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Strategic regional water resource solutions: New proposed solutions gate one draft decision for Upper Derwent Valley Reservoir Extension

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1. Introduction

The purpose of this publication is to set out our draft decision in respect of the Upper Derwent Valley Reservoir Extension (UDVRE) strategic regional water resource solution submitted for the gate one assessment by solution owners Severn Trent and Yorkshire Water¹.

The solution seeks to support a continued bulk transfer agreement from Severn Trent to Yorkshire Water, whilst maintaining a surplus in Severn Trent's own supply-demand balance, and potentially providing support for environmental flows and abstractions downstream for other RAPID solutions. The solution proposes doing this through options of raising existing dams; building new dams downstream of existing dams or siting a new reservoir in the vicinity of the Upper Derwent Valley Reservoir complex. Further information concerning the background and context of the Severn Trent and Yorkshire Water Upper Derwent Valley Reservoir Extension can be found in the Upper Derwent Valley Reservoir Extension publication document on the Severn Trent² and Yorkshire Water websites.

This publication should be read in conjunction with the draft decision letters issued to each solution sponsor. Both this document and draft 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 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 and the representation period will close at 6pm on 12th April 2022. All representations will be considered before our final decision is published on 17th May 2022.

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at www.ofwat.gov.uk/regulated-companies/rapid, unless you indicate that you would like your representation to remain unpublished.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

If you think that any of the information in your response should not be disclosed (for example, because you consider it to be commercially sensitive), an automatic or generalised

¹ Referred to in PR19 final determination as “Derwent Valley Storage Increase”

²<https://www.severntrent.com/content/dam/stw-plc/about-us/sro-documents/udv-gate-one-submission.pdf>

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.

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 and Yorkshire Water for the level of engagement, collaboration, and innovation that they have exhibited during this stage in the gated process.

2. Solution assessment summary

Table 1 Draft gate one submission decision summary

Recommendation item	Upper Derwent Valley Reservoir Extension
Solution owners	Severn Trent and Yorkshire 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?	Not applicable
Delivery incentive penalty?	Not applicable
Is there any change to partner arrangements?	Not applicable
Are there priority actions for urgent completion?	Yes
Funding will be allowed for the solution to join the standard gate programme.	

2.1 Solution progression and funding to gate two

In considering whether this solution should join the RAPID programme we considered the following questions:

- Is there value in accelerating the solution's development to be 'construction ready' for the 2025-2030 period?
- Does the solution need additional enhancement funding for investigations and development?
- Does the solution need the additional regulatory support and oversight provided by the Ofwat gated process and RAPID?
- Does the solution provide a similar or better cost / water resource benefit ratio compared to current solutions?
- 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 current solutions?

Table 2 Draft decision summary to join the RAPID programme

Recommendation item	Additional solution (Upper Derwent Valley Reservoir Extension)
Solution owner	Severn Trent and Yorkshire Water
Is there value in accelerating the solution's development to be 'construction ready' for the 2025-2030 period?	Yes
Does the solution need additional enhancement funding for investigations and development?	Yes
Does the solution need the additional regulatory support and oversight provided by the Ofwat gated process and RAPID?	Yes
Does the solution provide a similar or better cost / water resource benefit ratio compared to current solutions?	Yes
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 current solutions?	Yes
Funding will be allowed for the solution to join the standard gate programme.	

This solution has been presented to RAPID to support Severn Trent Water and Yorkshire Water customers.

- We conclude that there is value in accelerating the solution development to be construction ready for the 2025/2030 period.

Severn Trent and Yorkshire Water need to investigate and develop the solution to be construction-ready by 2025-2030 in order to support a decision by Severn Trent regarding whether to continue or terminate its bulk supply to Yorkshire Water. Further the solution provides potential water resource supporting benefits to other RAPID solutions that align with this construction ready period.

- We conclude that the solution does need additional enhancement funding for investigations and development.

The solution has been selected in emerging regional plans and we understand in work completed by Severn Trent and Yorkshire Water on preparation of their draft WRMP24s. Enhanced funding will enable its continued development, beyond the level of investigations required for WRMP's and in keeping with the development timetable for which regions and other solutions may need to benefit from it.

