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Secretary of State for Environment, Food & Rural Affairs  
Water resources management plan consultation  
Area 3D  
Nobel House  
17 Smith Square  
London  
SW1P 3JR

23 May 2018

Dear Secretary of State,

### **Affinity Water – draft water resources management plan 2019**

Affinity Water published its draft water resources management plan 2019 on 19 March 2018 for consultation. This letter provides a summary of our assessment of the draft plan. It is our statutory consultation response, produced in accordance with our statutory duties and the Government's strategic policies and objectives for Ofwat. These views are without prejudice to any subsequent decisions that we may make at the next price review (PR19) in connection with the business plan that the company is scheduled to provide to us in September. Our assessment has considered:

- how adequately the draft plan follows the requirements of the water resources planning guideline and Defra's guiding principles for water resources planning; and
- how the draft plan helps achieve our vision of ensuring trust and confidence in the sector through the delivery of our key themes for PR19 of great customer service, affordable bills, resilience in the round and innovation.

Long term water resources planning is a key part of company business activities. We expect companies to integrate the development of their water resources management plans into their business plans which they submit to Ofwat. We also expect them to adopt the 'twin track' approach to improve water supply resilience through both increased supply and reduced demand. We will continue to work closely with Government and the other regulators in both England and Wales to ensure that a long term secure and sustainable supply of water is achieved.

Affinity Water supplies water to a population of approximately 3.8 million people across the south east of England. Its water resources are planned on the basis of

eight water resource zones grouped into three supply regions: Central, Southeast and East.

Affinity Water predicts that a number of its water resource zones will be in deficit in the future, without additional action to reduce demand or provide additional supplies. This means there would be insufficient water to maintain supply to customers during relatively frequent drought conditions, noting that Affinity Water has one of the worst levels of service in the sector. Three zones are forecast to enter a deficit in the early 2020s driven primarily by abstraction licence changes. The scale of the challenge and complexity of the issues means that effective action is required to deliver for customers and the environment.

The Affinity Water plan sets out a range of demand-side and supply-side options to meet future demands for water and ensure that customers receive a sustainable and resilient service. While some aspects of Affinity Water's plan are in line with our expectations, there are a number of important areas where the plan fails to provide convincing evidence that it delivers in the best interest of customers. In particular:

- The Affinity Water draft plan includes two plans for consultation, a preferred plan and alternative plan. The preferred plan is described by the company as best value and is presented favourably. The alternative plan presents options for improved levels of service under severe drought, greater leakage reduction and higher reductions in abstraction licences. Given the favourable positioning of the preferred plan, if it is chosen for the final plan, it will need to demonstrate clearly that it represents the best value outcome for customers and the environment.
- We have concerns around the process adopted for plan development. We expect to see more transparency on how the final programme was selected for both the preferred and alternative plans, to demonstrate that it represents an appropriate package of options, for both the company and region as a whole. There are also lots of unresolved uncertainties, which cut across both plans, such as the level of service and licence reduction requirements. These raise concerns about the effectiveness of the consultation and the robustness of the draft plan.
- The preferred plan includes several trading options including reducing both imports and exports to neighbours and large new trades later in the planning period. We have concerns that current trades are proposed to be reduced without sufficient justification given the near term needs that Affinity Water faces. There are also significant mismatches in the scale, timing and costs presented for trading options.

- In general the draft plan presents limited ambition for demand management. This is made more significant by the likely scale of the supply-demand balance challenges Affinity Water faces. Although there are reductions from the current high per capita consumption (PCC) level, the resulting average PCC of 132 l/h/d by 2045 is still less ambitious than the average for other companies nationally and lacks the ambition of leading companies. The preferred plan also only includes leakage reduction of 10% by 2025.
- It is evident that Affinity Water has worked closely with the Water Resources South East (WRSE) and Water Resources East (WRE) regional groups and recognises the importance of water resource cross-boundary schemes and trades. However, significant water imports are presented late in the planning horizon and we consider that more can be done in the near term to seize the opportunity of regional solutions to address its challenge and those more widely in the south east.

Further details on these points are outlined in the annex to this letter alongside more detailed comments on different areas of the draft plan.

I look forward to seeing these points addressed in Affinity Water's statement of response and final plan.

