

June 2023

**Strategic regional water
resource solutions:
standard gate two final decision
for the Grand Union Canal
Transfer**

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1. Introduction

The purpose of this publication is to set out our final decision about whether the Grand Union Canal Transfer (GUC)¹ solution should continue to receive development funding². 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 Severn Trent Water and Affinity Water Grand Union Canal Transfer can be found in the Grand Union Canal Transfer publication document on the [Affinity Water](#) website³.

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.

¹ Referred to in PR19 final determination as “Grand Union Canal Transfer”

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

³ [Strategic Resource Options | Affinity Water Have your say \(engagementhq.com\)](#)

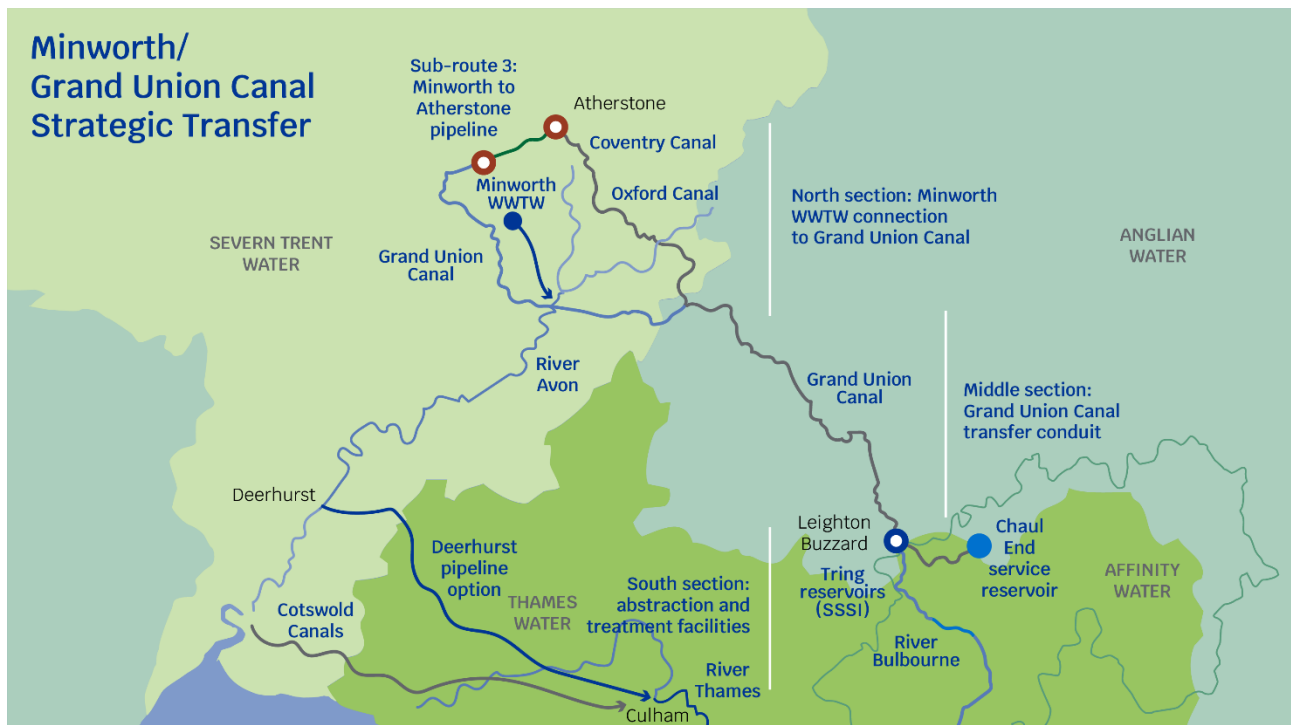
2. Solution Summary

2.1 Solution summary

The Grand Union Canal Transfer utilises the existing canal and a new pipeline to convey raw water from the Minworth solution in the Severn Trent Water supply area to areas of water deficit in Affinity Water's supply area. Water will be abstracted in the southern section of the GUC at Leighton Buzzard and treated using a multiple-barrier approach and final conditioning prior to distribution to customers.

The solution's deployable output will be 50 megalitres per day (Ml/d) by 2031/32, with the potential for a further 50 Ml/d by 2040–2050 if required. Flow will be transferred from the Minworth solution via a new pipeline over approximately 20km to a discharge point into the Coventry Canal. For much of its length, the transfer will flow along the existing canal network using gravity, making use of pumping stations and by-passes as necessary. The water will then be abstracted at Leighton Buzzard for treatment.

Figure 1. Grand Union Canal Transfer Solution Schematic



3. Summary of representations

3.1 Representations received

We have received the following representations relevant to the Grand Union Canal Transfer.

