Affinity Water

Draft Drought Management Plan 2022

Statement of Response

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Security Notice

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Executive Summary

This document provides information about the public consultation we have carried out for our draft drought plan. It sets out the representations we received and explains how we are responding to them.

This Statement of Response sets out all the representations which were received on our draft drought plan during the public consultation and explains how we are responding to them. A number of the comments received have resulted in amendments to the plan, and where this is the case, we have explained the changes that we are making. We have also responded to some of the comments without making changes to our drought plan. In all circumstances this document makes clear what we have done and how we have incorporated, or otherwise, comments received from consultees in the updated draft plan.

Our drought plan sets out the operational actions we will take in the lead up to and during a drought, in order to minimise impacts on the environment and maintain water supply to our customers. Our plan is designed to be adaptable to a range of drought events, including events more severe than those experienced in our historic record. The plan covers all eight of our water resource zones (WRZs) across our three regions. This ensures a consistent approach to drought management is taken throughout the business and provides clarity to customers and stakeholders about the actions we will take to manage a drought.

Water companies must develop and publish a new drought plan every five years. As part of this process, we are required to undertake a public consultation on the plan, to give stakeholders, customers, and regulators the opportunity to view and submit their comments on the draft plan. Our public consultation was open for 8 weeks, between 4th June and 30th July 2021, during which time we received 20 representations on our draft plan. The representations were directed to Defra and were subsequently sent to us for consideration.

We received detailed responses on our plan from the Environment Agency and from Natural England, which included several comments referring specifically to the environmental assessment of our drought permit options. We have been working closely with both the Environment Agency and Natural England to agree on the best way forward to resolve their concerns.

We were pleased to receive a number of positive comments on our draft plan, with many of these reflecting the changes we have made to make the plan clearer and easier to follow than previous plans. We also received positive comments in support of our new Environmental Stress drought trigger.

Several of the representations received referred to issues which are not within the specific remit of our drought plan, and these have therefore not resulted in changes to the plan. In some cases, these comments will be addressed by work currently being undertaken for our Water Resource Management Plan 2024, and where relevant this has been explained clearly in our responses. The public consultation for our new draft Water Resource Management Plan will be held in 2022.

Following publication of this Statement of Response, our revised draft drought plan will be submitted to Defra for review. Once satisfied that our updated drought plan has met all necessary requirements (and on advice from the Environment Agency), the Secretary of State will notify us to publish our plan as final.

Glossary and list of acronyms

AMP	Asset Management Period – five-yearly investment period for management of water resources, during which price limits are set. We are currently in Year 2 of AMP7.
Deployable output	Deployable output is a theoretical quantity of water, used in water resource planning, to estimate how much water the company will be able to supply in a given scenario (e.g., the worst historic drought or 1:200 drought). An assumed annual average deployable output scenario for each year is used as the actual conditions in each forecast year cannot be predicted
Drought Order	An authorisation granted by the Secretary of State under drought conditions which imposes restrictions upon the use of water and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis
Drought Permit	An authorisation granted by the Environment Agency under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis
DMP	Drought Management Plan – Operational plan which sets out how the company will deal with a drought situation
DTZ	Drought Trigger Zone – a trigger line for groundwater levels at specific points which indicate stages at which different drought actions need to be carried out
EAR	Environmental Assessment Report – report to support drought permit applications, which investigates and predicts environmental impacts of permits, as well as setting out the associated monitoring and mitigation actions
NEP	National Environment Programme – a programme of investigations and actions for environmental improvement schemes to ensure that water companies meet their statutory environmental obligations
SAC	Special Area of Conservation – defined in the European Union's Habitats Directive, to protect habitats and species considered to be of European interest
SPA	Special Protection Area – a designation under the European Union Directive on the Conservation of Wild Birds
SSSI	Site of Special Scientific Interest – a conservation designation denoting a protected area in the United Kingdom
TUB	Temporary Use Ban – demand management action which temporarily restricts non-essential use of water by customers during a drought (formerly a 'hosepipe ban')
WFD	Water Framework Directive – a European Union directive which commits EU member states to achieve good qualitative and quantitative status of all water bodies by 2027
WINEP	Water Industry National Environment Programme
WRMP	Water Resource Management Plan – 25-year plan which water companies use to plan ahead and manage their water resources
WRZ	Water Resource Zone – the largest possible zone in which all resources, including external transfers, can be shared and, hence, the zone in which all customers will experience the same risk of supply failure from a resource shortfall