Yours sincerely



**David Black**  
**Senior Director, PR19**

## Annex

In this annex we outline further details on the points raised in our main letter alongside more detailed comments on different areas of the draft plan. Our points reflect our assessment approach and cover:

- 1. Plan building blocks:** The overall approach to the development of the draft plan in line with the technical guidance and broader resilience issues.
- 2. Customer participation:** The type and quality of interaction with customers and the impact this has had on the draft plan formulation and proposals.
- 3. Demand forecast:** How the company has considered the impacts of population growth, leakage and water efficiency in its demand forecast.
- 4. Supply forecast:** How the company has considered climate change, abstraction licences changes and transfers in its supply forecast.
- 5. Forecast uncertainty:** The robustness of the draft plan in accommodating uncertainties in the demand and supply forecasts.
- 6. Supply-demand balance:** The robustness of the overall need for water, if any, and the scenario testing applied to this assessment.
- 7. Options:** The approach taken to identifying and screening options for both supply and demand, including identification of trades and third party options.
- 8. Decision making:** The decision making tools, preferred programme development process and accompanying assurance processes.
- 9. National and regional considerations:** The interaction and consistency with national studies and regional groups (where relevant).

### 1. Plan building blocks

Affinity Water has used methods and data appropriate to the scale and complexity of the problem it needs to address and adopted a longer planning horizon aligned with WRSE. However, there is uncertainty caused by the presentation of the two plan scenarios and a lack of detail on the approach to non-drought resilience. In particular:

- The Affinity Water draft plan includes two plans for consultation, a preferred plan and alternative plan:
  - The preferred plan is described as the company's view of the best value for its customers and the environment.

- The alternative plan includes options for improved levels of service under severe drought, greater leakage reduction and higher reductions in abstraction licences.
- We note that planning tables are only presented for the preferred plan which means it is not possible to fully understand the alternative plan. To address this lack of transparency the company should provide in the final plan the full data for both plans. This will help to provide the full context for whichever one of the plans is selected as the final plan.
- Affinity Water has not referred to non-drought resilience, such as freeze-thaw events, in detail within the draft plan, though it is noted that this is being developed for the company PR19 business plan. Further clarification is needed for the final plan.
- The planning period has increased from 25 years in the previous plan to 60 years for this plan. The company states that this will help it address strategic needs and ensure resilient supplies. This also aligns with the planning period of WRSE which we consider increases transparency.

## 2. Customer participation

There is limited evidence of customer participation in the development of the draft plan. This is recognised by Affinity Water who intend to undertake further customer engagement prior to the final plan. Therefore, we expect the final plan to demonstrate that customers have been able to participate effectively in the planning process and how this shaped the final plan. Further specific comments:

- The draft plan is reasonably accessible, individual sections are generally clear to understand and a non-technical summary of the plan is available which is helpful. However, with both the preferred plan and alternative plan being presented it is not clear what the final plan may look like, making it difficult to engage on specifics of the draft plan. Further considerations:
  - The company promote the preferred plan in the consultation material as being the best value, which potentially frames and influences customer responses. This positioning should be taken into account when reviewing responses and finalising the plan.
  - It is not clearly explained in the material how the alternative plan is derived from the preferred plan. In the final plan the relative differences between the plans should be made clearer, specifically addressing how they reflect regulatory challenges on leakage reduction, the scope for resilience improvement and obligations such as abstraction licence changes.

- The draft plan presents pre-consultation results showing that 65% of customers consulted do not consider additional investment should be used to reduce the frequency of drought orders. The enhancement of level of service in the alternative plan is a clear distinction between the two plans. Therefore it should be supported by robust evidence. Further considerations:
  - The extent of this engagement is not detailed within the plan and it is unclear how the proposed change in level of service was presented to customers. It is also uncertain whether comparative resilience to neighbouring companies was used given the relatively poor service levels at present. These should be clarified in the final plan.
  - If the alternative plan is selected Affinity Water should demonstrate clear evidence for changes to customer preferences relating to levels of service.
- It is unclear from the draft plan that customers have been consulted regarding the selection and identification of options, and their preferences for option types such as leakage reductions. This should be clarified as part of the final plan alongside a clear explanation of how this has influenced the selection of preferred options.
- Affinity Water has presented customer bill impacts in its draft plan as total costs per 5-year period. While this is useful, it is unlikely to be particularly informative for individual customers to interpret and an estimated impact on the average bill would have been clearer. Therefore in the final plan we would expect Affinity Water to provide clarity on bill impacts and make them more accessible to customers.
- Affinity Water's Customer Challenge Group (CCG) has been involved in the development of the plan. The draft plan provides a description of this and we expect this to continue for the final plan.