Table 1. Summary of representations

Representation from	Summary of representation
Wantage and Grove Campaign Group (WaGCG)	<p>Solution costs</p> <ul style="list-style-type: none"> • 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. <p>Interconnectedness</p> <ul style="list-style-type: none"> • WaGCG suggest that the gated process should consider the connected solutions together. • They assert that the carbon footprint, financial cost, return on value, cost to the consumer, recreation and amenity value, and environmental impact of any integrated solution is impossible to define from the fragmentation of the strategies. • They find that the current process does not allow for comparison of different options. <p>Water resource planning</p> <ul style="list-style-type: none"> • WaGCG are concerned that the data used for population and climate change forecasts is inappropriate. • They argue that GUC should continue to be implemented, even if not strictly needed, due to the resilience benefits. If GUC were expanded to its 100ML/d phase 2 capacity, it could provide resilience for both Affinity Water and Thames Water with relatively little additional capital cost.
Oxfordshire County Council (OCC)	<p>Stakeholder engagement</p> <ul style="list-style-type: none"> • OCC note that RAPID schemes should be informed by consultation with people that live close to where the schemes are constructed, and that RAPID should highlight in its decisions the importance of working with local councils and communities. <p>Water resource planning</p> <ul style="list-style-type: none"> • OCC are concerned that additional water supply needed in the South East has been seriously overestimated because of incorrect population growth models and poorly evidenced environmental targets.

	<ul style="list-style-type: none"> • They assert that water companies should do more to reduce leakage and reduce demand and then the need for building new items of strategic infrastructure will be reduced. • They state that there are other options which could provide water supply which are not included in the RAPID gated process. The regulators’ funding should also support the development of a wide range of options including smaller, more innovative and less environmentally damaging solutions. They state that resilient schemes such as water recycling, water transfers, and desalination should be prioritised so that other options such as the SESRO are not needed. • They would like to see funding, for example, of nature-based catchment management schemes where projects are developed to retain water, manage flood risk and create new nature reserves, alongside a much greater focus on aquifer recharging. • They state that RAPID needs to focus much harder on building early resilience to the accelerating, increasingly malign and radically uncertain impacts of climate change. Radical uncertainty in the face of existential threats requires a “least risk” approach. • They state that the top priority needs to be building resilience to unpredictable and rapidly evolving climate impacts. This would result in a fundamentally different prioritisation based on resilience to future water shortages and speed of delivery. Given the urgency of climate change, the need for new items of strategic infrastructure that will take a long time to build is over-estimated relative to the need for smaller schemes that can be brought forward quickly and provide resilient sources of water. They favour the use of existing or refurbished infrastructure, such as the canal transfers, or infrastructure which is underground, such as pipelines. • They note the increasing impact climate change is having on weather systems and note concern with the solution delivery times that the RAPID programme is working to. • They believe that the water sector should be aiming for resilience against the worst case scenarios that could arise from climate change, for example aiming for extreme multi-year drought by the early 2030s. • They argue that GUC is a sensible option which uses existing infrastructure to provide water resilience to Affinity Water.
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	<p>Decision making</p> <ul style="list-style-type: none"> OCC expect RAPID will need to review its draft decisions to make sure that the final decisions are consistent with the recently published National Policy Statement. <p>Gate timing</p> <ul style="list-style-type: none"> OCC state that RAPID’s draft decisions offer various gate three dates going forward. They query this amendment to the process which previously envisaged that schemes would be able to be compared with one another at the same time and that the comparison is made more complicated with timelines dispersed over six years. <p>Carbon costs</p> <ul style="list-style-type: none"> OCC believe that RAPID should continue to seek evidence that solution partners are embracing innovative designs and opportunities to generate or be powered by renewable energy and/or sequester carbon. They believe that a comparable carbon assessment should be undertaken for each solution and that solutions should set out net zero carbon commitments. They believe that RAPID should be clear in their decisions that gate submissions will require solution partners to set out the carbon costs of their proposals in relation to the government’s commitments to reduce carbon emissions, and that the carbon footprint of solutions could be compared when choosing between options. They believe that RAPID should compare each of the draft decisions to consistently seeking evidence about carbon costs. They believe that there should be an account provided of the amount of renewable energy entered into the national grid from the solution once constructed, and whether low carbon hydrogen will be available and will be used by the solution. They note that low energy demand from the solutions once in use will not be an effective mitigation for high energy use in construction.
<p>Affinity Water, the Canal and River Trust and Severn Trent Water</p>	<p>Gate timing</p> <ul style="list-style-type: none"> In their joint representation, they request that the date of the final gate three decision remain in December 2024, rather than RAPID’s recommendation to align with other solutions and use the earlier date of September 2024. It is argued that the prerequisite market engagement ahead of the gate three submission and the stage two activities required by RAPID’s direct procurement for customers (DPC) guidance would be difficult to achieve by September 2024. They argue that moving gate three forward to September 2024 prevents data collection during the critical period of summer 2024. By delaying gate three to December 2024, they argue this will allow for summer monitoring, which will

