

June 2023

**Strategic regional water  
resource solutions:  
standard gate two final decision  
for Fens Reservoir**

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# 1. Introduction

The purpose of this publication is to set out our final decision about whether the Fens Reservoir solution should continue to receive development funding<sup>1</sup>. The solution owners Anglian Water and Cambridge Water submitted their standard gate two reports on 14 November 2022 for assessment. Further information concerning the background and context of the Anglian Water and Cambridge Water Fens Reservoir can be found in the Fens Reservoir publication document on the Cambridge Water website<sup>2</sup>.

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

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

The solution owners and other interested parties had the opportunity to respond to the draft decision during the representation period, which followed the publication of the decisions on 30 March 2023. We have taken all relevant representations into account in making our final decision.

We would like to thank Anglian Water and Cambridge Water for the level of engagement, collaboration and innovation that they have shown during this stage in the gated process.

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<sup>1</sup> [PR19 final determinations: Strategic regional water resource solutions appendix](#)

<sup>2</sup> [Fens Reservoir](#)

## 2. Solution Summary

### 2.1 Solution summary

The Fens Reservoir solution is a proposed development of a 55 cubic megametres ( $\text{Mm}^3$ ) reservoir with a useable volume of  $50\text{Mm}^3$ . The gate two concept design produced by Anglian Water and Cambridge Water shows the reservoir covering an area of approximately  $5\text{km}^2$  with a maximum embankment height of 20m. A proposed site has been identified for the Fens Reservoir, located north of Chatteris in Cambridgeshire.

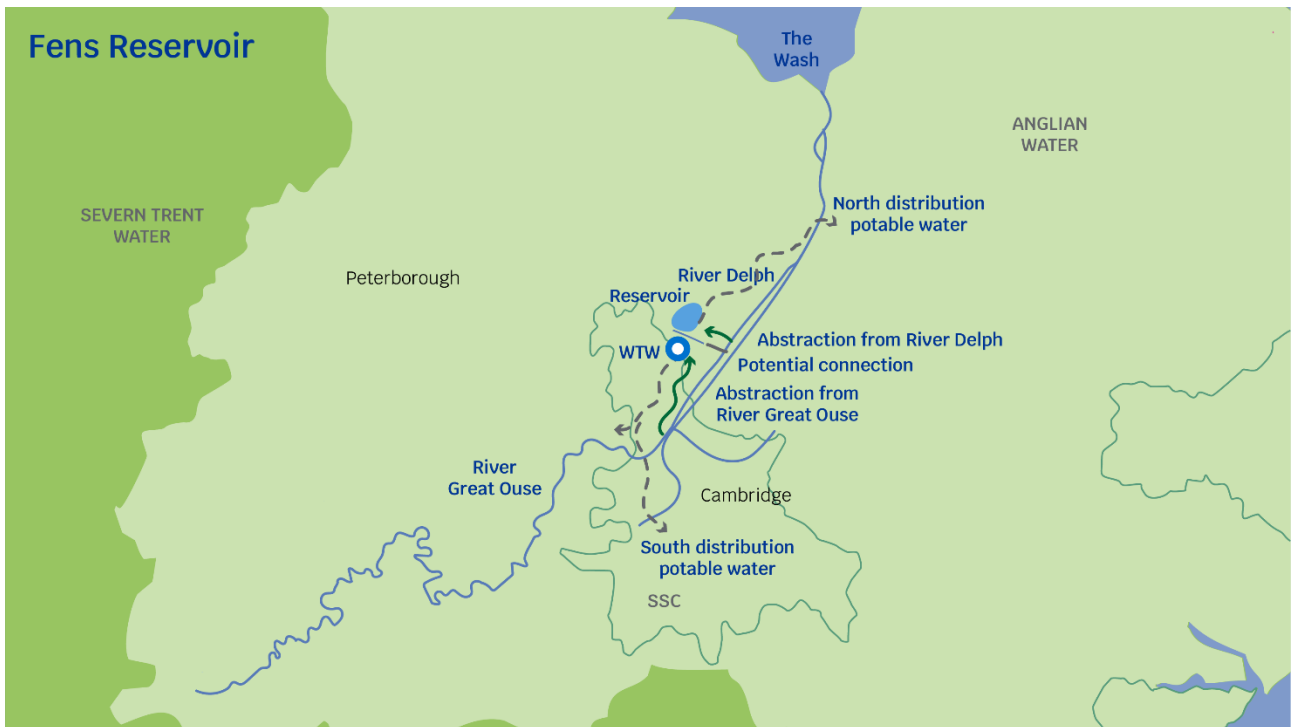
The deployable output for the reservoir is modelled to be 87 megalitres per day  $\text{Ml/d}$ . Water will be abstracted from the River Great Ouse ( $300\text{ Ml/d}$ ) and from the River Delph ( $400\text{ Ml/d}$ ) when flows allow. The reservoir is required to be in supply by 2035–2037.

Regional modelling undertaken for the Water Resources East (WRE) regional plan considered the costs and benefits of two options, a single  $50\text{ Mm}^3$  reservoir and two  $25\text{ Mm}^3$  reservoirs. Anglian Water and Cambridge Water are recommending that the single  $50\text{ Mm}^3$  progresses from gate two on the basis that it is the more cost-efficient option.

The WRE regional plan and Anglian Water's and Cambridge Water's draft water resources management plans (dWRMPs) confirmed the need for a  $50\text{Mm}^3$  reservoir in Cambridgeshire by the mid 2030s to supply Anglian and Cambridge customers. Anglian Water and Cambridge Water have therefore selected the  $50\text{ Mm}^3$  reservoir as the preferred option for the Fens Reservoir to progress under the gated programme.

The Fens Reservoir is independent of other strategic resource options being progressed under the gated programme.

Figure 1. Fens Reservoir Solution Schematic



## 3. Summary of representations

### 3.1 Representations received

We have received the following representations relevant to the Fens Reservoir.