1. Introduction

As part of the statutory process for water company drought plans, we have carried out a public consultation for our 2022 draft drought plan. This document explains the methods of engagement we used during the consultation, the representations received, via Defra, and how we have responded to these. It also provides information on how we are updating our plan in response to these representations.

Our drought plan outlines the way we would respond in a drought situation and the actions we would take as it progresses. This drought plan marks a step change in our approach from earlier plans and signals a greater focus on our environmental responsibilities as a key custodian of the local environment in which we serve. This is primarily an operational plan in remit, but it also articulates the vital importance of early communication to mitigate the indicators of environmental stress that tell us a drought may be starting to develop. The actions set out in our plan are designed to limit impacts on our customers whilst safeguarding supplies and protecting the environment. Droughts are complex and their impacts and risks can be difficult to mitigate – we are committed to working collaboratively with our communities to increase understanding and find solutions that deliver the best outcomes for all.

As part of the development of our new draft drought plan, we have worked closely with other water companies in the South East, to ensure our plans are aligned where possible and to share best practice in drought planning processes.

We submitted our draft drought plan to the Secretary of State for the Environment, Food and Rural Affairs for security sign-off on 30th March 2021. On 10th May 2021 Defra notified us that we should publish our plan for consultation. The details of how we carried out the public consultation for our draft drought plan are provided in Section 2.

All comments on our draft drought plan were directed to the Secretary of State in accordance with the Water Industry Act 1991. We are now publishing this Statement of Response detailing the representations received on our draft drought plan and the consideration we have given to these, as well as the changes we have made to our drought plan as a result of the comments received.

We received detailed comments on our draft drought plan from the Environment Agency and Natural England. The most significant of these related to the environmental assessment of our drought permit options, in respect of environmental assessment reports (EARs), and the requirement for Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) processes. We have met with both regulators to discuss their concerns and agree a way forward to resolve these. Please see Sections 2.8 and 2.9 for further information about this.

Some comments received from the Environment Agency and from other respondents stated that we should do more to explain how we would communicate during a drought, not just to our customers but also to stakeholders and other sectors. We will provide more information in our plan about how we plan to do this.

Several the comments received were not directly relevant to the drought plan and were focused on issues better dealt with through the work being carried out for our new draft Water Resource Management Plan (dWRMP), and this is explained in the relevant responses. We have passed those comments on to our WRMP Team to consider as part of their work. Some comments also related to our

business-as-usual operations such as the demand management and environmental enhancement work we carry out, and this has been similarly explained in our responses.

Following publication of our Statement of Response, we will submit an updated version of our drought plan to the Secretary of State. It will then be assessed as to whether we have satisfactorily addressed the comments received on our plan, and whether we have met the requirements of the relevant legislation, Water Company Drought Plan (WCDP) Guidelines, and any supplementary technical information. Once satisfied that our updated drought plan and Statement of Response have achieved these objectives, and taking account of advice from the Environment Agency, the plan will be approved, and we will be notified that it can be published as final.

2. Consultation Process

This section summarises the methods we used to engage with stakeholders and customers as part of the consultation process for our draft drought plan.

2.1 Pre-consultation

As part of the development of our drought plan, we carried out a pre-consultation and invited comment on our proposed approach. We have taken these comments on board. We have also used feedback received during informal engagement and earlier consultations with stakeholders, customers, and regulators to adapt our plan.