	<p>provide data on when the scheme is most likely to be used, i.e. summer.</p> <ul style="list-style-type: none"> The joint representation states that the companies understood that gate four would occur on the awarding of the Development Consent Order (DCO), rather than the application for it. They argue this means that gate four should now be 2027, rather than RAPID's suggestion of November 2025. This is to allow time for a sufficient DCO application. The joint representation states that the 2019 price review (PR19) Final Determination appendix mentions a phase 5 and gate five, but this is not mentioned in the current funding. They would like to see discussion with RAPID over the potential need for a gate five, what it would involve, the funding, and any immediate next steps. <p>Point of correction</p> <ul style="list-style-type: none"> Within RAPID's draft decision document, section 7.1 states 'proposed a gate three of October 2024', whereas Affinity Water, the Canal and River Trust and Severn Trent Water stated a period from December 2022 to Q3 2024. The use of a time period reflects that the timing of gate three is dependent upon the initial review of the DCO pre-application planning process. <p>Gate allowance</p> <ul style="list-style-type: none"> The joint representation would like to confirm the final decision for funding for AMP 8 will be separately determined through the PR24 process, reflecting any changes to project schedules arising from the Water Resource Management Plan (WRMP) process. They understand that the decision to allow 65% of the additional funding requested was based on RAPID's assessment that the estimates 'are not fully mature' but would welcome discussion on how it will be decided. It is also argued that limitations regarding funding could impact the project timeline and the DCO application. They provided their final gate two expenditure. <p>Cost sharing</p> <ul style="list-style-type: none"> The joint representation argues that RAPID's proposed changes to the cost sharing rate does not allow the project to make a judgement on key risks and instead incentivises deferring work which may damage the success of the project, costing customers more. They would welcome further discussion on this topic. <p>Programme and planning</p> <ul style="list-style-type: none"> They would welcome discussion and clarity on RAPID's actions on 'Programme and Planning', particularly regarding the assessment of evidence provided, and actions 4 and 5 as described in the draft decision document.
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<p>Group Against Reservoir Development (GARD)</p>	<p>Water resource planning</p> <ul style="list-style-type: none"> GARD argue that GUC is a good option for a resilient supply of water to the South East, using existing infrastructure. They propose that the final gate two decision 'require investigation bringing the completion of the full 100MI/d transfer scheme to its earliest feasible date and by 2035 at the latest.' <p>Solution costs</p> <ul style="list-style-type: none"> GARD states that, although there is now a fair amount of cost detail available in the gate two reports for the strategic options, there are no option cost comparisons to justify the selection of options and their sequence of development. These comparisons might be expected to be prominently available in regional plans and the WRMPs, but there are none to be seen. This is a major failing in transparency which needs to be addressed in gate three.
<p>Historic England</p>	<p>Historic environment</p> <ul style="list-style-type: none"> Historic England states that there has been little engagement with themselves, and therefore they cannot properly comment on specifics of the scheme. Historic England would like to see this rectified soon. They would like to see detailed heritage and archaeological assessments made on the route.
<p>North Warwickshire Borough Council</p>	<p>Solution design</p> <ul style="list-style-type: none"> North Warwickshire Borough Council argue that the specific preferred route is not the best route available, and that another should be selected instead. They raise a question on the specifics of the infrastructure. They ask whether the pipeline would be cut and cover, and whether the project would qualify as a Nationally Significant Infrastructure Projects (NSIP).

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 Solution costs

Water resources infrastructure options are considered and selected as part of regional plans and water resource management plans not the gated process. The gated process provides cost information for other purposes.

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

3.2.2 Interconnectedness

RAPID took a decision at gate one to continue to develop solutions separately rather than collectively. It is recognised that, as water resources planning and the gated process advances, solutions may provide resilience benefits to their own regions, to other solutions, or to other regions beyond those served by the individual solution.

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.

3.2.3 Water resource planning

The water resources planning process assesses the need for these solutions and the socioeconomic assumptions such as those around growth underpinning the modelling for these processes.

Company WRMPs and Regional Plans develop their demand forecasts in line with Water Resource Planning Guidelines, which sets out requirements for using Local Plan and Office for National Statistics population growth projections. Ofwat's long term delivery strategies guidance also defines using two population forecasts in low and high population scenarios. We have assessed where companies have adhered to these methods in order to set out the needs case for the RAPID solutions.

Reducing leakage and being more efficient in using water both have a significant role to play but will not be sufficient alone to ensure security of water supplies in the future.

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.

The anticipated effects from industry measures to reduce leakage and reduce demand are taken into account in water resource planning as part of the assessment of whether new water resource infrastructure is required. The national framework – published by the Environment Agency in 2020 – set out expectations that the industry reduces demand to around 110 litres per person per day and reduces leakage by 50%, both by 2050. The conclusion of the water resource management planning process is that, even with these reductions, new water resource infrastructure will be needed to improve drought resilience, reduce the impact of abstraction on the environment, supply a growing population and adapt to climate impacts.