**Table 1. Summary of representations**

Representation from	Summary of representation
<b>Water Resources East (WRE)</b>	<p><b>Evaluation of Costs and Benefits</b></p> <ul style="list-style-type: none"> <li>• WRE note the comments made in the draft decision documents about fully demonstrating that the South Lincolnshire Reservoir (and the Fens Reservoir) represent low regret options within WRE's best value plan.</li> <li>• They state that they will work with the relevant companies to strengthen the evidence base ahead of the October deadline.</li> <li>• They note that unit costs should be assessed against the alternative options available for these water resource zones rather than similar options that may be available elsewhere in the country. However, they also assert that there are few alternatives to the Fens Reservoir due to pressures on the water environment.</li> <li>• They note that decisions on the Fens Reservoir should also recognise the significant stakeholder concern regarding the health of the River Cam and other chalk streams that the Fens Reservoir would help alleviate.</li> <li>• They agree that further work is needed to explore options that would increase the yield of the reservoir.</li> </ul> <p><b>Wider public value and 'system' benefits</b></p> <ul style="list-style-type: none"> <li>• WRE believe that the recommendation set for the South Lincolnshire Reservoir to explore the benefits of open water channels to move water to the reservoir site should also be included for the Fens Reservoir.</li> <li>• They note that they have sponsored work that has explored the potential conjunctive use benefits for irrigators arising from the Fens Reservoir (and the South Lincolnshire Reservoir). However, they also note that their role to catalyse these 'system' benefits is not funded and there will be a limit to how far it is possible and appropriate for the costs of the necessary studies to be met from Strategic Resource Option (SRO) budget allocations.</li> <li>• They note that it would be valuable to have a conversation with representatives from Ofwat, the Environment Agency and Defra on how to unlock the wider opportunities from the Fens Reservoir, and how this may be funded.</li> </ul>

	<ul style="list-style-type: none"> <li>• They would welcome an update from RAPID on potential commercial and legal models for multi-sector reservoir systems since the CEPA study was published last year, noting that without progress in this area, the Fens Reservoir will default to solely meeting the identified public water supply needs.</li> </ul>
<p><b>Anglian Water and Cambridge Water</b></p>	<p><b>Gated allowance</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water understand the decision to restrict additional funding to 65%, however state that given the complexity and magnitude of the project, still require 100% of the additional funding requested in their gate two submission. The remaining 35% of additional funding requested will be forecast within the gate four requirement and included in the price control 2024 application process.</li> <li>• They would like the opportunity to agree the alignment and content of future gates with RAPID.</li> <li>• They state that their SROs remain well below Ofwat’s nominal 6% metric of ‘development budget against total scheme budget’.</li> <li>• They request that the development funding ratio changes from 42:58 to 50:50 Anglian Water: Cambridge Water.</li> </ul> <p><b>Cost Sharing</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water question the change in cost sharing rate as it significantly increases development risk and does not recognise the uncertainties of major project development often caused by external and third-party events.</li> <li>• They recommend that, instead of the introduction of a new proposed ‘pain/gain’ mechanism between companies and customers, existing customer protections are further enhanced instead.</li> </ul> <p><b>Gate timing</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water support the decision to move the gate three date back by six months but note that the additional 6-month period will require funding. They state that they will have to start key gate four activities during the gate three period.</li> </ul> <p><b>Solution progression</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water note the request for a conditional review in January 2024, however request clarification on the format of this review point concerning whether this assessment will be based on the Best Value Plan assessment provided by 30<sup>th</sup> October, including any update of the Average Incremental Cost (AIC) and request advice on whether they should expect a report template to complete with associated guidance, issued by RAPID.</li> <li>• They state that environmental monitoring, assessment and modelling work is planned prior to gate three and an</li> </ul>



	<p>environmental team has been established. Updates for this work will be provided as part of monthly checkpoint meetings.</p> <ul style="list-style-type: none"> <li>• They are confident that the Fens Reservoir is a low regret, must do option.</li> <li>• They state that further information on the regional decision-making process will be provided, along with additional explanation regarding option availability, sizing and costs.</li> <li>• They state it would be useful to understand the criteria regulators will be using to judge that sufficient evidence has been provided and that this meets regulators' satisfaction.</li> </ul> <p><b>Efficient Spend</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water note RAPID's position that expenditure was deemed to be efficient.</li> <li>• They state that the final accounts for gate two have been submitted separately.</li> <li>• They support the change to look at the cumulative gate spend.</li> </ul> <p><b>Wider public value and 'system' benefits</b></p> <ul style="list-style-type: none"> <li>• Anglian Water and Cambridge Water do not consider it appropriate to take forward all of the recommendations from the systems report by funding them from the SRO RAPID budget, rather they are exploring alternative routes to achieve the same outcome and encouraging representatives from those sectors who will benefit to take a lead in championing specific opportunities.</li> </ul>
<p><b>Historic England</b></p>	<p><b>Historic environment</b></p> <ul style="list-style-type: none"> <li>• Historic England state concern with the lack of reference to the historic environment in the RAPID draft decision.</li> <li>• They suggest that the preferred solution option should be assessed against other feasible options from a historic environment perspective, and that a Heritage Impact Assessment is needed for all reservoir options with a more detailed assessment being required for the preferred option.</li> <li>• They note that the evidence base needed for the Heritage Impact Assessment should include an archaeological assessment consisting of a desk-based assessment and a deposit model.</li> <li>• They note that the deposit model should inform the selection of the geophysical techniques and that there are currently many unknowns relating to undesignated archaeology, therefore it is difficult to assess whether future work plans are appropriate.</li> <li>• They recommend that archaeological assessment begins as soon as possible to ensure that appropriate mitigations can be developed.</li> <li>• They recommend that archaeological assessments are appropriately sequenced to ensure that informed decision making can take place.</li> </ul>

	<ul style="list-style-type: none"> <li>• They recommend that a geoarchaeologist is involved in any geotechnical investigations occurring at the site.</li> </ul> <p><b>Site selection</b></p> <ul style="list-style-type: none"> <li>• Historic England note concern over the evidence base provided for site selection.</li> <li>• They recommend that the solution team review the decision-making process used in site selection and note that the final decision on site selection was made before evidence on the historic environment had been provided by stakeholders.</li> </ul> <p><b>Solution design</b></p> <ul style="list-style-type: none"> <li>• Historic England agree with RAPID's decision that the cumulative impact of the reservoir, abstractions and transfers should be considered in a holistic way.</li> <li>• They agree that work is needed to carry out a Landscape and Visual Impact Assessment and recommend that this assesses the impact of the site on heritage and the landscape and identified mitigation measures.</li> </ul> <p><b>Stakeholder engagement</b></p> <ul style="list-style-type: none"> <li>• Historic England agree with RAPID's recommendation that evidence of action taken based on the results of non-statutory consultations should be provided at gate three.</li> </ul> <p><b>Environment</b></p> <ul style="list-style-type: none"> <li>• Historic England agree with RAPID's decision that the environmental impacts of the Fens reservoir need to be further investigated.</li> </ul>
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## 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 progression

We welcome the work proposed by Water Resources East, Anglian Water and Cambridge Water to develop and deliver the required evidence on best value planning to meet the priority action number one set for October 2023. RAPID are happy to provide further advice on the scope and content of the action and conditional review point.