Our formal pre-consultation process ran from 25th June until 24th July 2020. We consulted with statutory consultees as well as key stakeholders, including our Customer Challenge Group (CCG), neighbouring water companies, water retailers and local environmental groups. We explained the key changes we were planning to make in developing our new plan and asked for feedback on these. We received a total of nine responses which were taken into consideration in the development of our draft drought plan. Feedback included:

- Support for a more customer and user-friendly plan with the different elements and actions clearly explained
- Support for the greater focus on the environmental impacts of drought
- We should clearly articulate the reasons for how we have chosen and sequenced our drought actions
- The plan should explain how and when we would communicate with our customers about drought and water resources
- It should explain the potential environmental impacts of our drought management actions.

2.2 Public consultation

In accordance with the Environment Agency's Water Company Drought Plan Guidance[1] we published our draft drought plan for consultation on 4th June 2021, inviting views from regulators, stakeholders, individuals, and organisations on our proposals. The period of consultation was eight weeks, which ended on 30th July 2021. All correspondence sent out clearly stated how to comment on the plan, as well as the deadline for submitting representations.

We created a bespoke consultation webpage for our draft drought plan using the online platform Engagement HQ. We signposted the webpage from our main website to let customers and stakeholders know that the consultation was taking place. The webpage included links to download our draft drought plan documents, as well as 'news articles' with background information on the following topics:

- Our environmental ambitions
- Where our water supplies come from
- How we have collaborated with other water companies in the South East
- How our drought plan has changed since the previous plan

Those wishing to make representations on the plan were directed to either submit answers to questions on our EngagementHQ website, or to respond directly to the Secretary of State for Environment, Food and Rural Affairs with their comments. The consultation questions we included are listed below:

1. We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency, and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?
2. We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we will communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?
3. Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?
4. If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do our customers and stakeholders support the use of river support as a drought permit mitigation option?
5. In general, what do you think of the plans we have set out for managing the impacts of drought?

During the 8-week consultation period, the drought plan consultation webpage was visited 786 times. Our drought plan non-technical summary was viewed or downloaded 187 times, and the drought plan itself was viewed or downloaded 78 times.

[1] https://www.gov.uk/government/publications/drought-managing-water-supply

2.3 Non-technical summary

To ensure that the draft drought plan was accessible to our customers and stakeholders, we produced a non-technical summary document. This summary was a 22-page booklet available online and in hardcopy and outlined the key elements of the plan. The summary included:

- What a drought plan is
- How we would monitor water supplies in a drought
- What drought triggers are
- The actions we take to manage a drought
- Our drought permit sites
- How to comment on the plan

2.4 Stakeholders consulted

As per the Guidelines, we consulted with all of our statutory consultees including the Environment Agency, Ofwat, Defra, Natural England, and Consumer Council for Water. We also consulted with the following stakeholders as part of our consultation:

- Retailers and self-supply retailers
- Interest Groups: LRFs, environmental and river groups, environmental charities
- Neighbouring water companies
- Members of Parliament
- Councillors
- Parish Councils
- Council Chief Executives and Environment Heads
- Environmental Health Officers
- Vulnerable customer groups: inc. housing associations
- NHH representative groups

2.5 Retailer webinar

In line with our commitment to work collaboratively with other water companies across the region, the Water Resource South East (WRSE) group as well as Anglian Water held a webinar aimed at engaging with retailers about drought during our draft drought plan public consultations. The webinar was held on 2nd July via Microsoft Teams, and representatives from each of the water retailers operating across the South East region were invited to attend.

During the webinar the WRSE group representatives presented information about water company drought plans in general, as well as how we manage drought planning in the South East. We explained the purpose of drought plans, and the triggers and actions which they set out to enable water companies to proactively manage the risks associated with drought. There was a focus on elements which would be particularly of interest to retailers, including demand management, communications, timing and temporary use restrictions. We also explained how we as a group are working together to align our drought management processes where possible, which ensures less confusion for our customers and helps to improve the effectiveness of drought communications.