- We consider that the additional regulatory oversight and governance and structure around the RAPID process will support Severn Trent and Yorkshire Water in working together to develop this solution.

Regulatory oversight through inclusion in the RAPID gated process will allow the potential benefits of this solution to other regions and other RAPID solutions to be investigated and developed alongside the other similar timescales to the development of regional plans and RAPID solutions and will ensure consistency with equivalent regional solutions.

- We have concluded the solution has the potential to provide a similar or better cost-to-water resource benefit ratio to other current RAPID solutions.

Due to gravity feeds and existing infrastructure, certain options within the UDVRE solution may be able to supply water resource benefit at low additional OPEX to current Severn Trent operational costs.

- We have concluded the solution does have the potential to provide similar or better value to other current RAPID solutions, in respect to environmental, social, and economic value.

The solution type and scope is similar to other solutions within the RAPID programme, and therefore has the potential to provide similar value.

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 the funding identified in Table 3 should be allowed.

Table 3 Upper Derwent Valley Reservoir Extension funding allowances

	Gate one	Gate two	Gate three	Gate four	Total
Upper Derwent Valley Reservoir Extension	N/A	£2.78m	£6.49m	£7.42m	£16.70m
Comment	N/A	15% of development allowance calculated as 6% of total solution costs for raising 20m dam	35% of development allowance calculated as 6% of total solution costs for raising 20m dam	40% of development allowance calculated as 6% of total solution costs for raising 20m dam	90% of development allowance calculated as 6% of total solution costs for raising 20m dam

Gate funding has been calculated using total solution costs for the 20 meter dam raising option. Options within the UDVRE solution are diverse in terms of the nature of the option and the costs associated with the options. We have selected this option as the basis for calculation of allowances as it is an option with a mid-range cost and basing the gated funded allowances on the costs of this option will allow for an appropriate level of development funding for investigation of both smaller and larger option scopes for the solution.

RAPID will review the funding allowance for UDVRE at gate three, when a preferred option is expected to be presented to take account of the scope of the preferred option.

Funding will be shared equally between the solution owners, Severn Trent and Yorkshire Water, unless owners agree and notify RAPID of alternative cost sharing proportions before the end of the representation period.

This funding is allowed in accordance with the conditions and requirements as outlined in the PR19 final determinations: Strategic regional water resources solution appendix.

2.2 Evidence of efficient expenditure

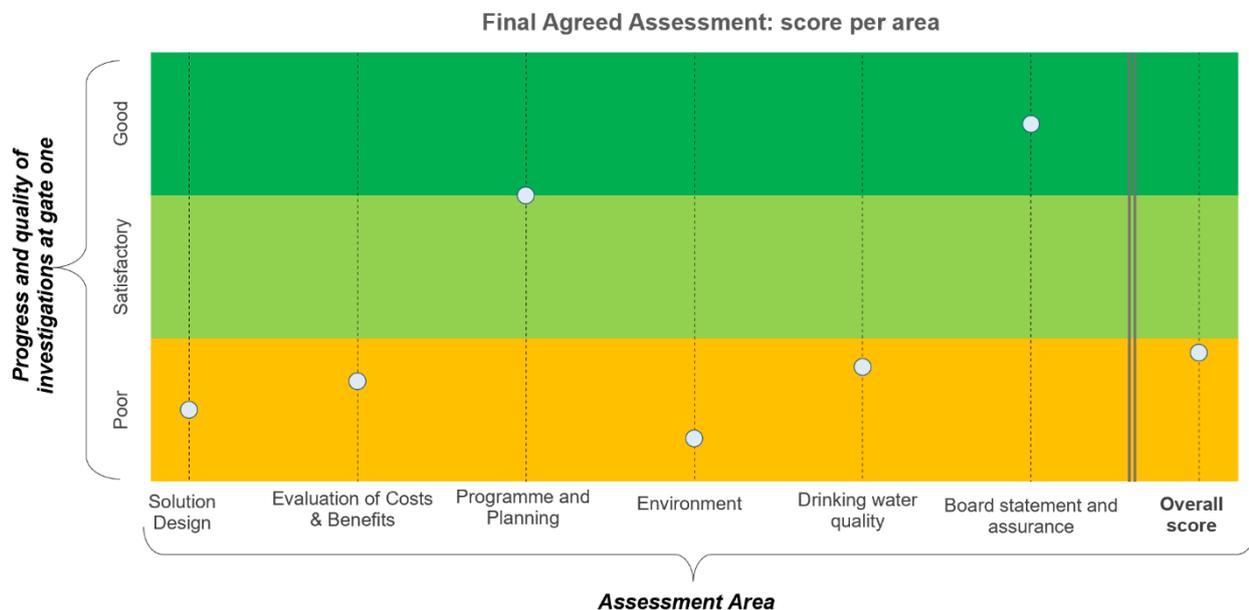
This is a new solution to the programme being proposed at gate one. The Upper Derwent Valley Reservoir Extension solution has received no funding from the RAPID programme to date and therefore no assessment of expenditure has been undertaken.