We welcome the update on environmental monitoring, assessment and modelling work and will monitor progress on this through our regular checkpoint meetings with Anglian Water and Cambridge Water.

### 3.2.2 Evaluation of Costs and Benefits

Water resources planning at a regional and company level is following a best value approach. This allows consideration of how new water sources can be used to bring about best value at a regional and national scale, therefore going beyond the local area. The need for solutions and the decisions on whether or not solutions ultimately go ahead will be made through water resources planning processes and subsequent applications for planning and environmental consents.

We support the representation that comparison of costs and benefits should be against alternative solutions for the region. However, a key point from our draft decision is that we need to have confidence that the alternatives have been identified, including scope to increase the deployable output of the reservoir and the scope for potential imports to the region. We have therefore included priority action number one and a conditional review point on 29 January 2024 to consider the technical evidence that has informed the WRE regional plan and the selection of the Fens Reservoir (and the South Lincolnshire Reservoir) as 'low regret' and 'must do' options, including evidence that the timing and sizing of the reservoirs represent best value for the region.

We have adjusted the text in section 4.4.3 of the final decision document to clarify this.

### 3.2.3 Wider public value and 'system' benefits

Anglian Water is continuing to develop its approach to multisector reservoirs - looking at the costs, benefits and funding routes available. There is an action in the Appendix for the solution owners to continue to explore opportunities for open channel transfers within system design. RAPID's role is to support companies carrying out this work where possible.

At gate three, we are expecting solution owners to have identified opportunities to realise wider benefits and benefits to third parties through stakeholder consultation and integrated into the solution design and proposed modes of operation. Progress on any modifications or enhancements to the solution design to realise these benefits should be clearly set out at gate three, together with a justification for the inclusion or exclusion of these modifications and enhancements, and associated costs. Solution owners should work with relevant local planning authorities and stakeholders to inform this work. This activity is integral to the development of the solution and should be delivered using the gated allowance.

Where wider benefits are proposed to be provided to third parties, proposals should be submitted demonstrating how those parties propose to contribute a fair share of the costs according to their own responsibilities and the benefits they realise, and evidence of engagement and commitment by those third parties.

Environmental assessments will continue to investigate potential impacts and explore any appropriate mitigation measures.

Taking account of the representations on these issues, we have revised the wording of action five in Appendix A to provide further clarity and alignment with the RAPID gate three guidance on wider public value.

### **3.2.4 Gated allowance**

Anglian Water and Cambridge Water requested through its representation that the development funding ratio changes from 42:58 to 50:50 Anglian Water : Cambridge Water. We agree to this change in the development allowance for Fens reservoir which will be reconciled through the revenue reconciliation that will take place at the 2024 price review (PR24).

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.

### **3.2.5 Cost sharing**

We have considered the representations made on the appropriateness of the cost-sharing mechanism which appeared in the draft decision and have considered further the interests of customers over the lifecycle of the solution's development and delivery. As a consequence, we have decided to remove the cost sharing arrangements for gate three and are instead capping the gate three allowance at a higher level. This means that the solution may pass on to customers the costs of gate three activities but only up to the higher cap. The solution will be allowed to use its previous underspends to offset expenditure above the cap to provide some flexibility against cost uncertainty.

We have adjusted Table 4 of the final decision to reflect these changes and have added some explanatory text to section 4.2 to reflect these changes.

### 3.2.6 Efficient spend

We acknowledge the representations raised on efficient spend. 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.

### 3.2.7 Gate timing

Anglian Water and Cambridge Water recognise the benefit of gate three being moved back from March 2024 to September 2024. If the solution progresses to gate three, we will therefore retain September 2024 as the timing for gate three.

Anglian Water and Cambridge Water suggest that as a result of the gate three timing, that some gate four activities will need to be started during the gate four period. In principle this is acceptable and should be discussed with us before expenditure is incurred. Such expenditure should be clearly delineated as gate four spend when completing the efficiency of expenditure annex and in gate accounts. We refer Anglian Water and Cambridge Water to the RAPID gate three guidance<sup>3</sup>, section 1.1.7 on 'Early Gate Four Spend'.

### 3.2.8 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 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 have added an additional recommendation that the solution owners continue to engage closely with Historic England on the work required to consider the historic environment.

### 3.2.9 Site selection

Heritage value was a key consideration at the earliest stage of the site selection process. The initial screening appraisal considered sites of heritage value. Scheduled Ancient Monuments and World Heritage Sites were avoided. A programme of archaeological work is set out in the project plan and proposed list of gate three activities within the gate two submission. The

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<sup>3</sup> [Strategic regional water resource solutions guidance for gate three](#), RAPID, August 2022

solution owners will be expected to engage with Historic England through the development of the project.

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

### **3.3.1 Gate two actions**

To provide necessary information for the Conditional Review Point, we expect the solution owners to provide a report on the expenditure incurred up to the Conditional Review Point and a revised forecast of expenditure to gate 3. We have added an additional priority action in Appendix A to reflect this.

Comments made in the representations on the wider benefits of the solution have prompted us to reconsider the wording of action five and revise it to provide greater clarity on what we expect from the solution owners to complete this action and further alignment with the RAPID gate three guidance on wider public value to provide.

