Appendix 1: WRMP evidence report

Major issues identified for Cambridge Water's Water Resources Management Plan (WRMP)

Major issues are those that we consider highly significant to the draft plan that may result in an unnecessary risk to public water supplies and/or major risk to the environment. They also include issues with compliance with relevant legislation, such as Directions. These are reported as recommendations in our representation submission.

Area of issue	Issue and evidence	Implications	Information or changes required
Recommendation 1: Demonstrate the company can meet its responsibility to provide secure water supplies to customers, support growth and protect the environment by making significant improvement to its plan.			
R1.1: Planning for a secure, sustainable supply of water.	The Environment Agency (EA) does not have confidence that the draft plan can achieve its responsibilities to secure supplies to meet demand and protect the environment. Baseline dry year water demand exceeds available sustainable supplies in the short term and the company forecasts significant household and non-household growth. The EA has very significant concerns about the high level of risk in the company's preferred plan. The plan relies on demand management, drought measures, and supply options that the company has not demonstrated it can	If the company does not take action to improve the plan there is a significant risk of damage to the environment and to security of supply. If the company's preferred programme of demand management and supply options cannot be delivered, and there are no alternatives available, there is a risk of supply deficits affecting both security of supplies to existing and new customers, and a risk of abstraction increasing at sources of supply that could cause deterioration in the status of water bodies.	The company must demonstrate that its plan safeguards the environment and has sufficient supplies to meet demand and support growth in its supply area across the planning period. It is the company's responsibility to produce a plan that provides a secure supply of water expected by customers and to protect the environment. The plan must deliver statutory environmental obligations, including preventing

	deliver effectively and that carry a high risk of failure. The plan has no credible alternative solutions if the preferred options cannot be delivered and does not demonstrate it can adequately manage the risk of abstraction causing deterioration in the status of water bodies. The company needs to make significant improvements to the plan to demonstrate it can meet demand and support planned growth whilst maintaining abstraction to levels that will not risk causing deterioration in the status of water bodies.		deterioration in the status of water bodies, reflect local growth ambitions and plan to meet the additional needs of new businesses and households. The EA expect substantial improvements to the draft plan and the recommendations in this report to be implemented. This includes providing confidence that the preferred plan can be delivered and accelerating all measures required to manage the risk of causing deterioration in the status of water bodies. The company should develop alternative options to manage the risk to security of supply and the environment if its preferred plan cannot be delivered and ensure these are progressed so that are available as soon as they are needed.
Recommendation 2: Demonstrate that the risk of environmental deterioration in status of water bodies can be managed, including maintaining abstraction to historic limits at sensitive sites.			

R2.1: Your role in achieving sustainable abstraction.	The EA is highly concerned that the plan does not demonstrate it will meet statutory obligations under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 to prevent the risk of deterioration in the status of waterbodies. The company has consistently reported demand above that forecast in its current and previous WRMPs and there is evidence of a sustained increase in abstraction at most of its groundwater sources. The plan also forecasts that demand will continue to rise in the short term (to 2030) and this risks further increases in abstraction. This poses a significant risk to the environment and has resulted in the EA having to object to new major developments in the company's supply area unless they can demonstrate increased water demand will not risk deterioration in the status of water bodies. There is evidence that water bodies in the company's supply area including	There is a significant risk of causing deterioration in the status of water bodies if the company increases abstraction from sensitive groundwater sources. This risks the plan breaching its statutory environmental obligations under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. If the company is unable to demonstrate that it can manage the risk of causing deterioration in the status of water bodies, the Environment Agency may need to use its regulatory powers to make changes to the company's abstraction licences to ensure the environment is protected. This may result in supply-demand deficits and the company being unable to meet demand and support growth.	The company should demonstrate it has a credible plan to manage the risk causing deterioration in the status of water bodies in each water body affected by its abstractions. The company should include a new annex to the plan setting out in detail the actions it will take at each source of supply to prevent environmental impacts. This should include how the company's demand and supply measures will help to manage abstraction to within sustainable limits and set out how alternative options will be used if the preferred plan cannot be delivered or does not deliver the assumed supply and demand benefits. The plan should set out further measures needed to avoid, reduce or mitigate the risk causing deterioration in the status of water bodies, including catchment-based solutions. It

	chalk streams are being affected by the abstraction of groundwater which the company is using to supply existing homes and businesses. Investigations confirm that ecology is sensitive to flow and abstraction. Several water bodies are failing to support good ecological status/potential due to abstraction, for example the river Granta, and that there is a significant risk of deterioration in ecology occurring if abstraction increases. The company should set out in its plan how it will manage the risk of causing deterioration in the status of waterbodies at each source where abstraction has been linked to affecting the ecology of water bodies and wetland sites. The company should set out all measures required to keep abstraction to within sustainable limits and to avoid, reduce and mitigate the risk of environmental impacts.		should also set out how the company will monitor and report the success of its preferred demand and supply measures and act to change its actions if they are not successful.
Recommendation 3: Accelerate and develop preferred supply options to provide confidence they can be delivered and will be available to mitigate the risks to security of supply and the environment.			
R3.1: The plan does not demonstrate why	The company has identified the need to develop new supply schemes at pace or	Without timely and sufficient supply options the company cannot manage	The company should:

supply options cannot be developed more quickly.	it risks failing to meet demand, support growth, and deliver its statutory environmental obligations. The company has submitted some supply schemes to be considered for acceleration in the remainder of AMP7. An announcement on the outcome of this acceleration process is expected in March. The EA is however concerned that the company is not accelerating more of its preferred options and has not justified why work cannot start now on detailed feasibility and planning, so they are 'shovel ready' once funding is secured for their delivery. The EA expects all feasible supply measures to be delivered as quickly as possible where there is a risk to security of supply, or where the company has identified a risk of causing deterioration in the status of water bodies.	known risks, ensure security of supply, and reduce the risk of causing deterioration in the status of water bodies. If any of the company's schemes are accelerated, the current representation of these schemes in the plan will not be fully accurate and will need to be updated.	• accelerate its supply options, so that the risks of causing deterioration in the status of water bodies are avoided, or reduced, and any potential impacts mitigated • bring forward its existing options where these form part of a best value plan or are needed as alternatives to manage risks to security of supply and the environment in its preferred programme • ensure its plan takes account of any decisions on its scheme acceleration proposals where applicable • actively work with Anglian Water and WRE to progress the Fens Strategic Resource Option (SRO) and confirm the feasibility and affordability of the option and provide regulators with confidence that this provides a low regret investment for customers. Until these actions are completed, the EA is unable to

			assess if the plan and preferred solutions present a best value outcome for customers and stakeholders and can demonstrate the risk of environmental deterioration occurring can be managed effectively.
R3.2: Improve the level of detail presented for preferred supply options and set out a full programme of work required to demonstrate they can be delivered as soon as possible.	The level of detail presented in the plan for the preferred supply options is limited. The company's preferred supply options are not well developed, and individual options may not be feasible or yield the assumed supply benefits.	The lack of progress on developing preferred options means customers and stakeholders cannot be confident that these are feasible or will deliver the assumed benefits. Any delay in delivering the preferred supply options poses a risk to security supplies and the environment.	The company should improve the level of detail presented for its preferred supply options by: • setting out a detailed programme of work to urgently progress development of its preferred supply options • conducting detailed deliverability appraisals of its options to better understand technologies, planning timescales and constructability.
R3.3: Provide utilisation details of the proposed Anglian Water transfer and	The proposed transfer of water from Anglian Water is a vital resource option needed to provide security of supply in the short to medium term and help the	The lack of detail provided in the plan means customers and stakeholders lack confidence in the option's feasibility,	The company should: • provide detailed information on planning and construction

confirm that Cambridge Water can utilise all available water as soon as the scheme is completed.	company manage the risk of causing deterioration in the status of water bodies. Despite this importance, the plan does not provide detailed information on the feasibility and utilisation of the option. The EA has significant concerns that the company may not be able to utilise all available water as soon as the scheme is completed. It is likely that investment in a new treatment works is required to ensure the company can make full use of the transfer. The treatment works is an enabling option and will reduce the risk of water quality changes and the potential impact on customers from mixing surface and groundwater. However, the plan does not confirm if this is needed and how the company will progress work to confirm if it is required and deliver the option in a timely way. As this key piece of infrastructure may take several years to build, the company should accelerate any work required so there is greater confidence it can be delivered as quickly as possible and enable full use of the proposed import.	deliverability, utilisation, and the timescales in which will be delivered. The company may not be able to utilise all available water if there are delays to investment in a new treatment works. Any delay in delivery, or not being able to fully utilise the option poses a major risk to security supplies and the environment.	timescales of this option and provide confidence it will be delivered as planned • provide utilisation details of the proposed transfer and confirm that it can use all available water as soon as the scheme is completed.

Recommendation 4: Develop a fully costed and deliverable alternative plan or pathway for if important supply and demand options are not delivered.			
R4.1: Lack of alternative options.	The company has not set out a 'Plan B' to show what actions it will take to protect the environment and public water supply should supply options (Anglian Water transfer and Fens reservoir SRO) be delayed or not delivered and/or if the preferred demand management options fail to deliver the required water savings. Given the level of risk in the company's preferred programme, it is vital that the company works with neighbouring water companies and WRE to develop alternative supply options. The company should be progressing feasibility work now on potential alternative supply-side options so that they are ready to be implemented if the demand-side options fail to deliver expected savings or preferred supply options cannot be progressed. WRE's draft regional plan and Anglian Water's draft WRMP have identified that desalination is the most likely alternative option if the Fens reservoir cannot be	Without sufficient supply options the company cannot manage known risks, ensure security of supply, and reduce the risk of causing deterioration in the status of water bodies. If the company's preferred supply schemes cannot be delivered, or if savings from demand management measures are less forecast, the company is very likely to have a supply-demand deficit. This risks the company increasing abstraction at groundwater sources to meet demand that could cause deterioration in the status of water bodies and/or that it is unable to meet demand and support growth.	The plan should: • set out available alternative options to provide secure supplies, including alternatives to the Anglian Water transfer and Fens reservoir options • provide a detailed programme of how it will progress these alternative options so that they are 'shovel ready' as soon as possible • work with Anglian Water and WRE to confirm which option(s) are most likely to be progressed as alternatives and how these can help deliver a best value outcome for customers. This should include consideration of the size of the Lincolnshire Reservoir option and if a larger reservoir can support increased transfers to Cambridge Water and if