2.3 Quality of solution development and investigation

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.

Error! Reference source not found. 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 2021](#). We also assessed the Board assurance provided.

Figure 1. Assessment of progress and quality of investigation



Our overall assessment for the solution submission is that the quality of the assessment does not meet gate one expectations in many areas. We consider that a significant amount of work will need to be completed quickly to enable the solution to be reach the stage of investigation and development expected at gate two.

2.3.1 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 and regional plans.

We consider Severn Trent and Yorkshire Water have provided poor evidence of progress in developing the solution design for gate one. The submission fell short of expectations in many areas, including in particular, the presentation of sub-options, evidencing the anticipated operational utilisation, the interaction of this solution with other proposed water solutions.

Key themes for activities that will be required at the start of gate two, include developing the scope of each option within the solution, setting out the expected utilisation of the options under normal year and dry year events, including explaining the methodology to further refine utilisation calculations through gate two. The solution owners should ensure the solution and its options are fully integrated with regional planning, so that regional reconciliation decisions reflect the developed solution. Further discussions should also be undertaken with the regulators regarding the extent to which the solution could support other RAPID solutions and environmental flows as appropriate. We also expect continued stakeholder engagement, particularly regarding local impacts.

2.3.2 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 Severn Trent and Yorkshire Water have provided poor evidence of evaluating the costs and benefits of the solution to standards expected for gate one. The submission fell short of expectations in many areas, including evaluating the solution and options' societal, environmental and economic costs and benefits, and the water resource benefits. A best value assessment should also be developed to work towards a preferred option.

Key themes for activities that will be required at the start of gate two, include setting out the approaches to calculating social, environmental and economic costs of the solution and its options. Solution owners should also calculate and present the annual average and peak water resource benefit of each option. We expect both Biodiversity Net Gain (BNG) and Natural Capital Assessments (NCAs) to be completed through gate two, as well as further exploring potential wider benefits through multi-sector benefits of downstream abstractions, and local flood risk benefits. Addressing these themes should also work towards developing a best value assessment.

2.3.3 Programme and Planning

Our assessment of the programme and planning considered whether Severn Trent and Yorkshire Water 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 Severn Trent and Yorkshire Water regarding the procurement, programme and planning for Upper Derwent Valley Reservoir Extension to be satisfactory for gate one. The submission fell short of expectations in some areas, including the detail of evidence behind the procurement strategy.

Key themes for activities that will be required at the start of gate two include a more detailed, evidenced assessment of whether the solution is suitable for delivery via Direct Procurement for Customers (DPC), and detail of alternative delivery strategies. You should also further consider regulatory barriers, and other barriers that may exist due to designation of structures and national parks.

2.3.4 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 Severn Trent and Yorkshire Water to have provided poor evidence of progress in this area for gate one. The submission fell short of expectations in many areas, including environmental assessments, identifying environmental risks, provision of environmental monitoring plans, and the carbon assessment.