### **3. Demand forecast**

Population growth is one of the main drivers of the plan. Affinity Water appears to have followed the relevant guidance and assessed demand through consideration of appropriate components. We are concerned about the approach to population growth, PCC trends and the lack of engagement with non-household retailers. In particular:

- The use of a trend-based population forecast and incorporation of the local authority plan-based forecasts is an innovative approach. However, the final plan should clarify this hybrid method does not result in lower forecasts than only using the local authority plan-based method, particularly in the near term.

- The company needs to provide further explanation of the baseline PCC trends. For example, it is not clear why average baseline PCC is forecast to increase late in the planning period or what impact baseline water efficiency measures have and how they are included. This should be clarified for the final plan.
- The trend in non-household demand is relatively constant over the planning period. We welcome the company engaging with large users such as airports, a power station and the rail network to enhance this forecast. We recognise that the company attempted to engage with non-household retailers but has been unsuccessful so should consider alternative approaches to further validate the demand forecast, and reflect outputs of this in the final plan.

#### 4. Supply forecast

Affinity Water has calculated available supply in line with guidance and statistical approaches have been used to help determine low frequency drought yields with higher levels of confidence which is an example of good practice. However, further work is required in a number of areas including the approach to abstraction licence reductions, climate change impacts on supply and outage. In particular:

- The Water Industry National Environmental Programme (WINEP) abstraction licence changes have a significant impact upon the available supply and are presented differently in the preferred and alternative plan. Further considerations:
  - The preferred plan represents licence change impacts for the certain (green) WINEP category resulting in a 10MI/d loss of available supply by 2025. The alternative plan has licence impacts of 40MI/d resulting from including both certain and indicative (amber) licence impacts. The alternative plan approach represents the guidance more closely and the company needs to address this discrepancy in its final plan.
  - For the final plan we expect Affinity Water to revise its forecasts with reference to the latest WINEP outputs (release 3) and explain any variations with the previous release and how the selected plan, either preferred or alternative, has changed as a consequence.
- While climate change impacts on droughts more severe than those recorded historically have been assessed, full details of these are not included in the draft plan. This reduces the transparency of the alternative plan which is based on these more severe scenarios. If the alternative plan is chosen as the final plan, the full details should be presented.
- Outage has increased from 5% to 8% since the previous plan, bringing it above the industry average of 6%. For context this increase accounts for

around 30MI/d, which is material to the company supply-demand balance.  
Further points:

- The draft plan notes this is caused by issues at a few large surface water abstractions, however, greater clarity is required on the sensitivity of outage to these few sources and the drivers behind the change from the previous plan.
- Given its impact on available supply we would expect the company to consider measures to reduce outage further given its forecast supply-demand deficits. It is unclear whether such outage improvement options have been considered and this should be clarified in the final plan.

## **5. Forecast uncertainty**

Affinity Water's approach to target headroom appears to be in line with guidance and it has adopted a target headroom of around 9% of demand, slightly above the industry average of 8%. The draft plan also identifies additional risks and uncertainties including the potential impact of High Speed 2 on some groundwater sources and metaldehyde risks for bulk transfers. However, greater clarity on the mitigations should be provided in the final plan to ensure confidence in the robustness of the plan.

## **6. Supply-demand balance**

The supply-demand balance profile presented is in line with the assumptions of the individual supply and demand components and it appears to be consistent with the guidance. However, concerns related to individual components of supply and demand have been noted above, which need further clarification. We are also concerned on the transparency of the presentation of the preferred and alternative plans. In particular:

- Although a supply-demand balance output is presented in the plan narrative for both plan scenarios, only one set of planning tables are produced for the preferred plan scenario. This means it is not possible to fully understand the alternative plan. In particular:
  - It is not clear what level of emergency drought order restrictions are included in this plan under 1-in-200 year drought conditions.
  - It is also unclear what differences in the supply forecast there are to the preferred plan other than supply-side drought orders/permits not being relied on during severe drought and an additional 30 MI/d of indicative abstraction licence reductions.

- While the presentation of two costed alternative scenarios for planning captures the key issues for consultation, the approach makes it harder to identify the costs and impacts associated with each area of uncertainty. This would be clearer under more conventional sensitivity testing and the company should consider how it can make the nuances between the two plans clearer in the final plan.
- In the final plan we would expect Affinity Water to provide clear evidence for the choice of final planning scenario (either preferred or alternative). This should explain how the outcomes of consultation with customers and key stakeholders have influenced the decision.