The webinar was attended by four retailers, including ADSM and Wave Utilities. Key points raised during the meeting were:

- A question about how Covid lockdowns have impacted water use and demand

- Retailers could help to support when water companies are asking for voluntary reductions in demand
- May be useful to identify high water users before a drought occurs, to enable conversations with them about greater water efficiency with their non-essential water use during a drought
- It is useful for water companies to provide regular and proactive resource updates
- Need to ensure that communications to retailers include a clear call for action

The WRSE companies would like to continue to work with the retailers to ensure that drought communications are agreed between the water companies and retailers for future droughts.

2.6 Representations received

In total we received 20 responses to the public consultation on our draft drought plan. Table 1 shows the breakdown of respondents by sector.

Table 1 : Responses to public consultation categorised by sector

Sector	Respondents
Government Agency or sponsored body	3
Local and regional government	9
Charities and trade associations	2
Voluntary and environmental organisations	3
Individuals	3

We have considered all representations made on our draft drought plan and made responses to each representation individually. We have also explained the changes we have made as a result of comments received in Section 3 of this Statement of Response. The comments that were made in the representations are presented in the next section along with our responses to these. We have included copies of the full responses received for visibility in the Appendices.

2.7 Customer engagement

As part of our WRSE collaborative work we have undertaken an engagement project to consult with customers across the region about our drought plans, with particular focus on drought and demand management communications, and temporary restrictions. The aim of the work was to better understand attitudes and perceptions of droughts, to help develop effective drought communications. The project involved qualitative and quantitative elements to gain a better understanding of customer needs. The qualitative part involved digital group sessions with customers, and this helped to inform the quantitative stage. The outputs of this work have not been finalised at the time this document is being finalised, but we will use the outcomes to help inform the updates to the communications sections in our drought plan, and will explain how we have done that.

2.8 Engagement with Environment Agency

During the consultation process for our drought plan we have engaged extensively with the Environment Agency and Natural England. This engagement has focused predominantly on the requirements for environmental assessment of our drought permit options.

Our drought permit sites have been subject to extensive environmental assessments over several years, and we have developed comprehensive Environmental Assessment Reports (EARs) for each site. The Environment Agency raised concerns about a particular element of the methodology used, which was the utilisation of a hydrological assessment matrix to categorise and screen impacts based on groundwater modelling outputs. We met with the Environment Agency to discuss the issues raised on 5th August 2021 and agreed on next steps to address the concerns. Based on this discussion we are updating the methodology for our EARs. We will meet with the Environment Agency to share the updated methodology and following agreement on this will update our EARs accordingly.

We have also engaged with the Environment Agency throughout the process of developing and consulting on our drought plan, to address questions raised regarding elements of our drought planning process. This has included:

- The selection process for our drought permit sites
- Methodology used for setting our drought triggers
- Determination of the severity of droughts included in our plan
- The processes for selecting our key observation boreholes
- The definition of Exceptional Shortage of Rain (ESoR)

As a result of these discussions, we have carried out additional work to provide further information to the Environment Agency to address their questions, and we are updating our draft drought plan to reflect this. We will continue to engage with the Environment Agency regarding the definition of EsoR, and how this would be evidenced as part of a drought permit application.

2.9 Engagement with Natural England

We have also held discussions with Natural England following receipt of their response to our consultation, to consider and agree on how we would address the concerns they raised. The main issues which were raised by Natural England related to the fact that we did not carry out a Strategic Environmental Assessment (SEA) or Habitats Regulations Assessment (HRA) for our drought plan.

We have agreed with Natural England that we will carry out a formal HRA screening assessment on the nine drought permit options which are listed in our draft drought plan (six in our Central region and three in our Southeast region). The HRA will consider potential impacts on the sites flagged in Natural England's consultation response, as well as any other designated Habitats sites which would potentially be impacted by use of the drought permits. The HRA screening will assess and identify any Likely Significant Effects (LSE) on these sites, and the screening report will inform next steps in the HRA process. This will determine whether the plan can be exempted, excluded or eliminated from the need for HRA. If it cannot, the outcomes will distinguish between the tests at screening and appropriate assessment, and we will report accordingly. We will consult with Natural England and the Environment Agency on the outcomes of the HRA screening process. This is expected to be completed by the end of September 2021; however, we will keep the Environment Agency and Natural England informed if there are any delays in the process.