The draft Water Resource Management Plans (WRMPs) 2024 set out a much broader range of supply and demand options which maintain resilience in the companies supply-demand balance over the entire planning horizon (at least 25 years), including in the short term such as over the 2025–2030 period, and longer term, such as the inclusion of the RAPID strategic solutions. The forecast supply-demand balance in the WRMPs includes allowances for climate change across the entire planning horizon, including short term and long term, in line with the water resources planning guideline supplementary guidance on climate change. The plans also incorporate adaptive planning, which test several plausible extremes for climate change, to ensure the plans can adapt to different scenarios if they come to fruition, including longer duration extreme multi-year events.

The RAPID programme is one of several approaches the sector is working with to ensure short-term and long-term resilience in the sector.

Ofwat have allocated up to £469 million for companies to investigate and develop integrated strategic regional water resource solutions during 2020–25. This enables companies to develop solutions on behalf of customers that are ‘construction ready’ for the 2025–2030 period, and that protect and enhance the environment and benefit wider society. This intervention further demonstrates our commitment to supporting long-term resilience and innovation.

There are solutions in the RAPID programme that use existing or refurbished infrastructure, such as Grand Union Canal and North West Transfer. There are also several solutions that are considering the use of pipelines to transfer water such as Anglian to Affinity Water.

In terms of non-capital options, Ofwat are encouraging nature-based solutions through PR24 as referred to in PR24 final methodology Appendix 9 Setting Expenditure Allowances.⁴

⁴ [PR24 final methodology Appendix 9 Setting Expenditure Allowances](#)

3.2.4 Historic environment

During further progress through the gated process, solution owners will continue to develop their environmental assessments, including consideration of the historic environment. A Development Consent Order (DCO) application or an application for local planning permission for the solution will need to be supported by an Environmental Impact Assessment (EIA) in which the effects of the solution on the historic environment will be assessed and proposals for mitigating any adverse effects will be included. The acceptability of the effects and mitigation will be a matter for the authorities determining those applications and will not be a decision reached by the gated process.

We agree that progress of this solution would benefit from engagement with Historic England. We have added a recommendation to the final decision document.

3.2.5 Gate allowance

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.

3.2.6 Solution design

The solution is currently at the concept design stage. The solution, including the final route, and construction method will be refined as it moves through the gated process and the solution completes pre-planning activities. The solution owner will be responsible for deciding whether to make an application for a DCO or local planning application(s) for the solution. Our gate three guidance asks the solution owner to include a consenting strategy as part of its gate three submission and to set out the progress it has made in implementing that strategy.

3.2.7 Stakeholder engagement

We agree that stakeholder engagement is important. Solutions will need to follow gate three engagement guidance which include:

- pre-planning statutory consultation as described in The Planning Inspectorate Advice note 11: working with public bodies in the infrastructure planning process and Annexes A–H⁵
- Plans showing ongoing and continued engagement, that have been shared with public and statutory bodies, including any required enhanced advisory services.
- customer engagement, particularly on changes of source where relevant.
- Engagement with all stakeholders affected by the solution's development.

3.2.8 Decision making

The National Policy Statement for water resources infrastructure (NPS) will be used as the primary basis for examination by the Examining Authority of development consent order applications for water resources nationally significant infrastructure projects. It will also be used by the Secretary of State in making decisions on those applications and may be a material consideration in making decisions on water resources infrastructure development that falls within the local authority planning regimes. As such, the solution owners will need to address the NPS for Water Resources Infrastructure in the applications that they make at a later stage for development consent orders or planning consents. However, it is not a relevant consideration for Ofwat's earlier decisions at gate two on the continuation of funding for progressing the solutions to gate three.

The funding supports the acceleration of regional solutions that we expect to play a significant role in long-term resilience and will feature in future company business plans and water resources management plans. These regional and inter-regional solutions are complemented by the delivery of other solutions identified in companies' business plans within supply-demand balance enhancement programmes which include smaller supply options, improved connectivity of networks, water efficiency programmes and leakage management.

3.2.9 Carbon costs

Solution development to gate three should continue to build from the gate two submissions. In particular, in the gate three guidance, we are asking solutions to continue to follow the Water Resources Planning Guidelines for WRMP24 section 8.3.2 (published on April 2022) which states expectations for accounting for and reducing greenhouse gas emissions. In Wales, expectations are set out in section 3 of the guiding principles (published April 2016)

⁵ [Advice notes | National Infrastructure Planning \(planninginspectorate.gov.uk\)](https://www.planninginspectorate.gov.uk/advice-notes/)

for WRMPs. We are asking companies to reduce and mitigate embodied carbon as much as possible using standard approaches and appropriate frameworks. On 6 January 2022, Ofwat published its net zero principles position paper⁶. Solutions should be designed in line with these principles. In particular, companies are encouraged to ensure solutions:

- are reflective of national government targets on net zero
- prioritise the reduction of GHG emissions before the use of offsets, doing so in line with the IEMA GHG Management Hierarchy⁷ and;
- clearly address both operation and embedded emissions

3.2.11 Point of correction

Section 8.1 refers to the submission for gate three, not the period of time in which the solution owner will do gate three activities.