## 7. Options

Reflecting the scale of the challenge, Affinity Water has considered a range of supply and demand options. However, further work is required around a number of options, including the approach to trading and supply options. There also appears to be a lack of ambition in the target average PCC and a lack of clarity on the approach taken for leakage reduction. Further specific comments:

- Affinity Water has used what appears to be appropriate screening criteria and processes for developing lists of options. This used a phased screening approach with individual scores applied to screening components with the total score deciding if the option passes to feasibility.
- Affinity Water has provided a clear summary of its third party engagement process and the methods adopted to seek new third party options, including the use of an Official Journal or OJEU to promote the need and generate third party interest. Further considerations:
  - We welcome that Affinity Water has specified six third party options in its feasible list, with clear explanations for the 12 unconstrained options that were not selected. We note the focus of the options was on supply and the company should consider what it could do in order to promote demand options.
  - The preferred plan includes two third party options (third party groundwater sources and reservoir), however, these are both planned for very late in the planning period (2052 earliest delivery). It is unclear what cost assumptions have been made for third party options and any impact the alternative plan would have on these options. Both these points requiring clarification in the final plan.
- Affinity Water recognise its potential significance as a "regional hub" for water resource transfers and water trading is a key feature of the draft plan,

although we have concerns about the consistency of the presentation of some transfers. Further comments:

- The preferred plan includes a reduced export to South East Water, reduced import from Anglian Water and significant imports from Thames Water late in the planning period. The reduced import from Anglian Water is in contrast to Affinity Water's near term needs for additional water and needs further explanation.
- It is unclear how effective Affinity Water's engagement with its trading partners has been as there are mismatches in trades between company plans. The starting value, trend and end point of the reduced import from Anglian Water is not consistent between the two companies, with a difference of 23 MI/d in its starting value for example.
- Linked to this point the costs of the preferred options in Affinity Water's draft plan appear to be significantly lower than the costs presented in trading partners' plans. This includes the trade with Thames Water and here the option dossier costs are also significantly different to the planning tables. In the final plan Affinity Water should provide greater evidence on the costing of trades.
- Linked to the above point the cost impact is significant as later in the planning period there is a clear choice between an additional trade from Anglian Water or Thames Water. Currently Affinity Water selects 50 MI/d additional transfer from the River Thames in preference to a transfer from Anglian Water. Greater clarity is required on this choice, its deliverability and the overall costs and benefits of alternative regional strategies.
- Affinity Water's preferred plan has leakage reducing by 10% by 2025, 15% by 2030 and only 16% by 2045. The alternative plan targets 15% reduction by 2025, increasing to 33% by 2080 (2045 ambition is not stated). Further considerations:
  - There is an incomplete representation of the leakage programme for the alternative plan in the draft plan. It is unclear how it will be achieved and how it links to current leakage targets and this reduces the transparency of the draft plan.
  - It is unclear how the leakage options relate to customer preferences. As set out in section 2 it is unclear from the draft plan if customers have been consulted regarding the selection and identification of options, prior to the draft plan being published. Clarity on customers' views on leakage reductions should be presented as part of the final plan.

- Affinity Water has an ambitious compulsory metering programme supported by smart network loggers to better understand customer demand trends. The level of metering penetration rises from a forecast 75% in 2020 to 91% by 2025 delivering up to 50MI/d in benefits.
- In the preferred plan the long term target for average PCC at 132 l/h/d by 2045 is less ambitious than the average for other companies nationally (122 l/h/d) and lacking the ambition of leading companies. This is made more significant by the likely scale of the supply-demand balance challenges Affinity Water face. Further observations:
  - Company average PCC is the second highest of all companies in 2020. Affinity Water forecasts an improvement to its average PCC ranking by 2025 as a result of baseline metering but falls back to original position by 2035 as other companies forecast ongoing reductions in PCC.
  - It is unclear what the baseline water efficiency options are although it is assumed to be predominantly based on metering. Alongside this other leakage control options and pressure management options are not selected from the feasible list, even though they are potentially lower cost. In the final plan Affinity Water should provide greater clarity on the selected water efficiency portfolio.
- A large number of supply-side options are presented in the preferred plan and include several new and existing groundwater options, a new reservoir for delivery after 2050, as well as the water trades described above. It is unclear if these change between preferred and alternative plans and the draft plan does not provide sufficient evidence that the proposed supply-side options are appropriate:
  - Across the options we would welcome greater clarity on the assumptions made in the development of the draft plan. This should include greater detail on the potential risks in deliverability and uncertainty in timing. For example large options carry a number of risks for delivery, which should be resolved early given the lead-times for the construction of support options.
  - The company should ensure that the proposed schemes mitigate any identified environmental issues and are deliverable. For example, we note there are environmental concerns regarding groundwater options in the preferred plan.
  - It is unclear why Affinity Water reduce the import from Anglian Water and replace it with a transfer of water from zone 1 and zone 4 to zone 3. We would expect Affinity Water to clearly justify why this is more appropriate than maintaining the existing trade option from Anglian Water, which is the assumption that Anglian Water has made.