	delivered, but both plans lack detailed specific proposals of when, where, and how big the option(s) will be. Cambridge Water, Anglian Water and WRE should set out detailed proposals for feasible alternative options(s) to the Fens reservoir and to be ready to deliver these when and if they are needed. Cambridge Water's draft plan has not clearly set out if Affinity Water and WRSE can support a transfer to the company as an alternative to the Fens reservoir and proposed Anglian Water transfer. The company has identified bulk transfers from neighbouring water companies in its unconstrained options list, but these were rejected. The process of and reasons for rejecting inter-regional/company transfers is difficult to follow and understand. Affinity Water is pursuing its own options, including the Grand Union Canal (GUC) transfer SRO that could be available by 2035. This could generate a surplus for export, or enable resources currently exported from Anglian Water to Affinity Water to be re-deployed to support Cambridge Water.		desalination should be a preferred option • work with WRE and WRSE to explore if WRSE / Affinity Water can support a transfer (both as a short-term and long-term solution) to the company through the delivery of alternative SRO and other options.

Recommendation 5: Demonstrate that the proposed use of drought measures will be effective in helping manage the risk of environmental deterioration in status of water bodies and will help maintain security of supplies.			
R5.1: Lack confidence that proposed drought measures will effectively meet demand and manage the risk of environmental deterioration occurring.	The draft plan includes the benefit of demand savings from its level of service drought measures and includes these as options to help maintain a positive supply-demand balance. The assumed demand savings are an essential part of the company's plan to avoid deficits ahead of the proposed Anglian Water transfer and Fens reservoir SRO. However, the EA lack confidence that the company can effectively apply its drought measures to manage demand and the risk of causing deterioration in the status of water bodies. The company's current levels of service are high compared to neighbouring companies, and the company has benefited from having access to spare capacity (headroom) in its abstraction licences to meet increased demand, including in dry weather. However, increased abstraction and use of this headroom risks causing deterioration in the status of water bodies and the company can no longer rely on licence	Managing demand in periods of dry weather is an essential part of helping to limit increases in abstraction and managing the risk of causing deterioration in the status of water bodies. Until the company can show that is can apply its drought measures to help manage abstraction to within sustainable limits, the EA cannot be confident it can meet current demand and forecast growth without risking causing deterioration in the status of water bodies. This presents an unacceptable risk to the environment and security of supply.	The company should: • complete work to revise its drought triggers to demonstrate how it will apply drought measures to effectively manage abstraction to help manage the risk of causing deterioration in the status of water bodies. This should include worked examples showing how demand will be reduced in dry weather and how this will be effective in managing abstraction at sensitive sites • set out how any required changes to drought triggers affect the company's levels of service and consider if this constitutes a material change to its plan that requires further consultation with customers.

	capacity to meet increasing demand and must demonstrate it can maintain abstraction to within sustainable limits. To maintain abstraction to within sustainable limits, the Environment Agency believes the company will need to apply its level of service drought measures more frequently and that this could affect its current levels of service. The company should update its drought triggers to improve confidence that its drought measures will be effective in managing demand and the risk of causing deterioration in the status of water bodies. The company states (dWRMP, Table 7, p39) that most of its customers are likely to accept a lower level of service and support bringing in temporary restrictions every time there is a long period of dry weather. The company commits to revising its drought triggers and reviewing how this will affect its levels of service, but the EA lacks confidence that the company can deliver the assumed demand savings.		

Recommendation 6: Accelerate universal smart metering, explain the assumption of zero benefit and clarify individual components of the metering strategy.			
R6.1: Acceleration of smart metering.	The company proposes a rollout of universal smart metering by 2035, which may be accelerated to 2033 depending on the outcome of the Defra accelerate spend initiative. Smart metering is key enabler in delivering other demand management options and these are crucial in avoiding deficits and preventing the risk of deterioration. It is therefore unclear why the company has decided to delay delivery of universal smart metering to 2035 rather than 2030. Appendix K sets out Smart Network Scenarios which assess the benefit of the company implementing smart metering by 2030, 2035 or not at all. The costs and benefits from these scenarios are not clearly set out in the main plan and it is difficult to understand how the company has reached its decision on the timing of smart meter rollout.	Smart metering is key enabler in delivering other demand management options and these are crucial in avoiding deficits and managing the risk of causing deterioration in the status of water bodies. Slower delivery of demand management measures means more risk of the company increasing abstraction at groundwater sources to meet demand and this risks causing unacceptable impacts to the environment and/or that it is unable to meet demand and support growth.	The company should: • take account of the recent correspondence from Minister Pow (15th March 2023) and accelerate its rollout of universal smart metering or provide detailed justification and compelling evidence of why it cannot be completed by 2030 • set out how it will deliver universal smart metering by 2030 for example, deliver smart metering to customers without a meter first, then move onto switching customers from ordinary to smart • clearly set out, in the main plan, the costs and benefits of accelerating smart metering and how it has reached its decision on the timing of smart meter rollout