3.2.12 Gate timing

The solutions are due to start construction at different times, therefore after gate two the solutions need to follow different timetables. Beyond gate two, gate alignment across the whole programme becomes less important. It is more important the gates align with pre-planning application activities. Beyond gate three the timings also become more dependent on external factors such as the planning application process. The need for flexibility and bespoke solution gate timings will be reflected in future decisions.

We have considered Severn Trent Water and Affinity Water's reasoning for gate three timing and agree that the Grand Union Canal Transfer gate three should be December 2024.

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

3.2.13 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

⁶ [Net-zero-principles-position-paper](#)

⁷ The GHG Management Hierarchy, as detailed by the Institute of Environmental Management and Assessment (2020 version), is a framework organisations can use to guide the scoping and strategic planning of their energy and carbon management activities.

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.

3.3 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 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	Grand Union Canal Transfer
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 all priority actions and actions from previous gates addressed?	Either complete or partially complete as set out in Section 5.2
Suitable timing for gate three has been proposed	RAPID agree with the reasoning for gate timing and accept gate three will be December 2024.

4.1 Solution progression to standard gate three

The evidence suggests that the solution is a potentially valuable way of 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, if a conditional review point is set for Minworth, we may also decide to set a conditional review point (Conditional Review Point) for the GUC solution as well. If we do so, then at the Conditional Review Point for GUC, we may decide that GUC should not progress beyond the Conditional Review Point or should only progress subject to further priority actions, actions or recommendations. The Minworth solution is reported in its own gate two submission and in our decision on Minworth. Due to the dependency of the GUC solution on Minworth as the source of raw water to support the new GUC abstraction at Leighton Buzzard, any decisions relating to Minworth progression have the potential to impact the possibility for GUC to progress. 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.