In line with Natural England's requirements, we will also carry out an SEA for our drought plan. Affinity Water has recently carried out a public consultation on the SEA scoping report which has been produced

for our Water Resource Management Plan (WRMP) 24. The SEA scoping report is comprehensive and considers all WRMP supply option types, which incorporates those used for drought intervention including our drought permit/drought order options. We have therefore also used this consultation as our drought plan SEA scoping stage, and our engagement website has been updated to reflect this.

The outcomes of the SEA scoping consultation will be used to inform the next stage of the SEA process, although these will be carried out separately for our WRMP and drought plan, so each plan will have its own standalone SEA.

We intend that the SEA for our drought plan will be informed both by the SEA scoping consultation, and by the HRA screening process. We therefore plan to commence the SEA work following completion of the HRA screening. We intend to engage with both regulators throughout the process to ensure full visibility on progress, and to agree on expected timescales.

3. Draft Drought Plan Representations and Affinity Water Responses

In this section we list the representations we have received in response to our draft drought plan public consultation. We provide our responses to each of these representations and explain where we are making changes to the draft drought plan as a result.

Note that comments relating to our draft drought plan have been copied into this section directly from the representations submitted to us via Defra. Where representations have included references to any of our production sites, we have redacted these for security purposes. Where our responses include references to production sites, we have used security codes in line with our company security policy.

3.1 Representation from the Environment Agency

The Environment Agency state that the following directions have not been complied with:

Drought Plan (England) Direction 2020	Associated Recommendations
(c) how the sequencing of measures has been designed to limit impacts on customers and the environment.	See recommendation 1
(d) the magnitude and duration of the drought scenarios against which the drought plan has been tested to provide security of supply.	See recommendations 1 and 2
e) the permits, orders and any other authorisations that the water undertaker expects to need in order to implement the drought management measures in its drought plan including mitigation and prevention measures.	See recommendation 1
(f) any pre-application steps agreed to ensure that the water undertaker is able to make any necessary applications in a timely manner to those bodies responsible for granting permits, orders and any other authorisations during the onset, duration and abatement of all droughts covered by its drought plan.	See recommendation 1
(g) the measures that will be used to monitor, prevent and mitigate any adverse effect on the environment resulting from the implementation of drought management measures.	See recommendation 1
(j) how the drought plan is consistent with the water undertaker's Water Resources Management Plan and any voluntary steps that will be taken to collaborate regionally on drought management measures.	See recommendation 3

The Environment Agency has submitted the below recommendations in respect of our draft drought plan. Please note further details and background information on the Environment Agency's representation have been set out in an evidence report which is included in the Appendices of this document.

Recommendation 1 - provide the required environmental assessment, monitoring and mitigation plans and sequence of supply side drought options (linked to Directions 3 (c), 3 (d), 3 (e), 3 (f) and 3 (g))

Affinity Water has completed some work on drought permit applications. It had not completed assessments of environmental impacts, monitoring plans and mitigation options for all its drought permits and orders by the time the draft plan was submitted to Defra. Much of the company's environmental assessment work is still under way. The EARs were provided at the start of the public consultation. This means we still need to complete our review of these reports.
A hydrological matrix screening method has been used to assess the environmental impacts of planned drought permits and orders. This is un-proven for the predominantly chalk streams in the company's Central Region. We have concerns about whether it is a suitable method and provides the correct results. The method has been used to categorise the environmental risks of the drought permit and order sites. We do not have sufficient confidence that Affinity water has:

- fully assessed the potential impacts of drought permits and orders on the environment including protected sites
- developed adequate monitoring and mitigation measures
- been able to select the correct sequence for its supply side measures

Without this information, it is not possible to see if the proposed actions have the correct sequence to protect the environment and water supplies. Some proposed drought permit sites may experience lasting environmental damage if they are used. Without adequate monitoring and assessment information, applications for drought permits and orders may be delayed or rejected.