## 4. Solution assessment summary

Table 2. Final decision summary

Recommendation item	Fens Reservoir
Solution owners	Anglian Water and Cambridge Water
Should further funding be allowed for the solution to progress to gate three?	Continued development funding will be available to progress the solution up to the Conditional Review Point, referred to in section 4.1 below. The funding for progression of the solution to gate three will depend on the outcome of the conditional review.
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?	Yes, refer to section 5.1
Are all priority actions and actions from previous gates addressed?	No, refer to section 5.2
Suitable timing for gate three has been proposed	We propose a conditional review point of 29 January 2024. If we are satisfied that the solution should continue to be developed, we believe that September 2024 would represent the suitable timing for the gate three submission.

### 4.1 Solution progression to standard gate three

The evidence suggests that the solution is a potentially valuable way of supplying water to customers. However, there are concerns regarding the progression of the strategic solution due to Fens Reservoir having notably high unit costs and the limited evidence provided to us that the Fens Reservoir solution is the best value option for meeting the need. We would like to see clear and robust evidence around the selection of Fens Reservoir as a best value option, including how the solution performs against other feasible solutions. On that basis, we will allow the solution owners to continue to develop the solution up to a conditional review point of 29 January 2024 (“Conditional Review Point”), after which partner regulators will make a final recommendation on progression beyond the Conditional Review Point to Ofwat. 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

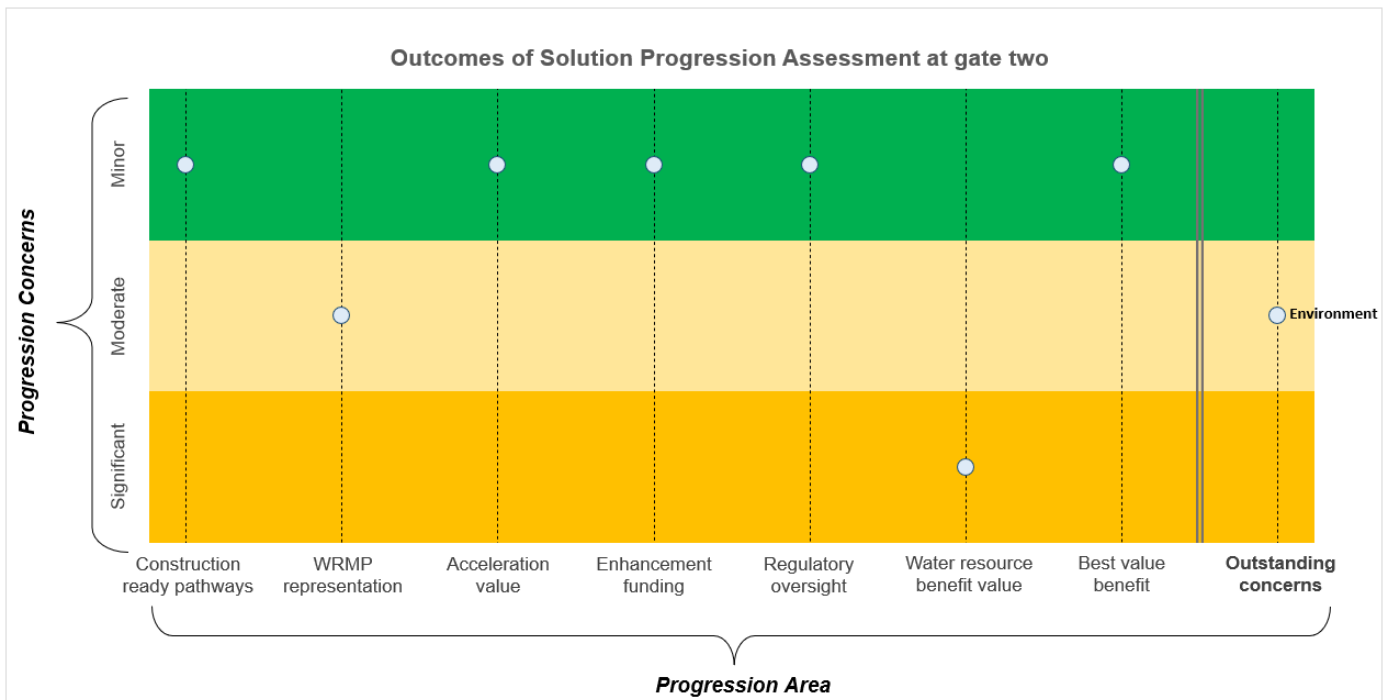


Table 3. Final decision progression criteria

Progression criteria	Fens Reservoir
<b>Solution owners</b>	Anglian Water and Cambridge Water
<b>Is the solution in a preferred or alternative pathway in relevant regional plan or WRMP (where applicable) to be construction ready by 2030?</b>	<p>Yes, the solution is chosen in Anglian Water’s and Cambridge Water’s draft WRMP24s, as a solution on their preferred pathway, which is the relevant plan for the standard track. The solution is also in the Water Resources East (WRE) draft regional plan. The solution will be construction ready by 2029. However, there are concerns regarding the progression of the strategic solution due to Fens Reservoir having notably high unit costs and the limited evidence provided to us that the Fens Reservoir solution is the best value option for meeting the need.</p> <p>We would like to see clear and robust evidence around the selection of Fens reservoir as a best value option, including how the solution performs against other feasible solutions. We have set a conditional review point of 29 January 2024 to consider the technical evidence that has informed the WRE regional plan and the selection of the Fens Reservoir (and the South Lincolnshire Reservoir) as 'low regret' and 'must do' options, including evidence that the timing and sizing of the reservoirs represent best value for the region. This progression concern is addressed in section 4.4.3, priority action 1 of this document.</p>
<b>Do regulators have any significant concerns with the solution’s inclusion or non-inclusion in a WRMP or regional plan or with any aspects that may impact its selection, to a</b>	Yes, the technical evidence that has informed the inclusion of the solution in the WRE draft regional plan has not been made available for review by regulators. The review of that technical evidence is considered necessary for confidence in the draft regional plan process. Sufficient evidence is needed to demonstrate to regulators’ satisfaction that the Fens Reservoir is a 'low regret' and 'must do'