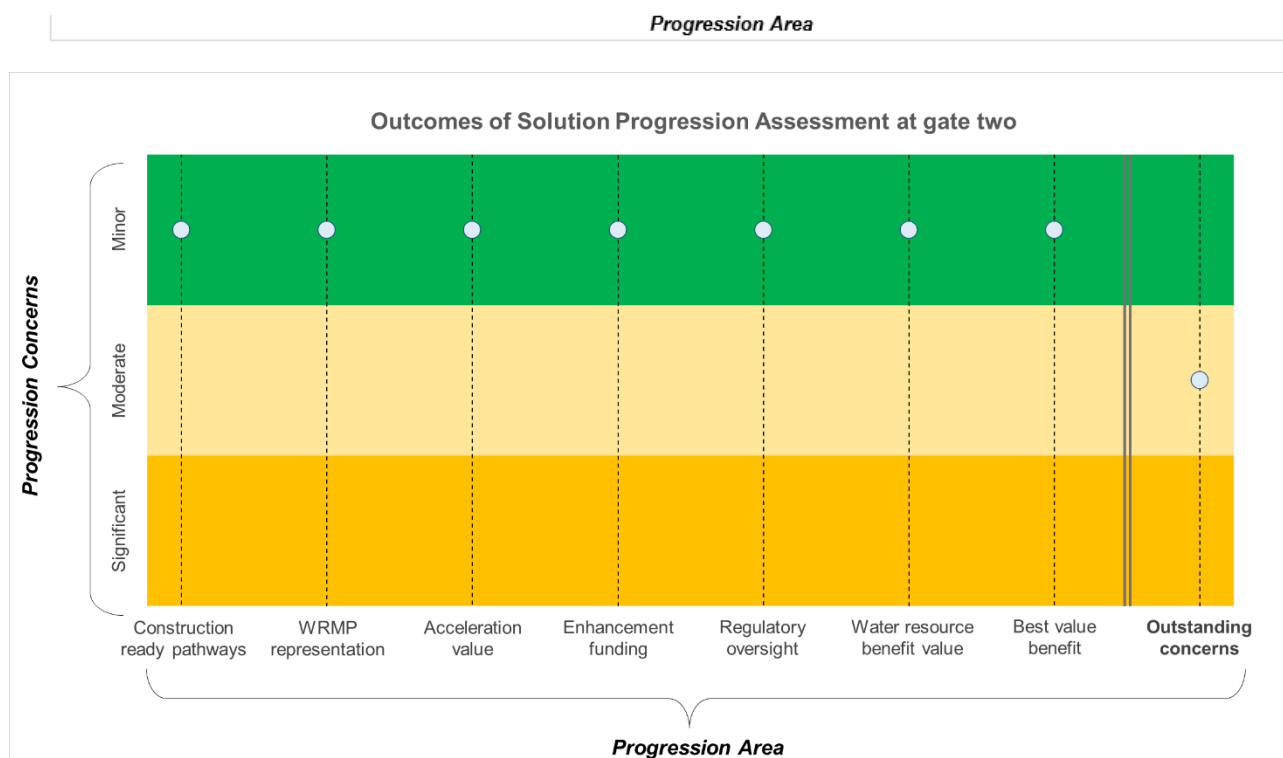


Figure 2. Assessment of solution's progression concerns

Table 3. Final decision progression criteria

Progression criteria	Grand Union Canal Transfer
Solution owners	Severn Trent Water and Affinity Water
Is the solution in a preferred or alternative pathway in relevant regional plan or WRMP (where applicable) to be construction ready by 2030?	Yes, the solution is chosen in Affinity Water's draft water resource management plan (WRMP24) as a solution on its preferred pathway, which is the relevant plan for the standard track. The solution is also in the WRSE draft regional plan. The solution will be construction ready by 2030. No further action is required on this progression criteria.
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?	No, the regulators do not have concerns about how the solution is represented, or the information about the solution in the Affinity Water draft WRMP24, or WRSE draft regional plan. No further action is required on this progression criteria.
Is there value in accelerating the solution's development to meet a company's or region's forecast supply deficit?	Yes. A solution is required to address Affinity Water's forecast deficit. No further action is required on this progression criteria.
Does the solution need continued enhancement funding for investigations and development to progress?	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.
Does the solution need the continued regulatory support and oversight	Yes. The solution will continue to benefit from the regulatory support and oversight provided by being included in the RAPID programme.

provided by the Ofwat gated process and RAPID?	No further action is required on this progression criteria.
Does the solution provide a similar or better cost / water resource benefit ratio compared to other solutions?	Yes. This solution does provide a similar or better cost / water resource benefit ratio compared to other solutions.
	No further action is required on this progression criteria.
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?	Yes, this solution has the potential to provide similar or better value (environmental, social and economic value – aligned with the Water Resources Planning Guideline) compared to other solutions.
	No further action is required on this progression criteria.
Does a regulator or regulators have outstanding concerns that have not been addressed through the strategic planning processes taking into account proposed mitigation?	Yes. There remains a significant programme of environmental monitoring, assessment and modelling required to determine potential environmental impacts with confidence. Work is also required to develop any necessary mitigation measures. The timescales within which all of the necessary environmental work that will need to be completed are ambitious.
	Additionally, comprehensive water quality monitoring should continue, and both stakeholder and customer engagement needs to be undertaken by gate three.
	This progression concern is addressed in Section 4.4.5 Environmental Assessment and gate two actions 5 to 10 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. Grand Union Canal Transfer funding allowances (2017/18 Prices)

	Gate one	Gate two	Gate three	Gate four	Total
Grand Union Canal Transfer gated allowance	£1.80m	£2.70m	£8.25m	£7.20m	£19.95m
Comment	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.
Previous Allowance	£1.80m	£2.70m	£6.30m	£7.20m	£18.00m
Change from Previous Allowance	£0.00m	£0.00m	£1.95m	£0.00m	£1.95m

This funding has been revised to account for forecast costs at gate three. We have determined that across all solutions, gate three costs have risen due to factors such as increases in solution design costs, changes in scope and additional funding required to develop the EIA, water quality assessments, ground investigations and other environmental field studies and assessments.

The GUC solution will be allowed to spend up to £8.25 million to undertake gate three activities, representing an increase of £0.68 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 owner(s) 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.

Grand Union Canal Transfer has carried forward £0.31m underspend from gate one, increasing the allowance available to them at gate two to £3.01m. Any early gate three expenditure will be considered in the allowance for gate three.

Our assessment of the efficient costs as spent on standard gate two activities results in an allowance for this solution of £2.78m (of £2.78m claimed). Grand Union Canal transfer has therefore underspent its combined gates one and two allowance by £0.23m and may take this

underspend forward to gate three, increasing the allowance available to them at gate three to £8.48m.

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 the Grand Union Canal Transfer is progressing to gate three, this will apply here, subject to any decisions taken at the Conditional Review Point.

We expect the solution owners to provide a report on the expenditure incurred up to the December 2023 checkpoint 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.

