gate two allowances. This results in a total allowance of £3.01m being available at gate two. Companies remain responsible for management of cost risk to meet gate requirements

4.2 Evidence of efficient expenditure

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

Our assessment of the efficient costs as spent on gate one activities results in an allowance for this solution of £1.49m (of £1.49m claimed). These costs reflect final and reconciled costs.

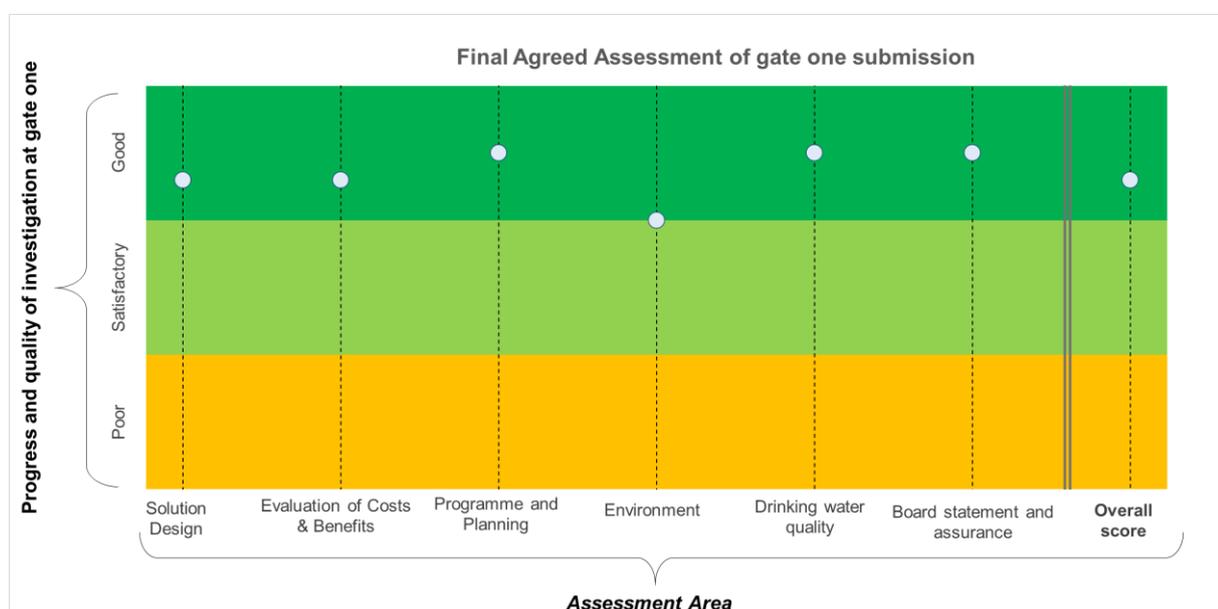
We have made no adjustments to the costs claimed.

4.3 Quality of submission

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

Figure 2 shows our assessment of the work completed on the solution, which was presented in the submission. Our assessment was made against the criteria of robustness, consistency and uncertainty to grade each area of the submission as good, satisfactory or poor in accordance with [our guidance published on 22 February 2021⁴](#). We also assessed the Board assurance provided.

Figure 2. Submission Assessment



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

⁴ [RAPID: Strategic regional water resource solutions guidance for 2021 - Ofwat](#)

4.3.1 Solution Design

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

We consider Affinity Water and Severn Trent Water have provided good evidence of progress in developing the solution design for gate one.

The submission could have included a more detailed assessment of utilisation, and the gate two assessment should take interaction with other options into account.

4.3.2 Evaluation of Costs & Benefits

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

We consider Affinity Water and Severn Trent Water have provided good evidence of evaluating the costs and benefits of the solution to an appropriate standard for gate one and we expect this to be further developed for gate two.

Regional model outputs should confirm the size and yield of the solution. The gate two submission will need to contain more details on the cost and benefits and include a (re)assessment of wider benefits, natural capital, and biodiversity net gain.

4.3.3 Programme and Planning

Our assessment of the programme and planning considered whether Severn Trent Water, Affinity Water and the Canal & River Trust presented a programme with key milestones and whether its delivery is on track. The assessment also considers 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 Affinity Water and Severn Trent Water regarding the programme and planning, risks and issues and the procurement and planning route strategy

for this SRO to be of good detail and quality for gate one. A full risks register should be shared with Environment Agency and Natural England to ensure a work programme is in place to address environmental risks. The programme of work to deliver at gate two is expected to be challenging.

4.3.4 Environment

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

We consider Affinity Water and Severn Trent Water to have provided satisfactory evidence of progress in the environmental assessment, potential mitigations, future work programmes and embodied and operational carbon commitments for gate one.

However, the methodologies and guidance that will be used to determine greenhouse gas emissions, and how they will be managed and mitigated could be clearer. Also the risks and issues, including regulatory barriers need to be investigated further.

The programme of work to deliver this solution for gate two is challenging. Environmental assessments should be refined, including a review of scope and further monitoring. Work will be required with the Environment Agency and Natural England to ensure potential risks are addressed through a detailed work programme including scope and mitigation requirements for identified impacts.

4.3.5 Drinking water quality

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

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

4.3.6 Board Statement and assurance

The evidence provided relating to assurance has been assessed as good. The solution sponsors have provided Board statements that indicate:

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

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

5. Proposed changes to partner arrangements

There are no proposed changes to partner arrangements.

6. Actions and recommendations

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

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

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

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

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

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

7. Gate two activities

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

For its gate two submission, we expect Severn Trent Water, Affinity Water and the Canal & River Trust to complete the activities listed in [PR19 final determinations: strategic regional water resources solutions appendix](#) as expanded on in its gate one submission.

8. Incentives for gate two

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

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

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

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

There will be no opportunity to remediate deficiencies identified at the assessment in order to defer penalties.

Appendix: Actions and Recommendations

Actions – to be addressed in gate two submission		
Number	Section	Detail
1	Solution design	Ensure a percentage utilisation is determined, including uncertainty and sensitivity. Provide a detailed explanation of the methodology for defining utilisation from the regional modelling. Operational utilisation should be reassessed and refined following outputs from regional modelling
2	Environment	Provide clarity regarding the framework/s used to determine carbon costs and emissions
3	Environment	Investigate Invasive Non-Native Species (INNS) risks further and the efficiency of proposed treatments / mitigation measures
Recommendations		
Number	Section	Detail
1	Solution design	Include potential benefits and issues associated with interactions between the proposed Grand Union Canal route and the Oxford canal scheme
2	Evaluation of costs and benefits	Calculate all open water losses. Ensure all possible constraints on Deployable Output (DO) are considered such as open water quality such as algal growth in warm weather and hand off flow considerations.
3	Evaluation of costs and benefits	Include which option is considered best value (rather than just least cost) for customers and the environment and the criteria and method used for best value.



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