We recommend that the company works closely with us to revise the method of impact assessment for drought permits and orders. It should agree a work programme and publish this in the statement of response.

We recommend that the company completes the following actions in time for its final plan:

- works with us to agree the method for selecting and categorising the risk to the environment of its planned drought actions
- reviews the hydrological matrix method used to screen environmental risks and provides evidence or an independent peer review to show whether it is suitable to set the sequence of actions
- uses an alternative method to set the sequence of actions if the hydrological matrix is not found to be suitable
- works with us to ensure the EARs allow effective sequencing of the drought permits and orders
- reviews the mitigation measures required at drought permit locations that could have a significant impact on the environment and clearly identifies all the planned mitigation measures in the plan
- reviews, with its legal team, whether it should plan to apply for a drought order if mitigation measures before, during and after a drought are not sufficient to protect the environment.

Affinity Water should allow sufficient time in its plan for the required applications and decisions if drought orders are required

- be fully permit application ready for its planned drought permits and drought orders and is ready for any public hearing that may be requested

Affinity Water Response

We have carried out a significant amount of work as part of the development of the environmental assessment reports (EARs) for our drought permit options, however we acknowledge the need to carry out further work to ensure that all our drought permit options are as close to 'application ready' as possible. As a result of our meeting with the Environment Agency on 5th August 2021, during which we discussed the application of the hydrological assessment matrix methodology, we now have a better understanding of the Environment Agency's concerns about the methodology. We will update the approach used in our EARs to address these concerns. This will ensure that the assessment of the potential impacts on ecological receptors is robust, and that the Environment Agency can have confidence in the outcomes produced. We will share our updated methodology with the Environment Agency and seek their agreement on this before using it to update the EARs. We will also respond to the detailed comments on each of the EARs in this respect individually when these are received. We will continue to work closely with the Environment Agency during this process and will agree a timetable for completing these updates.

We will continue to work with the Environment Agency local area offices to ensure the monitoring plans for each of our drought permit options are comprehensive, and we will respond to the detailed comments on each of the EARs in this respect individually. It needs to be noted that baseline monitoring is already underway for a number of drought permit sources due to the sustainability reduction benefit assessment work that started in AMP6 and is continuing in AMP7. We will incorporate any further EA comments and seek to agree the appropriate monitoring for any drought permit implementation if needed. We will also update the mitigation plans for each of our drought permit options to address any concerns raised by the Environment Agency, and this will be included in the updates to the EARs.

Once the EAR methodology and the EARs themselves have been updated, we will carry out a sequencing exercise to prioritise the list of drought permit options based on level of environmental impact, and we will finalise the prioritisation in agreement with the Environment Agency.

The outcomes of this work to update our EARs, as well as Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) work which we are planning to undertake (please see our responses to the Natural England representation below), will help to inform whether we should consider some of our options as drought orders rather than permits, if significant impacts are identified for any designated sites.

Recommendation 2 – resolve technical issues with determining the severity of droughts and related triggers (linked to Direction 3 (c))

We have several technical issues with the Affinity Water's approach to a number of areas in the plan related to the determination of the severity of droughts. The issues include:

- definition of worst historic drought
- setting of drought trigger levels
- selection of key observation boreholes
- use of river augmentation

More issues may emerge as our technical discussions continue. Affinity Water must resolve these issues so that we have confidence that the company can maintain security of supplies and sufficiently protect the environment. This must apply to all Affinity Water's resources zones for the full range of droughts in the plan.
We recommend that the company continues to work closely with us and resolve the technical differences in these areas. It should agree a work programme and publish this in the statement of response and include the results in the final plan.

Affinity Water Response

Following detailed discussions with the Environment Agency we have provided additional information around the technical questions raised. We have shared this directly with the Environment Agency and included in our Appendices further background information on our drought triggers, key observation boreholes and the definition of worst historic droughts.