<b>level that they have (or intend to) represent on it when consulted?</b>	option and to give regulators confidence that the Fens reservoir is a better value option than others.
	This progression concern is addressed in section 4.4.3 and priority action 1 of this document.
<b>Is there value in accelerating the solution's development to meet a company's or region's forecast supply deficit?</b>	Yes. A solution is required to address Anglian Water's and Cambridge Water's forecast deficit.
	No further action is required on this progression criteria.
<b>Does the solution need continued enhancement funding for investigations and development to progress?</b>	Yes. Continued funding is required to develop a solution to be delivered in time for the planned construction ready date.
	No further action is required on this progression criteria.
<b>Does the solution need the continued regulatory support and oversight provided by the Ofwat gated process and RAPID?</b>	Yes. The solution will continue to benefit from the regulatory support and oversight provided by being included in the RAPID programme.
	No further action is required on this progression criteria.
<b>Does the solution provide a similar or better cost / water resource benefit ratio compared to other solutions?</b>	This solution is expensive if considered on the basis of cost per projected utilisation as it is a drought resilience asset. However, when considered on a capacity basis, solution costs are not unreasonable and over the medium- to long-term the solution can be adapted to provide capacity beyond the immediate resilience requirement.
	No further action is required on this progression criteria.
<b>Does the solution have the potential to provide similar or better value (environmental, social and economic value – aligned with the Water Resources Planning Guideline) compared to other solutions?</b>	Yes, 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.
<b>Does a regulator or regulators have outstanding concerns that have not been addressed through the strategic planning processes taking into account proposed mitigation?</b>	Yes. 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 the design in detail and on mitigation measures. Flood risk assessments will be complex and the timescales within which all of the necessary environmental work will need to be completed are ambitious.
	This progression concern is addressed in section 4.4.5 and actions 8 to 21 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. Fens Reservoir funding allowances (2017/18 Prices)**

	Gate one	Gate two	Gate three	Gate four	Total
<b>Fens Reservoir gated allowance</b>	N/A	£4.09m	£23.82m	£10.91m	£38.82m
<b>Comment</b>	Some work funded from existing allowances.		Allowance has been revised and capped.	We will review gate four expenditure as part of gate three assessment or PR24.	Updated to reflect revised gate three expenditure cap.
<b>Previous Allowance</b>	N/A	£4.09m	£9.55m	£10.91m	£24.55m
<b>Change from Previous Allowance</b>	£0.00m	£0.00m	£14.27m	£0.00m	£14.27m

We note that Anglian Water and Cambridge Water set out that to continue to develop the solution to the standard required to achieve a successful DCO and to enable water to be brought into supply between 2035 and 2037 is subject to confirmation of adequate funding of the development costs being made available by Ofwat. The solution sponsors have identified a shortfall of around £34.3m to develop the scheme to gate four.

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 environmental impact assessment (EIA), water quality assessments, ground investigations and other environmental field studies and assessments.

Fens Reservoir will be allowed to spend up to £23.82 million to undertake gate three activities, representing an increase of £5.00 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 price review 2019 (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.

Our assessment of the efficient costs as spent on standard gate two activities results in an allowance for this solution of £3.87m (of £3.87m claimed). The Fens Reservoir has therefore underspent its gate two allowance by £0.22m and may take this underspend forward to gate three, subject to any decisions taken at the Conditional Review Point, increasing the allowance available to them at gate three to £24.04m.

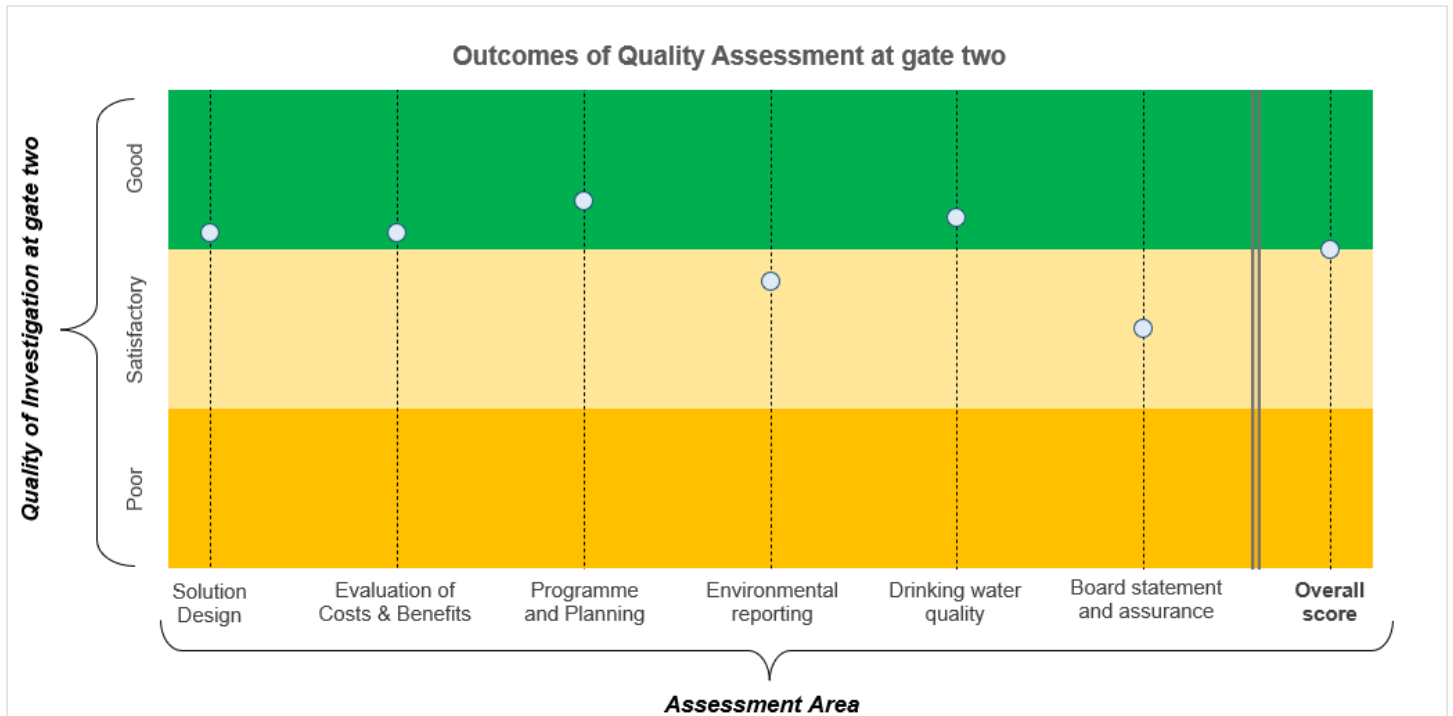
From gate two, we will move to look at the cumulative gate spend against the cumulative total allowance, across all gates consistent with the activities being undertaken. For example, any gate four allowance that is brought forward towards gate three should be for the purpose of early gate four activities. If Fens Reservoir progresses to gate three, this will apply here.