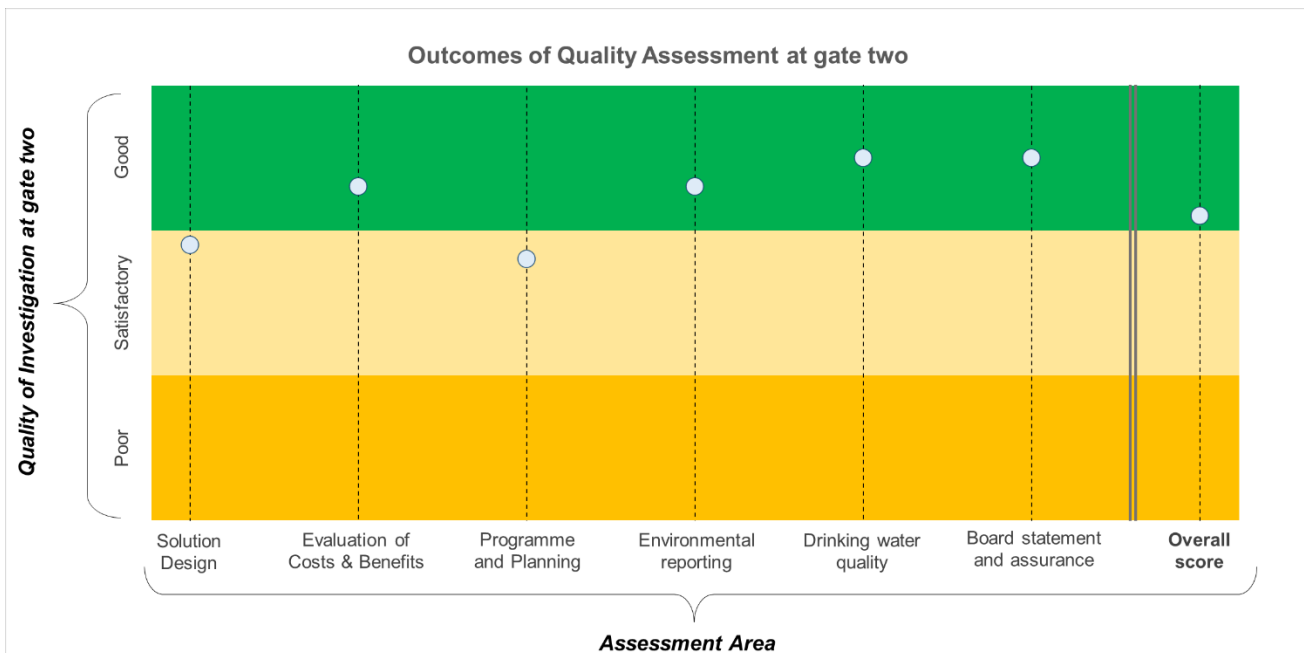


Figure 3. Assessment of quality of investigation

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 Solution Design and Programme and Planning falling short of expectations and not being 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.

4.5 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 Affinity Water, Severn Trent Water and the Canal and River Trust to have provided sufficient evidence of progress in developing the solution design for gate two. The solution falls short in some areas as there are uncertainties with utilisation and further stakeholder engagement needed.

4.6 Solution costs

Our assessment of the unit costs of delivering the Grand Union Canal Transfer is that they are reasonable at this stage and 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 preferred option has been re-costed using bills of quantities for concept designs. 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.

4.7 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. The solution falls short in some areas as there are uncertainties with the Natural Capital Approach (NCA) assessment. There are also recommendations included relating to solution cost and water resources benefit assessment.

4.8 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 by Affinity Water, Severn Trent Water and the Canal and River Trust regarding the programme and planning for the Grand Union Canal to be of sufficient detail and quality for gate two. The submission however falls short in relation to risks and issues and the procurement and planning route strategy. Actions are included in relation to these.

4.9 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 Affinity Water, Severn Trent Water and the Canal and River Trust to have provided sufficient evidence of progress in the environmental assessment, potential mitigations and future work programmes for gate two. Actions and recommendations have been provided to improve this area of the submission.

We consider Affinity Water, Severn Trent Water and the Canal and River Trust to have fallen short in providing sufficient evidence of embodied and operational carbon commitments for gate two. We provide an action and a recommendation relating to the carbon assessment approach.

4.10 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.

We consider the companies to have met the requirements of gate two, and have provided sufficient evidence of progress in the water quality and risk assessment, and future work around Drinking Water Safety Plans at this stage. Continued monitoring will help further develop the WQRA, mitigation of risks and hazards, and inform treatment requirements at the receiving water treatment works.

4.11 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 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

One priority action have been identified for the Grand Union Canal Transfer.

Seventeen actions and recommendations have been identified for the Grand Union Canal Transfer, which should be fully addressed at the gate three submission or at an alternative or earlier date where this has been set in Appendix A. 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 the Grand Union Canal Transfer can be found in Appendix A.

5.2 Actions and recommendations from gate one assessment

We have assessed whether the Grand Union Canal Transfer has met actions that were set out as a result of our gate one assessment.

No priority actions were identified for the Grand Union Canal Transfer.

Six actions and recommendations were identified for the Grand Union Canal Transfer, which were expected to be fully addressed at the gate two submission.

We have decided that the actions have partially been addressed in the gate two submission. Further detail of our conclusion against each individual action is shown in Appendix B.

There was one action that was only partially complete, this is now linked to a gate two recommendation to ensure it is fully resolved by gate three.

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 a 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 2027, and solution operational in 2032.