	In comparison to other WRE companies, the company has the slowest rollout of universal metering. Anglian Water commits to full smart metering by 2030 and Essex and Suffolk Water has proposed accelerating full smart metering by 2030 in its Suffolk resource zones. The company has not explored working with WRE companies to develop economy of scale and experience.		• explore working with WRE companies to develop economy of scale and experience • submit challenging performance commitments as part of the price review process.
R6.2: Smart metering delivers zero benefit.	The company assumes that smart metering (in isolation of other related actions) delivers zero benefit in terms of customer water savings. This assumption does not appear to be correct based on evidence of smart meter trials and delivery elsewhere in the WRE region and country. There is no data, evidence, or explanation to support and justify this assumption. The company's smart metering assumption also means there is a lack of clarity around how future smart metering forms part of the preferred best value plan.	The company may be underestimating the benefits of smart metering and its approach is inconsistent with other water companies. Smart metering is not adequately considered in the company's options appraisal and best value planning.	The company should: • re-consider or change its the assumption that smart metering delivers zero benefit • provide justification why smart metering delivers zero benefit. The justification should include the data and evidence used to support the approach taken • take smart metering options fully through its options appraisal and best value planning • work with other water companies to reassess the

			benefits of smart metering, for example Anglian Water, who are realising the direct benefits of smart metering.
R6.3: Planned programme of metering.	The company does not clearly set out its future metering programme. The main plan and Appendix M lack detail and clarity on the programme for: • optant metering • change of occupier metering • selective metering • compulsory metering • and metering street-by-street with comparative billing	The lack of information and clarity means customers and stakeholders cannot be confident that these options are feasible or will deliver the assumed benefits. If savings from demand management measures are less than forecast, the company is very likely to have a supply-demand deficit. This risks the company increasing abstraction at groundwater sources to meet demand and this could cause unacceptable environmental impacts and/or that it is unable to meet demand and support growth.	The company should clearly set out, in its plan, appendices and data tables, detailed and substantial evidence about its metering programme for: • optant metering • change of occupier metering • selective metering • compulsory • and metering street-by-street with comparative billing The metering programme should be specific to the company and include clear timescales.
Recommendation 7: Clarify the ambition to reduce non-household demand and justify the provision of new non-household supplies that are not sustainable.			

R7.1: Inconsistent ambition to reduce non-household.	The ambition to reduce non-household demand is inconsistent between the company's draft plan and data tables. The company states in its plan that it will reduce non-household consumption by 9%. However, in its data tables the company forecast a substantial (5.5%) increase in non-household consumption by 2037/38 from 2019/20 levels. The company states in its plan it will reduce non-household consumption by 9% and a saving of 4Ml/d could be achieved through fitting Enhanced Meter Technology to all existing non-household customers. Although the ambition is welcomed, the plan lacks specific detail and evidence on the planned delivery of measures. It is particularly important the company set out how it will reduce demand in the biotechnology, service and technology sectors as these are the main drivers of increasing non-household demand.	The discrepancy between the plan and the data tables is confusing, potentially misleading and reduces stakeholder and customer confidence in the plan. As per government expectations, all companies should assist non-household users to sustainably reduce their water use. Reducing non-household demand is an important part in reducing overall water demand and thereby helping to maintain customer supplies and protect the environment.	The company should: • clarify if it plans to reduce non-household consumption by 2037/38 and demonstrate how this contributes to the water demand target • rectify the discrepancies between the plan narrative and data tables • provide specific plans, in collaboration with retailers, to reduce non-household consumption. This should include detailed and substantial evidence about its approach to fitting Enhanced Meter Technology, reducing leakage and water audits for business, including the timescales. • set out how it specifically plans to engage with and reduce demand in the bio-technology, service and technology sectors.

R7.2: Provision of new non-household water demands.	Neighbouring water companies in WRE who face similar water resource challenges propose either a moratorium on new non-household demand (where the water is used for non-domestic purposes) or take evidence led risk-based decisions whether to grant or deny any new non-household requests. Despite the risks and issues set out in Recommendation 1 the company continues its plans to provide water for all new non-household demands. The EA has concerns that the company may supply non-household demand with unsustainable sources of supply, exacerbating its own deficits and risking causing deterioration in the status of water bodies. The company has not justified why it plans to supply new non-household demand, (where the water is used for non-domestic purposes) with water that is not sustainable.	Continuing to supply all new non-household growth does not reflect the risks and issues the company faces and is inconsistent with the approach taken by neighbouring water companies in WRE. Using unsustainable sources of supply to provide for all new non-household demand puts the environment and security of supply at risk.	The company should: • justify why it is appropriate to supply new non-household demand, (where the water is used for non-domestic purposes) with water that is not sustainable.
R7.3: Non-household demand forecast.	It is unclear whether the company consulted or engaged with retailers of water to non-household customers in developing future non-household	The lack of engagement with retailers specifically when developing the non-household demand forecast reduces	The company should consult and engage with retailers of water to non-household

