

Dear Paul

Upper Derwent Valley Reservoir Expansion **Gate 1 Actions - Representations**

Thank you for the Draft Decision for the Upper Derwent Valley (UDVRE) Strategic Resource Options (SRO) project issued in March 2022. Firstly, we are delighted that there are no disallowable costs or penalties proposed as part of this decision. Whilst we are disappointed that the overall rating of the Gate 1 Paper is 'poor', we fully understand that this is because we agreed with you to submit quickly for UDVRE, but you are keeping the same criteria that you have used for all Gate 1 submissions.

The project team, Severn Trent Water (STW) and Yorkshire Water (YW), would like to respond on two elements: Gate 2 funding and the high priority actions. Our response below is broken into these two elements of Budget and Priority Actions.

Budget

The Gate 2 funding stated in the Draft Decision is £2.75m, compared to our original estimated costs of £6.79m included in our Gate 1 submission. Since our Gate 1 submission, the solution and estimates have been reviewed. Whilst we are yet to understand the most likely option in detail, it could include multiple dam raising options or the larger new reservoir option. The ongoing regional planning reconciliation indicates that a greater water supply is required to meet future demands. This has increased from that indicated when we prepared and submitted our Gate 1 submission. Because of this a single dam raising is now considered unlikely to be sufficient. Through the regional planning, two reservoir expansions or the new fourth reservoir look the most likely options. The capex estimates of these are as follows:

- Expanding two reservoirs (Howden and Derwent) is expected to cost £664m
- A new fourth reservoir is expected to cost £1.1bn

We recommend that the most likely solution is to raise the two dams and that this is used to determine the Gate 2 funding. However, it should be noted that future scenarios may lead to the fourth new reservoir becoming the most likely option as the SRO progresses.

High Priority Actions

We have detailed our response to each of the high priority actions below and indicated whether we are able to achieve full or partial completion by 18 July 2022. Table 1 includes a summary of our position with regards to each of the actions:

Status by 18 July 2022	Action
Complete to date	Action 7
Able to achieve full completion	Actions 3, 4, 5 and 9
Able to achieve partial completion	Actions 1, 2, 6, 8 and 10

Table 1: Summary position of actions by 18 July 2022

Action 1:

Each solution option must be further developed to give specific detail of the scope of the option. This should include:

- (i) detail on feasible and realistic ranges of dam raising heights, reservoir storages, locations of each option, and;
- (ii) Deployable Output (DO) modelling to determine water into supply benefits.

Response:

- (i) We will be able to achieve partial completion to this action by July 2022.

The options appraisal will be nearing completion allowing initial details to be provided on feasible and realistic ranges of dam raising heights, reservoir storages and locations of each option. These will be subject to further refinement through the detailed development stage. Our July submission will include our plan to complete the assessments ready for our Gate 2 submission.

- (ii) We will be able to achieve partial completion to this point by July 2022.

The DO benefit modelling is reliant on completion of the sustainable yield analysis for each option which will not be available in July 2022. In our July submission we will include details of the range of additional sustainable yield available for the options considered along with our plan to carry out the DO modelling. The DO benefit assessments will be detailed in our Gate 2 submission.

Action 2

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.

Response:

We will be able to achieve partial completion to this action by July 2022.

The utilisation assessments are reliant on outputs from our sustainable yield analysis. As detailed above, this will not be available in July 2022. Our July submission will include a plan detailing how we will undertake this work ready for our Gate 2 submission. This will include normal year use and for events up to the 1:500 year event

It is worth noting that much of the benefit from the SRO is that it will be utilised as a 'Business as Usual' source and will support reductions in abstractions of other sources.

Action 3

Conduct feasibility discussions with the Environment Agency regarding interaction with other solutions, particularly:

- (i) support for other solutions downstream such as South Lincolnshire Reservoir, and:
- (ii) how this would be arranged with put/take licensing.

Response

We will be able to achieve full completion of this action by July 2022.

Engagement with the Environment Agency (EA) and Natural England (NE) has already begun, via the National Assessment Unit, and will continue to Gate 2. Other key stakeholders and water users will also be engaged to understand the potential uses of water from the reservoir outside of the Water Resource benefit for STW and YW.

The environmental investigations for UDVRE will extend down the River Derwent to the junction with the River Trent, where the investigations being carried out by the Minworth Reuse and South Lincolnshire Reservoir (SLR) SROs are taking place. This will allow us to assess the impact of any releases that could be used for any potential abstractors downstream on the River Derwent, or on the River Trent downstream of the confluence with the River Derwent.

- (i) We are working partners of the River Trent Working Group, and aware that there will be water requirements from the River Trent for both the energy sector and agriculture as well as other Non-Public Water supply users. As the scheme design develops and an understanding of the increased yield is better understood, we will work with this working group and other stakeholders to understand how the water could be best utilised. We will carry out these investigations in parallel; assessing how the water could be utilised whilst investigating the technical feasibility of the expansion. This could have a direct impact on the size of the scheme required.
- (ii) We are engaging with other SROs, such as Minworth Reuse, Grand Union Canal and SLR to understand whether water from UDVRE could support directly (released as put and take for SLR), or indirectly (used as compensation for North Muskham Hands off Flow to support Minworth SRO) for the benefit of other SROs. The UDVRE SRO is being

incorporated into modelling work on the Tame and Trent system. The full study and potential benefits will be reported at Gate 2 in 2023.