We have considered Severn Trent Water and Affinity Water reasoning for gate three timing and agree that the Grand Union Canal Transfer gate three should be December 2024. We accept this is an earliest target date.

We have reviewed the 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 that 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 dates specified		
Number	Area	Detail
1	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 (except where an earlier date is given below)		
Number	Area	Detail
1	Solution Design	Confirm to RAPID that the solution aligns with Severn Trent Water's and Affinity Water's Water Resource Management Plans (WRMP) and relevant Regional Plans at the next available regular checkpoint meeting after the publication of the WRMPs and Regional Plans
2	Solution Design	The scheme must provide updates on solution design to the Environment Agency through the development of design and operation of storage options which are to be incorporated within the scheme.
3	Evaluation of Costs & Benefits	Update the Natural Capital Assessment so that valuation of ecosystem services are comparable and demonstrate benefit to the environment and society. The rationale for scoping out recreation requires additional explanation and amenity enhancement should be assessed quantitatively.
4	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. Delivery of this mitigation should be completed by December 2023. For the treatment programme, this means the bench trial package should be completed by this date, to allow time for unresolved risks to be managed by the end of gate three.
5	Programme and Planning	Further engage with Ofwat on the proposed commercial arrangements – specifically the approach to delivering the required work to the Canal and River Trust's assets. We expect that for gate three you will also be carrying out market engagement on this approach and would like you to engage with RAPID on feedback from the market prior to gate three. Review technical discreteness assessment following Ofwat's forthcoming consultation on updated guidance and provide an updated assessment.
6	Environment	Protected species (notably including water voles) surveys to be included within further assessment work. Consultation with the Environment Agency and Natural England on scope of surveys is necessary. Potential impacts on habitats and features of Local Wildlife Sites which the scheme has potential to impact should be investigated in gate three.

		Develop the Water Framework Directive assessment with further monitoring and updated River Basin Management Plan data.
7	Environment	<p>Further assessment into sediment mobilisation is necessary. Investigate the correlation between sediment mobility with release of contaminant into the water through operation of the transfer scheme causing sediment disturbance.</p> <p>Refine hydrological modelling of the Grand Union Canal, as per Final Modelling Report recommendations and through engagement with the Environment Agency, to better understand potential impacts.</p> <p>Refine Water Quality modelling, as per recommendations in the Point of Discharge WQ Assessment and through engagement with the Environment Agency, to better understand potential impacts.</p>
8	Environment	Investigate pollution risk and potential impacts from various scenarios causing pollution events in gate three.
9	Environment	Continue to investigate areas of INNS risk. Engage with the Environment Agency on scope for this work. Provide evidence to confirm treatment process will eliminate INNS from discharge into canal.
10	Environment	Recommendations made by the Environment Agency and Natural England through gate two engagement should be used to inform gate three environmental work.
11	Environment	Improve the carbon assessment through clearer presentation on cost estimation and evidence thereof, and costs being mitigated by focussing on carbon. Uncertainty range, and mitigation, is expected to be presented in future assessments.

Recommendations

Number	Area	Detail
1	Solution Design	More detailed utilisation profiles should be provided at gate three. Uncertainty and assumptions with utilisation profiles should be made clear.
2	Solution Design	Acknowledgement of Level of Service is recommended for future submissions. The Level of Service against which the water resource benefit is calculated should be explained
3	Solution Design	We would like to see evidence of proactive engagement with the Forestry Commission on solution design and site location.

4	Evaluation of Costs & Benefits	<p>Include descriptions and tables to show how cost estimates, including total planning period indicative option cost (net present value), for the preferred option have changed between each gate.</p> <p>Provide more detail on how uncertainty has been taken into account when calculating deployable output.</p>
5	Environment	<p>Refine pipeline route in gate three to minimise potential impact on sites such as priority habitats and ancient woodland.</p> <p>Explore dredging as an alternative to bank raising.</p> <p>Provide more detail on how uncertainty has been taken into account when calculating carbon values.</p>
6	Solution design	<p>We recommend that the solution owner continues to engage with Historic England on the work required to consider the historic environment. We recommend that the programme of planned investigations and assessments is reviewed regularly with Historic England.</p>

Appendix B: Gate one actions and recommendations

Actions – addressed in standard gate two submission			
Number	Area	Detail	RAPID assessment outcome
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.	Partially complete – Link to recommendation 1
2	Environment	Provide clarity regarding the framework/s used to determine carbon costs and emissions.	Complete
3	Environment	Investigate Invasive Non-Native Species risks further and the efficiency of proposed treatments / mitigation measures.	Complete
Recommendations			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	Include potential benefits and issues associated with interactions between the proposed Grand Union Canal route and the Oxford canal scheme.	Complete
2	Evaluation of costs & benefits	Calculate all open water losses. Ensure all possible constraints on Deployable Output are considered such as open water quality such as algal growth in warm weather and hand off flow considerations.	Complete
3	Evaluation of costs & 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.	Complete

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