Key themes for activities that will be required at the start of gate two include an outline environmental monitoring plan, and the development of environmental assessments for all options within the solution in line with gate two guidance. Environmental monitoring should commence early in gate two, as soon as possible. Assessments should also outline environmental risks posed by the solution and mitigation measures required, particularly those associated with designated sites in the vicinity of the solution. A carbon assessment is also required for each option within the solution, which considers whole life carbon and consideration should be given to incorporating carbon reduction into the solution design. Carbon assessments should be presented in the context of the relevant guidance and frameworks, as well as commitments to All Company Working Group (ACWG) net-zero targets. The Environment Agency must also be consulted on changes to discharge and abstractions, including where this relates to feasibility of supporting or altering environmental flows and multi-sector abstractions downstream.

2.3.5 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 for gate one was poor. The submission fell short of expectations in many areas, including impact on drinking water quality, particularly that associated with the options to develop a new dam and reservoir. The solution owner also did not consult with local water quality teams on the solution and the potential risks from new dams and reservoirs.

Key themes for activities that will be required at the start of gate two include development of Drinking Water Safety Plans and water quality monitoring programmes, including for emerging contaminants and upstream catchment considerations. Water quality monitoring should then also commence early in gate two as soon as possible. Engagement with the Drinking Water Inspectorate will be expected at gate two.

2.3.6 Board Statement and Assurance

We consider that the assurance provided by the Boards of each of the solution owners is good. They have provided statements that indicate that they are satisfied that the Upper Derwent Valley Reservoir Expansion meets the requirements for a new solution outlined in RAPID's guidance and that they support the recommendation for the solution to be included in the RAPID programme. We note that the statement was unsigned; at gate two statements must be signed by the full Board or on behalf of the Board with clear explanation of delegation of authority from the Board to sign the statement. Further guidance regarding board assurance at gate two is provided in RAPID's gate two guidance.

3. Proposed changes to partner arrangements

This is a new solution. The proposed partners are Severn Trent and Yorkshire Water. Funding allowances are shared equally between the proposed partners unless they agree and notify RAPID of alternative cost sharing proportions before the end of the representation period.

4. 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 these remediation issues and steps 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 solution stays on track. They require urgent remediation in full.

Each priority action is viewed with equal importance, and therefore the solution team should resolve each of them to a suitable standard. Priority actions 1, 3, 4, 6, 7, 8, and 9, are to be addressed as soon as possible and the solution owners should indicate a date for their completion in their representations. The remaining priority actions, 2, 5 and 10, should be resolved by 18 July 2022.

We consider it would be appropriate to apply a delivery incentive penalty at gate two should one or more of the priority actions set out in Appendix A, not be completed to a suitable standard by 18th July 2022, or an earlier date for completion, indicated by solution owners during the representation period.

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. All priority actions, actions and recommendations are listed in the Appendix.

5. Gate two activities

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

For its gate two submission, we expect Severn Trent and Yorkshire Water to complete the activities listed in [PR19 final determinations: strategic regional water resources solutions appendix](#) as expanded on in its gate one submission and to comply with the [Strategic regional water resource solutions guidance for gate two](#).

5.1 Gate two timetable

We acknowledge the recommendation by the solution owners to move gate two submission to 31st March 2023, because of their concerns regarding the time left to complete a full programme of gate two activities that meet gate two expectations by the gate two submission date of 14 November 2022.

Given the current maturity of the solution and taking into account that it does not interact with other solutions in the RAPID programme, we agree that the date of the gate two submission should be later than 14 November 2022. The solution owners should agree the timing of their gate two submission with RAPID.

6. Next steps

Following publication of this gate one draft decision, solution owners and other interested parties are invited to respond to the draft decision. Representations, including evidence from solution owners that priority actions (identified in the Appendix) have been addressed, can be made by email to rapid@ofwat.gov.uk and will close at 6pm on 12th April 2022. All representations will be considered before our final decision is published at 10 am on 17th May 2022.