### 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 environmental reporting and board statement and assurance falling short of expectations and not as developed as would be expected at gate two.

We explain our assessment of each individual area, including any shortfalls in expectations, in the sections below. We have not applied any delivery incentive penalties as a result of this assessment of quality, as further detailed in section 6.

#### 4.4.1 Solution Design

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

We consider Anglian Water and Cambridge Water 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 the design relating to the abstraction and transfers linked to the proposed reservoir. The findings from non-statutory consultations also need to be considered in future work on the reservoir design. The actions and recommendations identified in the solution design assessment are expected to ensure that these issues are addressed in the gate three submission.

#### **4.4.2 Solution Costs**

Our assessment of the unit costs of delivering the Fens Reservoir is that they are relatively expensive at this stage with respect to other comparable solutions. 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, there has been a significant increase in the price of steel, and new unit cost data is available from large diameter installations. The assessment also considers the use of the solution as a drought resilience asset, and therefore cost per capacity is often a more appropriate metric than cost per projected utilisation. We will continue to scrutinise cost estimate changes from gate two to gate three.

#### **4.4.3 Evaluation of Costs and Benefits**

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

We consider that Anglian Water and Cambridge Water have provided sufficient evidence of evaluating the costs and benefits of the solution to an appropriate standard for gate two. However, to proceed through the full period up to gate three, we need to have confidence that the alternatives have been identified, including scope to increase the deployable output of the reservoir and the scope for potential imports to the region. This issue is addressed by priority action number one and the Conditional Review Point, as explained in section 3.2.2.

The WRE region is facing a high-risk planning challenge with significant water needs and high complexity factors driven primarily by population growth, climate change and environmental pressures. We have concerns that WRE's range of options is not sufficiently broad given its long-term water needs and the scale of proposed investment.

Fens Reservoir has notably high unit costs. This is a large project which will require significant investment. We would like to see clear and robust evidence around the selection of Fens Reservoir as a best value option, including the best value least regrets size and yield. This should include consideration of other options to increase the yield of the Fens Reservoir.

The solution owners should provide reassurance that Fens Reservoir is a best value solution.

Priority action number one has been set for Anglian Water and Cambridge Water to provide regulators with evidence to support the selection of the Fens Reservoir as a 'low regret' and 'must do' option in the Water Resources East (WRE) draft regional plan. This is due for completion by 30 October 2023. Uncertainties with the Natural Capital Assessment and the best value assessment should be addressed in the gate three submission to provide evidence that the solution represents the best value option for customers, society and the environment. Exploration of opportunities for open channel transfers and supplementary and alternative sources of supply should be undertaken ahead of gate three.

#### **4.4.4 Programme and Planning**

Our assessment of the Programme and Planning considered whether Anglian Water and Cambridge 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 Anglian Water and Cambridge Water regarding the programme and planning, risks and issues and the procurement and planning route strategy for the Fens Reservoir to be of sufficient detail and quality for gate two.

The solution falls short in some areas as there are risks which do not have the appropriate level of mitigation developed to address them. A priority action has been set for Anglian Water and Cambridge Water to engage with the Environment Agency on abstraction licensing and for a consenting strategy to be shared with Environment Agency and Natural England for review. This is due for completion by October 2023.

#### **4.4.5 Environment**

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

We consider Anglian Water and Cambridge Water to have provided satisfactory evidence of progress in the environmental assessment, potential mitigations, future work programmes and embodied and operation carbon commitments for gate two.

The solution falls short in some areas of the environment assessment as there are environmental risks identified in the submission which do not have the appropriate level of mitigation developed to address them. A number of actions and recommendations have been identified to establish a programme of work to address environmental issues in the gate three submission.

#### **4.4.6 Drinking water quality**

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

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

We expect to see comprehensive water quality monitoring, including for emerging contaminants of concern, from gate two with plans to include computational fluid dynamics (CFD) or similar to ascertain water quality risks associated with thermal stratification and algal blooms.

#### **4.4.7 Board Statement and assurance**

The evidence provided relating to assurance is satisfactory for this stage of the gated process.

The boards of Anglian Water and Cambridge Water have provided an assurance statement. However, it did not clearly explain the evidence, information and external/internal assurance that they have relied on in giving the statement.

## 5. Actions and recommendations

Where the submission has not been assessed as ‘meeting expectations’ in the quality assessment, or progression concerns have been raised, we have provided feedback on where we will seek remediation of the issues. We have also identified specific steps that solution owners should take in preparing for standard gate three.

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

Priority actions are those that should have been completed at gate two and must now be addressed on a short timescale in order to make sure the solutions stay on track. They require urgent remediation in full.

Actions are those that should be addressed in full in the standard gate three submission. The response to these actions will influence the assessment of the gate three submission.

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

We have also assessed progress on actions and recommendations from gate one.

### 5.1 Actions and recommendations from gate two assessment

Four priority actions have been identified for the Fens Reservoir, which should be delivered no later than the dates specified against each priority action.

There are 36 actions and recommendations identified for the Fens Reservoir, which should be fully addressed at the gate three submission. Progress against actions will be tracked as part of regular checkpoints the solution holds with us whilst undertaking gate three activities.

The full list of priority actions, actions and recommendation for the Fens Reservoir can be found in Appendix A.

### 5.2 Actions and recommendations from gate one assessment

We have assessed whether the Fens Reservoir has met actions that were set out as a result of our gate one assessment.

No priority actions were identified for the Fens Reservoir.



Twelve actions and recommendations were identified for the Fens Reservoir, which were expected to be fully addressed at the gate two submission.

One action has been identified as partially complete and we have set an action to complete this by the gate three submission.

Further detail of our conclusion against each individual action is shown in Appendix B.

## 6. Delivery Incentive Penalty

We do not intend to apply a delivery incentive penalties to this solution for the quality of the standard gate two submission based on our assessment.