- General statements are provided on the cost estimating methodologies and we have a concern that there are often inconsistencies between the planning tables and the options dossiers (including costs presented by other parties), particularly around capital expenditure. This reduces our confidence in the robustness of the costs presented and requires greater clarity in the final plan. For example:
  - The two third party options selected for late delivery have capital expenditure substantially higher than those presented in the option dossiers.
  - Both the Anglian Water and Thames Water feasible transfer options in the respective planning tables have notably higher costs than that specified in the respective option dossiers for pipelines and treatment.

## 8. Decision making

Affinity Water has adopted an enhanced Economics of Balancing Supply and Demand (EBS D) approach, incorporating Multi Criteria Assessment and Info Gap testing, to develop its plans consistent with the problem characterisation. However, there is limited evidence presented in the draft plan regarding the final decision making process and how the best value plan was chosen across the preferred and alternative plans. Further transparency is also required on deliverability and scenario testing. Further specific comments:

- While there is a large amount of material provided on the decision support tools it is unclear how the final preferred portfolio was selected across the preferred and alternative plans. In the final plan we would expect to see a clear summary that concisely explains how and by whom the preferred portfolio was decided on.
- It is stated that best value plans have been developed. However, greater clarity is required concerning the drivers behind the best value plans and how they influence the option selection. Further considerations:
  - It is not clear from the draft plan whether the differences between the preferred and alternative plan have been assessed against the least cost alternatives for their respective planning conditions. This reduces the transparency of the plan and this comparison should be provided in the final plan.
  - Resilience was included as a criterion to inform the screening of unconstrained options, however, it is unclear whether option resilience was considered at any subsequent stage in option selection and how the options in the preferred programme perform in terms of resilience.

Affinity Water should provide further clarity on the resilience of its chosen options in the final plan.

- It is unclear how the reduction in imports from Anglian Water fits in with the provision of a best value and resilient plan, and more clarification is needed for the chosen final plan.
- It is not clear how deliverability has been considered in the decision making process and this needs to be clarified in the final plan. For example some of the groundwater options may be difficult to deliver while also mitigating risks to the environment.
- Linked to the above point it is not clear what the alternative solutions would be if options are delayed or not progressed. In the final plan greater clarity is required on how the testing of scenarios has influenced the selected options in both the preferred and alternative plan.
- There is evidence of assurance of the draft plan and of engagement with the Affinity Water executive team and the Board during the plan development and its approval. However, given the concerns raised above, greater clarity is needed on how this process has influenced the outputs in the final plan.

## 9. National and regional considerations

Affinity Water has worked closely with the WRSE and WRE regional groups and recognises its potential role as a "regional hub" for water resource cross-boundary schemes and trades. However, significant water imports are only included after 2030 and there is an open question whether more can be done in the near term to seize the opportunity of regional solutions to address its challenge and those of the wider south east region. In particular:

- The draft plan clearly references the company's involvement in both WRSE and WRE. Further considerations:
  - The option types presented in the draft plan and order of selection are comparable with WRSE. This includes the inclusion of the Thames Water transfer which is supported by Abingdon reservoir.
  - We recognise Affinity Water faces continuing uncertainty regarding its requirements. Further or earlier transfers have the potential to impact upon the delivery of major schemes within other company plans. Therefore, Affinity Water should ensure it actively co-operates with other WRSE members in order to produce aligned final plans that benefit the region and its customers as a whole.
  - WRE has not been used to directly inform company planning scenarios because of its differences in approach to supply-demand balance and

delays with the delivery of its regional strategy. For the final plan we would expect Affinity Water to continue to engage with WRE to ensure regional alignment where possible.

- The draft plan references the Water UK national project, including the identification of large scale transfers, however, the company should further clarify how it has informed its decisions in the final plan.