Appendix: Actions and Recommendations

Priority Actions – to be addressed early in gate two		
Number	Section	Detail
1	Solution & Options	Each solution option must be further developed to give specific detail of the scope of the option. This should include detail on feasible and realistic ranges of dam raising heights, reservoir storages, locations of each option, and Deployable Output (DO) modelling to determine water into supply benefits
2	Utilisation	Ensure utilisation is determined through regional modelling, or utilising regional modelling outputs, early in gate two, including normal year use and for events up to the 1:500 year event. Provide detailed explanation of the methodology for defining utilisation at gate two.
3	Solution Interaction	Conduct feasibility discussions with the Environment Agency regarding interaction with other solutions, particularly support for other solutions downstream such as South Lincs Reservoir, and how this would be arranged with put/take licensing.
4	Water Resource Benefit	Provide scope expected yield releases and Deployable Output benefit to Yorkshire Water for each option, as annual average and critical period for events up to 1:500.
5	Procurement Strategy	Carry out an assessment of suitability for delivery via DPC for size and discreteness criteria for each of the options identified in the solution submission ahead of gate two.
6	Procurement Strategy	Provide analysis for the different tender models for delivery of this project, whether by DPC or other means.
7	Environmental programme	Prepare a detailed environmental programme. The strategic resources option (SRO) should produce a detailed environmental programme that outlines tasks that will be used to inform a robust environmental assessment. This should follow gate two guidance and consider the following; gap analysis, additional monitoring, modelling and environmental surveys.
8	Drinking Water Quality Risk Assessments	Review current DWSP & risk assessments to identify any issues arising from additional catchment / new dam. Develop a monitoring plan to identify any emerging contaminants of concern in line with ACWG monitoring methodology for all options being considered.
9	Drinking Water Inspectorate Engagement	Confirmation of ongoing engagement with the Drinking Water Inspectorate, by establishing an engagement plan.
10	Carbon	Undertake a carbon assessment for each option within the solution. Show methods for assessment, including adhering to relevant guidance and frameworks. Explore opportunities to incorporate carbon reduction and mitigation into the design of the solution itself.
Actions – to be addressed in gate two submission		
Number	Section	Detail
1	Societal, environmental and economic costs and benefits	Determine societal, environmental and economic costs and benefits for each option through gate two. Biodiversity Net Gain and Natural Capital Accounting assessments must be completed for gate two, following relevant guidance.
2	Wider resilience benefits	Ensure wider resilience benefits are investigated and quantified as part of the gate two submission. This includes wider resilience gained as a result of the solution, in addition to resilience of the solution itself.
3	Best Value	Develop a best value assessment of the solution and the options within the solution.
4	Strategic Context	Continue to update Regional Groups with option data as the options refine. Provide early inaction where this will vary significantly from data submitted to regional

		groups, or could be considered a material change as the type of option being submitted.
5	Stakeholder Engagement	Produce a stakeholder engagement plan early in gate two and undertake solution specific stakeholder engagement throughout gate two.
6	Regulatory and other barriers	Carry out further work to understand environmental risks issues and mitigation of the solution. Regulatory barriers also need to be investigated, and other barriers that may exist due to designation of structures and national parks.
7	Environmental Assessment	Complete a Water Framework Directive and an 'informal' Habitat Regulations Assessment as per gate two guidance for all potential sub options and discuss with the relevant regulators Strategic Environmental Assessment requirements. The assessments should also ensure they meet local requirements and take into account in combination impacts. Ensure continuous review and update of the initial assessment of environmental risks and consider potential mitigation measures.
8	Drinking Water Quality	Undertake monitoring to identify any emerging contaminants of concern and any other risks identified in DWSP review. Investigate the anticipated change in abstracted Water Quality during gate two using the ACWG methodology. Any additional upstream risks with new dam should also be investigated.
Recommendations		
Number	Section	Detail
1	Environmental assessment	Consider the time required for adequate ecological and water quality monitoring. Changes in the outflow regime of Ladybower reservoir to the Derwent may impact protected features further downstream and those associate with the River Trent. Any cumulative and in-combination impacts with other projects and SROs shall be addressed.

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