## 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 the Conditional Review Point referred to in section 4.1 after which partner regulators will make a final recommendation on progression beyond the Conditional Review Point to Ofwat. A decision will then be issued regarding funding beyond the Conditional Review Point to gate three as part of the standard gate track.

If the solution progresses to gate three, for its gate three submission, we expect Anglian Water and Cambridge Water to complete the activities listed in [PR19 final determinations: strategic regional water resources solutions appendix](#), as expanded on in section 7 of the Fens 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

Anglian Water and Cambridge Water have proposed a date for gate three of March 2024. This is proposed alongside a forward programme of gate four in November 2025, proposed planning application submitted in 2025, solution construction ready in 2029, and solution operational in between 2035 and 2037.

We have decided that the Fens Reservoir gate three should be September 2024. This is to align gate three with solutions on a similar programme, and for RAPID to efficiently assess progress of activities, ahead of the solutions proposed planning application.

We agree with the forward programme for gate four.

The forward programme proposed by the solution is in line with the principles of RAPID's standard programme. Funding arrangements are set out in section 4.2 of this document.

## Appendix A: Gate two actions and recommendations

Priority Actions – to be addressed by the date specified against each priority action		
Number	Area	Detail
1	Evaluation of Costs and Benefits	Engage with the WRE regional group to provide regulators with the technical evidence that has informed the draft WRE regional plan and the selection of the Fens Reservoir (and the South Lincolnshire Reservoir) as 'low regret' and 'must do' options. Include evidence that the timing and sizing of the reservoirs represent best value for the region. The scope and content of the information required should be worked up with RAPID and its partner regulators, and information provided to the regulators' satisfaction presented by 30 October 2023.
2	Programme and Planning	Engagement with the Environment Agency on abstraction licensing as soon as possible is necessary. By 01 October 2023 share a consenting strategy (including but not limited to abstraction licencing) with RAPID and its partner regulators for review.
3	Drinking Water Quality	Emerging contaminants must be included in the water quality monitoring programme from gate two onwards. Provide a monitoring programme to RAPID and its partner regulators by 30 June 2023.
4	Evidence of efficient spend	At the Conditional Review Point, provide a report on the expenditure incurred up to the Conditional Review Point and a revised forecast of expenditure to gate 3.
Actions – to be addressed in standard gate three submission		
Number	Area	Detail
1	Solution Design	<p>A considerable programme of work remains around the details of the source(s); location of abstraction points; timing, volumes and constraints of abstraction and transfers, and any potential impacts. This work will need to be prioritised after gate two.</p> <p>Confirm the status of the Anglian to Affinity transfer sub-option to transfer from Fens Reservoir and why an alternative transfer within WRE is not considered. The solution team should clearly state in gate three the potential interaction between the Fens Reservoir and the Ely Ouse to Essex Transfer Scheme. Consideration of alternative abstraction locations for Fens Reservoir, such as the potential for abstraction in the vicinity of Denver, should be included. The gate three submission should clearly state which other water companies will be involved in the conjunctive use of this solution, including Essex and Suffolk Water.</p>
2	Solution Design	Confirm to RAPID that the solution aligns with Anglian Water's and Cambridge 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.
3	Evaluation of Costs and 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 qualification. Assess water

		purification qualitatively and report the quantitative results for climate regulation, ie the tCO2e sequestered. In addition, calculate net present values and clearly state if all prices were adjusted to the same price year.
4	Evaluation of Costs and Benefits	Update the Biodiversity Net Gain assessment to include figures for three unit types, with a conservative approach applied to calculating benefits.
5	Evaluation of Costs and Benefits	Carry out a detailed study of potential open channel transfers to the reservoir site and present the findings of that study at gate three. Additionally, progress work on feasibility and design of potential modifications or enhancements (including mitigation measures for invasive non-native species) to the solution design to realise wider benefits to third parties, including those from open channel transfers, and present the findings of this work at gate three, together with a justification for the inclusion or exclusion of these modifications and enhancements, and associated costs. You should liaise and consult with relevant local planning authorities and stakeholders to inform this work.
6	Programme and Planning	Provide information and assurance about how uncertainty with developing environmental advice will be managed by the project. This should also include uncertainty with updates to abstraction licensing strategies.
7	Programme and Planning	Reference to a formal Flood Risk Assessment should also be included in list of gate three activities and a panel engineer appointed into project team to support development of the Flood Risk Assessment. Consultation with the Environment Agency on risks and their categorisation relating to the Flood Risk Assessment is necessary.
8	Environment	It is not clear how the proposed mitigation for the transfers is achievable and hence that the conclusion of no adverse effect on integrity of Habitats Regulations sites can be reached. Avoiding both over-wintering and breeding bird seasons leaves minimal construction time each year for the transfers, risking delays to the solution that don't appear to be factored into the construction programme. Further explanation of mitigation is needed. This needs to be reflected through the Habitats Regulations Assessment (HRA) and other environmental assessments.
9	Environment	The approach to assessing the impact of changes in ecology from abstractions and transfers associated with the proposed reservoir needs to focus on water level changes and the associated pressures of reduced water volume, not just flow changes. Incorporate consideration of climate change and temperature in hydroecology investigations.
10	Environment	The proposed emergency drawdown route with storage in Ouse Washes reservoir requires further work in the HRA. An alternative method of assessing changes in water quality which considers the complex water management procedures employed on the Ouse Washes is necessary. Each individual unit and/or interest feature of the Ouse Washes must be assessed in an appropriate manner.
11	Environment	Work is needed to better understand not just average water quality and salinity effects on The Wash, but any significant deviations within the tidal cycle.