	demand forecasts. This is a regulatory expectation as set out in guidance.	confidence in the company's non-household forecasts.	customers to improve its non-household demand forecasts.
R7.4: No dry year allowance made for non-household demand.	Appendix C2 identifies that agriculture (and other weather dependent industries) make up 18% of the proportion of properties in the industry group. However, the company does not apply an allowance for a dry year to non-household demand and assumes that dry year conditions do not significantly affect commercial water use. There is no data, evidence, or explanation to support and justify this approach.	The company may be underestimating how a dry year impacts on non-household demand. The lack of appropriate data, evidence, and explanation, in support of the company's approach, reduces confidence in the plan.	The company should apply an allowance for a dry year to non-household demand or provide justification why this is not appropriate with specific reference to agriculture (and other weather dependant industries). The justification should include the data and evidence used to support the approach taken.
Recommendation 8: Provide confidence the plan will achieve assumed proposed demand reductions and the actions needed to keep demand savings on track.			
R8.1: Inconsistent ambition to reduce leakage and PCC.	The ambition to reduce leakage and PCC is inconsistent between the company's draft plan and data tables. In the plan, the company aims to achieve a 50% reduction in leakage (from 2017/18 levels) by 2050. However, in its data tables the company forecast a reduction of 63%.	The discrepancies between the plan and the data tables are confusing, potentially misleading and reduce stakeholder and customer confidence in the plan.	The company should: • clarify its plans to reduce leakage and PCC by 2050 • rectify the discrepancies between the plan narrative and data tables.

	In the plan, the company aims to achieve a PCC of 110 l/h/d by 2050. However, in its data tables the company forecast a PCC of 99 l/h/d.		
R8.2: Delivery of planned demand reductions.	The company's planned demand reductions are welcomed, however, given the risks of non-delivery and reliance on demand management there is insufficient detail and evidence on the delivery of the exact measures planned. There are general definitions proposed demand management options in Appendix M, however these are high level and lack specific detail on delivery and timescales. Section 11 of the main plan sets out the preferred portfolio, but there is insufficient narrative to support the planned reductions. The WRMP24 baseline demand forecast assumes achievement of WRMP19 commitments. The EA has concerns that currently PCC is above forecast, and metering is below forecast (based on Annual Review 2022). The EA lacks confidence that assumed reductions will be delivered due to the company's past performance in	The EA do not have confidence that the company will deliver its proposed demand management options, due to the absence of detailed delivery information and based on past performance. This has the potential to put public water supply and the environment at risk. It is important that the company meet customer preference, in the plan it states *"customers have stated that they want us to do more to educate customers in their water usage and the ways to save water. As well, they want us to share more information to all of our customers of why this is so important; so to share more on our water stress status, the future challenges and the link between demand and the environment."*	The company should: • for each option identified in Appendix M provide detailed and substantial evidence about the delivery of the actions, this should be specific to the company. For example, this should be similar to the detailed demand management water efficiency plan provided in the company's response to 2022 Annual Review • incorporate more detail into the main plan (Section 11), linking to Appendix M and better representing the delivery of the preferred portfolio • demonstrate how it plans to meet customer preference as stated in its plan and use all available channels to target its

	delivering its WRMP19 demand reductions. The company has reported PCC (and distribution input) as above forecast in AMP7 and this may continue into AMP8. The company state that *"per capita consumption (PCC) reductions in AMP7 remain a challenge following the Covid-19 pandemic and that whilst levels of household usage are reducing, we are not yet seeing pre-Covid levels despite extensive water efficiency work above our proposed WRMP19 programme."*		customers, for example, innovative billing, mobile applications etc • provide assurance of option delivery and provide evidence where any risks exist. This should include that some of its baseline assumptions may not be fulfilled • demonstrate that its targets are achievable, being planned for and that non-delivery does not present a risk to security of supply.
R8.3: Uncertainty associated with demand management options.	Despite the company relying heavily on options to reduce demand it does not include any uncertainty around delivery of its demand management measures in its target headroom assessment.	Target headroom is under-estimated due to the exclusion of uncertainty in delivery of demand-side options (headroom component D4). This means the supply demand balance is not appropriately represented.	The company should include an assessment for headroom component D4 (uncertainty associated with demand-side options) in its plan. This should include uncertainty in both its own demand-side options and uncertainty associated with Government water efficiency labelling of domestic goods.
R8.4: Baseline water efficiency activity.	The company states that its baseline demand forecast includes existing demand management policies.	It is unclear how existing water efficiency activity is factored into the baseline demand forecast.	The company should include detailed information about its (and retailers) baseline water

	However, the plan does not clearly describe, in detail, the existing baseline water efficiency activity undertaken by both the company and by retailers operating in its area. There is limited information about how these activities are incorporated into the baseline demand forecast.		efficiency activities and how these are incorporated into the baseline demand forecast.
Recommendation 9: Ensure there is clear monitoring of the demand management programme.			
R9.1: Monitoring the water efficiency programme.	Successful demand management is a key strategy to maintain the company's supply demand balance in the short term. However, there is insufficient information on how the company plans to monitor its demand management programme and if any key decision points are identified and alternative options proposed, should the delivery of the programme be slower than expected.	The lack of information on monitoring of the demand management programme reduces confidence in the reality of achieving the water efficiency programme forecasted savings. To meet government expectations and the dWRMP24 demand management ambition it is essential that the company continuously monitors and reacts to delivery progress.	The company should provide a clear water efficiency monitoring programme throughout the planning period with particular focus on the first 10 years. This should include the specific actions the company will take to monitor its planned: • leakage reduction • PCC reduction • non-household demand reduction • metering rollout • any other measures to reduce demand