Action 4

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.

Response

We will be able to achieve full completion of this action by July 2022.

At a basic level, the DO benefit to YW has already been modelled for the Dry Year Annual Average (DYAA). Should the import be lost, then YW's DO would reduce by c. 40 Ml/d, as stated in the Gate 1 business case submission. Therefore, in simple terms, the benefit of maintaining the import is 40 Ml/d, assuming sufficient water can be made available to maintain the current import arrangements.

Further consideration is needed on the impact of the loss of the transfer over a range of scenarios including critical period and enhanced environmental destination and this may be greater than the DYAA impact. This will not be available by July 2022 but will be considered through YW's Water Resource Management Plan (WRMP) and the Water Resources North (WReN) Regional Plan in late 2022, and as part of our Gate 2 submission.

There is a theoretical possibility of greater benefit to YW if reservoir yield is increased allowing a larger import (or a more secure import during extreme droughts). Any assessment of this would be dependent on the size of any increase, which will only be known once the yield analysis is completed and so will be included in YW's WRMP and the WReN Regional Plan in late 2022, and as part of our Gate 2 submission.

Action 5

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.

Response

We will be able to achieve full completion of this action by July 2022.

A specialist consultant is currently being procured to undertake the DPC assessment for this SRO. An initial assessment of Test 1 (size) and Test 2 (discreteness) will be completed and shared with RAPID by 18 July 2022.

By October 2022 we aim to have a detailed evaluation of the procurement strategy alternatives for each option (Test 3) which will then be subject to the assurance process and later submitted with the Gate 2 paper.

Action 6

Provide analysis for the different tender models for delivery of this project, whether by DPC or other means.

Response

We will be able to achieve partial completion to this point by July 2022.

We will not have completed the analysis of different tender models by 18th July 2022. However, we can share details of the typical models used in the construction industry, similar to that provided in our other Gate 1 submissions (e.g., Minworth SRO) but specific to this SRO. To fully analyse these models for each solution would require further details of the scope to be confirmed and this will be completed for Gate 2. If the analysis is undertaken before such details are available, it would be likely to change, and re-work may be required. For reasons of efficiency, therefore, we propose to fully complete this analysis for Gate 2, and not by July 2022.

Action 7

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.

Response

We have completed this action by providing the detailed environmental programme to the EA/NE via NAU on 30 March 2022. We will also follow this up with a full engagement plan for the NAU and this will be shared in the near future and before the 18 July.

Action 8

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.

Response

We will be able to achieve partial completion to this point by July 2022.

Most of the options being considered as part of this SRO involve making greater use of existing sources of water. STW and YW therefore already have a good understanding of risks associated with these sources and we do not expect the SRO options to materially change those risks. Where new sources may be considered, as part of the YW backfill option, an understanding of raw water quality and risks will form part of the options appraisal process for WRMP, appropriate to the timing of implementation of new sources.

More detailed understanding of future risks will not be available by 18th July 2022 but will be included in our Gate 2 submission. We will engage with Drinking Water Inspectorate and the EA, and use the ACWG methodology, through Gate 2.

Action 9

Confirmation of ongoing engagement with the Drinking Water Inspectorate, by establishing an engagement plan.

Response

We have completed this action and we have arranged quarterly meetings with the DWI.

Action 10

- (i) Undertake a carbon assessment for each option within the solution.
- (ii) Show methods for assessment, including adhering to relevant guidance and frameworks.
- (iii) Explore opportunities to incorporate carbon reduction and mitigation into the design of the solution itself.

Response

- (i) We will be able to achieve partial completion to this point by July 2022.

We will be able to supply an initial carbon assessment and the plan of completion to get to Gate 2.

The initial carbon assessments will be available for our July submission. These will then be refined as we take each option through detailed development and will be updated accordingly for our Gate 2 submission.

- (ii) We will achieve full completion of this by July 2022.

In July we will include details of our carbon methodology demonstrating adherence to relevant guidance and frameworks.

- (iii) We will be able to achieve partial completion to this point by July 2022.

Carbon reduction and mitigation opportunities will be assessed through the detailed development phase which will follow on from completion of our options appraisal in mid-June. In July will include details of our plan to complete this activity ready for our Gate 2 submission.



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Finally, copy of our current high-level plan. This shows the timeline for undertaking the work to achieve submission of the Gate 2 paper.

If there are elements included in our representation above where you would like to discuss with the team, please either telephone us or send your queries to x, and x; we would welcome the opportunity to provide further clarity where needed. We look forward to receiving the Final Decision and taking this SRO forward to Gate 2.

Yours sincerely

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