12	Environment	The potential impacts of the reservoir footprint, the abstractions and transfers should come together and be considered in combination.
13	Environment	It has been assumed that flood defence standards of protection will be maintained. There are significant challenges in funding the ongoing maintenance and upgrading of flood defence infrastructure. More work is needed with the Flood Risk Assessment to properly explore the dynamic flood defence system this solution will be reliant upon and how it will support its maintenance.
14	Environment	The impact of the reservoir on the complex system of existing water management assets in the area needs appropriate consideration.
15	Environment	Emergency drawdown options need to be developed in consultation with the Environment Agency and Natural England. The Ouse Washes is likely to have restrictions in summer due to impact on designated features and in winter due to limited system capacity.
16	Environment	Reliance on the application of Regulation 19 for Water Framework Directive compliance should be noted as a risk.
17	Environment	Invasive Non-Native Species (INNS) treatment must be factored into the development of the reservoir and in particular any open channel transfers proposed as part of the wider systems project.
18	Environment	The sediment and flushing flows should be appropriately investigated. Changes in flows and siltation at the Ouses Washes, Denver and The Wash need to be investigated at gate three.
19	Environment	Work is needed to understand impact of reduced flows in River Delph on Spined Loach, with mitigation (including increased flow) developed if required.
20	Environment	A robust 'in combination' assessment investigating the potential impact of the Fens Reservoir and the South Lincolnshire Reservoir (SLR) on The Wash designated site is necessary.
21	Environment	Baseline monitoring should be prioritised to better understand potential impacts and development of mitigation measures.
22	Board Statement and Assurance	Provide an assurance statement that clearly sets out the evidence, information and external and/or internal assurance that the Board has considered in providing assurance. This should be explained separately for each of the four points (progression, construction programme, expenditure and detail/quality) of the statement as set out in the guidance.
<b>Recommendations</b>		
<b>Number</b>	<b>Area</b>	<b>Detail</b>
1	Solution Design	Engage with the Consumer Council for Water (CCW) during the development of the Fens reservoir.

2	Solution Design	Provide clear evidence in the gate three submission of the results from your non-statutory consultations and show the actions you have taken as a result of the consultation findings.
3	Evaluation of Costs and Benefits	Reference Ofwat's Public Value principles in the gated submissions and provide narrative on how the principles have been followed during solution development.
4	Evaluation of Costs and Benefits	Explore supplementary and alternative sources of supply through engagement with the Environment Agency and relevant Internal Drainage Boards.
5	Evaluation of Costs and Benefits	Reinstate alleviation of chalk abstraction as one of the key drivers for the need for the Fens Reservoir.
6	Programme and Planning	In future gated submissions, explain where the project risks presented in the submission vary from the quarterly risk reporting to RAPID.
7	Programme and Planning	Gate three activities – We recommend including a reference in this list to the Systems work and further exploration (and funding) of the system report recommendations. The companies should still have a key role in this.
8	Environment	Consideration of functionally linked land and appropriate monitoring to understand the use of functionally linked land will be required. This should include fieldwork and surveys which gather data on bird species land and use of functionally linked land. The effects of increased traffic outside the designated site boundary on notified features will also need to be considered, particularly functionally linked land for bird species.
9	Environment	Further mitigation beyond emergency planning updates will be required with respect to infrastructure resilience to the risk of flooding and coastal erosion, as impact on third parties is predicted. It needs to be clear that mitigation measures will be required and added to the cost of this option.
10	Environment	Baseline data collection and analysis should be prioritised.
11	Environment	Protected species surveys should be included as a necessary component of the environmental assessment. Many ditches within the Fens are of significant biodiversity value. It is recommended that ditches are included within 'standing open water and canals' within the Priority Habitats assessments.
12	Environment	Measures will be required to mitigate landscape and visual impacts to sensitive receptors, such that the site is assimilated successfully into the wider landscape both visually and in terms of landscape functionality. Detailed site specific identification of landscape and mitigation measures will need to be informed by a detailed Landscape and Visual Impact Assessment carried out in accordance with the latest Landscape Institute GLVIA guidelines, (3rd edition) and should be accompanied by visual representations, locations, number and type agreed with the Local Planning Authority and produced in accordance with the Landscape Institute technical guidance note LI_TGN-06-19_Visual_Representation.
13	Drinking Water Quality	Complete Computational fluid dynamics (CFD) or similar to ascertain water quality risks associated with thermal stratification in reservoir.



14	Environment	We recommend that the solution owners continue 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.
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## Appendix B: Gate one actions and recommendations

Actions – addressed in standard gate two submission			
Number	Area	Detail	RAPID assessment outcome
1	Solution Design	A number of candidate locations must be identified, and the implications must be evaluated. The implications that are evaluated should include financial costs (Capex and Opex), carbon cost, flood risk benefit, environmental, and social benefits. A clear table comparing these for the sub-options will be helpful.	Complete
2	Solution Design	Ensure utilisation is determined, including uncertainty and sensitivity. Provide detailed explanation of the methodology for defining utilisation from the regional modelling.	Complete
3	Solution Design	Provide a clear discussion of Fens reservoir's interaction with other sources and state which other water companies will be involved in the conjunctive use of this solution. Provide more detail about the proposed transfer to Cambridge Water.	Partially complete – refer to action 1, Appendix A.  The gate two submission has insufficiently discussed the how the Fens Reservoir will interact with other sources and state which other water companies will be involved in the conjunctive use of this solution.
4	Environment	Assess carbon impacts and the solutions alignment to net zero for operational emissions by 2030. Explain how the solution is aligned with the ambition of the All Company Working Group on carbon.	Complete
5	Solution Design	Investigate the integration of flood risk management opportunities and how these will interact with water resource management requirements under appropriate climate change scenarios.	Complete
6	Evaluation of Costs and Benefits	Develop biodiversity net gain and natural capital assessments as a priority together with amenity and landscape impact reports.	Complete
7	Environment	The HRA should consider the functionally linked habitats and screening of the Breckland SAC.	Complete

8	Evaluation of Costs and Benefits	Engage third parties who will benefit from the solution to contribute a fair share of the development costs, particularly where this significantly increases solution costs.	Complete
<b>Recommendations</b>			
<b>Number</b>	<b>Area</b>	<b>Detail</b>	<b>RAPID assessment outcome</b>
1	Evaluation of Costs and Benefits	Ensure wider resilience benefits are fully investigated and quantified as part of the submission for all options.	Complete
2	Evaluation of Costs and Benefits	Include which option is considered best value (rather than just least cost) for customers and the environment and the criteria and method used for best value.	Complete
3	Environment	Prioritise the identification of environmental risks, impacts and propose mitigation requirements where necessary.	Complete
4	Environment	Prioritise the development of environmental modelling, monitoring plans, and approach to in-combination assessment.	Complete

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