			The company should set out the actions it plans to take if demand options fail to deliver, this should include identifying key decision points and alternative options.
Recommendation 10: Complete a full review of source vulnerability and reliability; include investment in making existing supplies more resilient.			
R10.1: Outage is not fully accounted for in the plan and risks security of supply	The company's outage allowance does not reflect operational experience. Although the EA acknowledges that outage fluctuates yearly, outage has consistently been reported as above forecast and this has been repeatedly raised as a concern via the Annual Review process. Recently, prolonged, and significant outage events have contributed to the company requesting local enforcement positions to avoid compromising its licence compliance. The EA is concerned that observed outage events are affecting the reliability of abstraction and this is affecting the company's ability to make full use of water resources available to it.	The plan does not reflect the true risks to the environment and security of supply posed by outage. Outage events have contributed to the company requesting local enforcement positions which can put the environment at risk.	The company should: • complete a full review of source vulnerability and reliability and use the results to update the outage allowance where necessary • ensure it includes investment to make existing supplies more resilient and work proactively with the EA, DWI and other regulators to highlight supply risks early so everything possible can be done to avoid over-abstraction.

	The EA is concerned that future unplanned events such as outages or peaks in demand may result in the company increasing abstraction at the risk of the environment.		
Recommendation 11: Revise the strategic environmental assessment (SEA).			
R11.1: Programme appraisal	The Environmental Report does not consider alternative plans such the least cost programme and a best environment and society programme. Section 6.4 of the Environmental Report states "*Cambridge Water tested the draft preferred plan under a range of different planning scenarios…Under all scenarios, there is no change to the preferred plan as it selects all feasible options required to meet the deficit. As a result, there is no available alternative or adaptive plan as part of the WRMP and as such, no further assessment is required."* The justification for not selecting reasonable plan alternatives is weak.	This issue presents a significant compliance risk. The overall effectiveness of the plan is at risk without an assessment of plan alternatives and a clear understanding of why the preferred plan has been chosen in light of alternatives. Without the assessment of all plan alternatives, the SEA does not comply with the SEA Regulations. There is potential for legal challenge if all alternative options have not been assessed or the plan/SEA cannot fully justify why the preferred option has been chosen and whether the same outcomes could have been achieved with less harmful alternatives.	The company must demonstrate that all plan-based alternatives have been assessed, which includes a least cost and a best environment and society programme and as a minimum. The company should provide more detailed explanation for not selecting reasonable plan alternatives.
R11.2: In combination effect	Although briefly described in section 6.5 of the Environmental Report, the company has not clearly identified in	Without clarity on the presence of in-combination effects the EA cannot be sure all significant effects have been correctly identified.	The company should add further detail and clarity to section 6.5 and Table 6.5 to ensure that in-combination effects have been

	combination effects or set out exactly how these will be addressed.		clearly identified and set out exactly how these will be addressed.
R11.3: Monitoring plan	The company has set out a list of provisional and indicative monitoring proposals in section 7.4 of the Environment Report. However, there isn't a clear commitment to how monitoring will be delivered, implemented and actioned. A final monitoring framework has not yet been prepared, the company states that it will be included within the Post Adoption Statement.	Without clear monitoring commitments there is the potential for implementation of the WRMP to result in unforeseen significant effects that could persist without appropriate intervention.	The company should: • clearly set out a commitment to how monitoring will be delivered, implemented and actioned prepare a final monitoring framework and include it within the Post Adoption Statement.
R11.4: Cross boundary effects	Section 4.2.2 of the Environment Report sets out the use of the geographical extent of the operational area covered by the WRMP and a 10km study area from each option has been used. However, the report does not discuss, for example, effects that may occur outside of the Cambridge Water supply area into another adjacent geographical water supply area.	Without identifying cross boundary effects the EA cannot be certain all significant effects have been correctly identified.	The company should set out how cross boundary effects have been considered within Section 4.2.2 and ensure this follows through to the methodology and assessment sections to provide certainty that all significant effects have been captured.
Recommendation 12: Ensure the plan is legally compliant by adhering to the WRMP Directions.			

R12.1: Direction 3(d) parts (i), (ii), (iii), (iv), (v).	The company has presented some information on its carbon emissions in the plan and data tables. However, the company has not: • completed an assessment of greenhouse gas emissions for its demand management options • explained how its greenhouse gas emissions will contribute individually and collectively to its greenhouse gas emissions overall • set out any steps it intends to take to reduce greenhouse gas emissions • described how these steps will support the delivery of any net zero greenhouse gas emissions commitments • described how these steps will support delivery of the UK government's net zero greenhouse gas emissions targets and commitments.	The company is not compliant with Direction 3(d), parts (i), (ii), (iii), (iv), (v). Regulators and stakeholders do not have assurance that the carbon implications of the demand options have been fully considered, or that any company level or National net zero commitment will be delivered on time.	The company must • complete an assessment of greenhouse gas emissions for its demand management options • explain how its greenhouse gas emissions will contribute individually and collectively to its greenhouse gas emissions overall • set out any steps it intends to take to reduce greenhouse gas emissions • describe how these steps will support the delivery of any net zero greenhouse gas emissions commitments • describe how these steps will support delivery of the UK government's net zero greenhouse gas emissions targets and commitments. •
R12.2: Direction 3(g) (iii) and 3(h) (iii).	The company does not comply with part (iii), specifically (bb) of Direction 3(g) and 3(h).	The company is not compliant with Direction 3(g) (iii) and 3(h) (iii).	The company must:

	The company refers to change of occupier metering in its plan. However, this is inconsistent with the data tables where there is a value of zero across the planning period for final plan metering change of occupancy (table 2c row 34.4). As a result, the company does not comply with part (bb).	The discrepancy between the plan and the data tables is confusing, potentially misleading and reduces stakeholder and customer confidence in the plan.	• resolve the discrepancy between the plan and the data tables • set out values for change of occupancy metering across the planning period.

Moderate issues identified for Cambridge Water's Water Resources Management Plan

Moderate issues are those that we consider significant to the draft plan and may reduce the effectiveness of the plan, stakeholder/customer understanding and/or present a moderate risk to the environment. These are reported as improvements in our representation submission.

Area of issue	Issue and evidence	Implications	Information or changes required
Improvement 1: Explain how the company will reduce greenhouse gas emissions.			
I1.1: No consideration of carbon offsetting,	Linked to recommendation 11. The company state it aims to achieve net zero carbon by 2030, however it has not considered mitigation opportunities for reducing carbon emissions, or carbon off-setting to for mitigate residual emissions.	The absence of carbon mitigation, offsetting and/or innovative carbon options does not comply with the WRPG and reduces customer and regulators confidence in the quality of the options selection and decision making.	The company should set out how it plans to offset and mitigate carbon emissions from its proposed options. The company should consider

mitigation or innovative carbon options.	The company does not consider options to reduce carbon that embrace innovative designs and opportunities to generate or be powered by renewable energy or sequester carbon (or both).		innovative approaches and opportunities to reduce or mitigate carbon emissions in its options appraisal.
I1.2: No consideration of uncertainty in carbon assessments.	The company does not consider uncertainty within its carbon assessment, and this has the potential to affect plan outcomes.	The absence of uncertainty within the company's carbon assessment does not comply with the WRPG and reduces customer and regulators confidence in the quality of the company's options selection and decision making. calculation of carbon emissions, any uncertainty in the data should be considered.	The company should include an assessment of uncertainty in the assessment of carbon emissions.
Improvement 2: Clearly set out all existing bulk transfers.			
I2.1: Insufficient information on bulk transfers.	The company has referred to several routine bulk transfers and includes values in its data tables. However, there is insufficient information, in the plan, on the details of each transfer and the agreements it has with other water companies to secure these measures. The company has not included information about its supply to a commercial customer outside of the supply area, which is used seasonally.	Providing more detail in the plan will ensure clarity for each agreement, reassurance that transfers are reliable during a dry year and allow customers and stakeholders to clearly identify each bulk transfer agreement.	The company should provide the following information on its bulk transfers: • the name of the donor/receiving company • the volume for each agreement • the agreed limits between supplier and recipient companies and ensure consistent reporting in the

			relevant plans. This should be described for both normal operation and the chosen design event • variations related to contractual or other arrangements such as decreases in transfers due to drought, responding to operational incidents or pain-share agreements • information about its supply to a commercial customer.
Improvement 3: Clearly present the proposed use of drought measures in the data tables.			
I3.1: Drought measures are not presented as options in table 5.	The company has not appropriately presented the proposed use of drought measures in its data tables. All preferred options that provide supply or demand benefit in the DYAA scenario in table 3b should be listed and itemised in table 5. This includes all drought measures set out in table 6 that are listed as 'Y' to indicate that the benefit is included within the DYAA final planning supply demand balance.	Adding this detail provides transparency of the options that provide benefit and assurance that the final planning supply-demand balance is accurate.	The company should add entries for all relevant drought measures to table 5 and ensure the benefits match those presented in table 3b.

Improvement 4: Improve the approach used for accounting for climate change impacts to include further evidence and justification.			
I4.1: Approach to assessing and presenting climate change impacts.	Section 6.6.1 of the main plans state that the climate change methodology is based on a Tier 2 approach, with some elements of Tier 3. However, the Tier used for the climate change assessment is not justified with sufficient detail and it difficult to assess if the company applied the approach for the relevant Tier of analysis. Four future scenarios were used, but there is insufficient information to identify which were chosen and insufficient justification for the choice made. Appendix D, Table 2.2 indicates the level of warming of each scenario in degrees. However, it is unclear which model these levels of warming originate from, which ensembles of the models were used, and which year they represent. It is unclear if UKCP18 or UKCP09 data were used.	Without the sufficient level of detail, the EA cannot be certain if the approach to assessing and presenting climate change impacts is appropriate. The impacts of climate change on the availability of supplies may be higher, or lower, than presented in the plan.	The company should: • explain and justify with enough detail which Tier of analysis it has used in its assessment and which products were selected • clarify which model the levels of warming originate from, which ensembles of the models were used, and which year they represent • clarify if UKCP18 or UKCP09 data were used. For water resources zones with high vulnerability, the EA guidance indicates the analysis should consider Global or Regional UKCP18 projections, and scenarios that explore the wider range of uncertainty based on evidence from other climate models (for example, UKCP18 probabilistic projections).
I4.2: Vulnerability Assessment and	The company has not:	Without the sufficient level of detail, the EA cannot be certain if the approach to	The company should:

analysis of UKCP18.	• undertaken a Baseline Vulnerability Assessment (BVA) or referenced a BVA from WRMP19 • made comparison between UKCP09 and UKCP18 • contextualized the UKCP18 products provided, namely relevant weather variables (for example, precipitation and temperature) for future time slices and baseline period for all scenarios for the Probabilistic, Regional and Global Projections • screened UKCP18 products with datasets used for WRMP19 to identify datasets to enhance analysis.	assessing and presenting climate change impacts is appropriate. The impacts of climate change on the availability of supplies may be higher, or lower, than presented in the plan.	• reference its BVA from WRMP19 where relevant or explain how its vulnerability assessment is an appropriate alternative • make comparison between UKCP09 and UKCP18 • provide contextualization of the UKCP18 products • screen UKCP18 products with datasets used for WRMP19 to identify datasets to enhance analysis.
Improvement 5: Clarify the use of best value metrics.			
I5.1: Best Value metric weighting.	It is unclear how the Best Value metrics are weighted against other metrics within the Multi Criteria Decision Analysis (MCDA) tool used. Currently the Natural Capital Assessment (NCA) results show costs to the environment, and it is unclear how these results affected the decision-making process.	Without the sufficient level of detail, the EA cannot be certain of the weighting that the NCA results have on the decision-making process.	The company should clarify: • how the Best Value metrics are weighted against other metrics within the MCDA tool used • how the identified costs to the environment and weighting of the NCA results have impacted the decision-making process.

I5.2: Managing uncertainty.	The company did not undertake a sensitivity analysis or consider how to manage uncertainty in its assessment.	As the valuation and assessment of environmental and social impacts is frequently uncertain, the company should consider how to manage this uncertainty in its assessment.	The company should consider how to manage uncertainty in its assessment and undertake a sensitivity analysis.
I5.3: Intermediate and quantitative steps taken in the assessment.	There is insufficient detail on the intermediate, quantitative steps taken in the assessment, making it difficult to observe if minimum practice was applied. It is unclear whether a screening process was used to decide which ecosystem services would be assessed for each option, or if no impact was expected from the options. In addition, minimum practice was not conducted for Water Purification, as a quantitative assessment was not undertaken.	The lack of presentation of the intermediate steps makes it difficult to determine if the methodology stated in the report was followed. Without the sufficient level of detail, the EA cannot be certain if minimum/best practice was followed.	The company should: • provide detail of the intermediate steps of quantification, such as tCO2e sequestered for each habitat type in each option • clarify whether a screening process was used to decide which ecosystem services would be assessed for each option • complete a quantitative assessment for Water Purification and include the results in the NCA.
Improvement 6: Improve the information provided in both the household and non-household demand forecast technical appendices.			
I6.1: Suggested improvements to the demand	Appendices C1 and C2 (demand forecasting) contain a number of improvements suggested to the company by Artesia. In summary these are:	It is currently unclear whether the company has acted on any of the suggested improvements to demand	The company should provide information in the plan about how it is taking on board the six suggested improvements listed

forecast technical appendices.	• consider a micro-component study to improve on the current approach which is based on ageing national datasets. This should include more micro-component data for new build properties • consider the company's resilience to prolonged duration hot, dry events such as summer 2018. This should include the Artesia (2020) project which assessed the magnitude of peak demand over different durations for water companies • update the non-household demand forecasts prior to final plan submission • work with MOSL and retailers to improve the quality of non-household forecasts • improve understanding of which Standard Industrial Classification category its non-household customers are allocated to • adopt a more continuous approach to non-household demand forecasting rather than revisiting this only once in every five-year planning cycle.	forecasting or whether it intends to act on them in the future and if so, when.	here (and in Appendix C1 and C2). This should include whether the company agrees with the suggested improvements, if it has already addressed them, and if not, when it plans to address them.

Improvement 7: Review resilience of its plan in the context of the 2018 and 2022 drought.			
I7.1: Set out any lessons identified and actions in response to the drought of 2022.	The drought of 2022 challenged the company and was one of the most significant droughts of recent times. The drought saw very high demands and highlighted some areas where resilience needs to be improved. The company should learn from any issues it experienced, such as: • outage events caused by high temperatures • high customer demand, at peak times the company reported an increase of 37% in its distribution input • and the resultant impacts on licence compliance, caused by the above.	The effectiveness of the plan may be reduced if the company fails to identify risks from conditions which challenge systems or impact the supply demand balance. The company may miss an opportunity to improve the plan if it does not include any new activities undertaken, options considered, or any measures not currently included in the dWRMP24 modelling and drought plan.	The company should: • include an appendix to consider its experiences from 2022 and refer to the updated water resources planning guideline for a list of topics to consider • set out any lessons identified and actions in response to these. This should include changes made to the plan as a result and plans to undertake further work.