Recommendation 3 – clarify the agreements and operation of bulk supplies between other companies during droughts

Affinity Water has shown the agreed quantities for bulk supplies to and from its area but not shown whether these will change during a drought. It is unclear how these will operate and whether there is a risk to security of supplies.

We recommend that the Affinity Water clarifies how bulk supplies with neighbouring water companies will operate during a drought. This should include both timing and quantities.

Affinity Water Response

We work closely with our neighbouring companies to ensure that we have a full understanding of any risks associated with our bulk supply agreements, and we will increase this engagement to proactively manage these during a drought event, to ensure any risks to security of supply can be managed.

We will aim to clarify the operation of any bulk transfer arrangements and where available will provide detail on transfer agreements and conditions during drought events. These will be provided in a table in the appendices of our updated drought plan.

Recommendation 4 – align the levels of service in the drought plan and with the water resources management plan. (Linked to Direction 3 (j))

The level of service of 1 in 100 years for low-risk supply side measures is more frequent than the 1 in 200 year level Affinity Water committed to in its Water Resources Management Plan (WRMP). This applies until 2024 to 2025. Affinity Water may need damaging drought actions to achieve the 1:200 year level of service that is in the WRMP until 2024 when its treatment works is complete.

The 1 in 200 year level of service is not included in the drought plan but the company states that it will be reflected in the annual update of the plan. This creates confusion about the company's level of service. It may lead to delays in agreeing the implementation of drought management actions with regulators and other stakeholders. This is a risk to the environment and the company's security of supply.

We recommend that the company clearly includes the change to the drought level of service to 1 in 200 years by 2024-25 in the table describing the level of service and shows whether it plans to use drought permits to achieve 1 in 200 year until 2024.

Affinity Water Response

We are updating the drought plan to ensure it clearly reflects alignment with our WRMP19 Levels of Service. In terms of drought permits, this means that from 2024 onwards we will be resilient to a 1 in 200 year return period without the need for drought permits and orders. The updated drought plan will clearly explain the change to this Level of Service from 2024 onwards, which is within the lifespan of the new drought plan.

Recommendation 5 – improve communications about the protection of chalk streams and measure their impact

Affinity Water's communication and engagement strategy makes limited reference to the impact of abstraction on chalk streams. This reduces the perceived benefit of the work the company and others are doing to improve sustainability and risks criticism from interested groups. The company's approach to measuring the impact and success of its communications strategy during or after a drought is not fully described. This means opportunities to improve communications about environmental protection and their outcomes will be missed. There is a risk that customers will not play their part during a drought. We recommend that Affinity Water should:

- strengthen the message in its plan about the impact of abstraction on chalk streams and how it will demonstrate its commitment to reduce abstraction
- include the measures and time scale for monitoring and evaluating its drought communication, both during and after a drought

Affinity Water Response

We take our environmental responsibilities very seriously, and we are doing more to ensure this is evidenced in our drought plan. We are updating the draft drought plan to include more information on our environmental ambitions and how we are planning to achieve these. We will strengthen the sections relating to demand management and environmental enhancement, both before and

during a drought event. This includes programmes such as our Save our Streams campaign and our commitment to ending unsustainable abstraction through our Sustainability Reduction Programme. We will also emphasize our commitment to environmental enhancement through our Revitalising Chalk Rivers Programme, as well as our wider catchment management activities which are aimed at delivering environmental benefits.

We will also provide further information about how we plan to monitor and evaluate the impacts of our communication strategy during a drought. Our communications during non-drought periods aimed at reducing per capita consumption year-round are an important element of demand management, and we will provide more information in our updated draft drought plan about this.

The following improvements have been put forward by the Environment Agency in respect of our draft drought plan:

Improvement 1 - set out the engagement with regional groups and non-public water supply users, particularly Water Resources East

Affinity Water has described its engagement with Water Resources South East (WRSE) but has not included its engagement with Water Resources East (WRE) in its plan. Insufficient engagement with WRE may mean that the plan does not align with those of neighbouring companies. This is particularly the case for the implementation of restrictions and possible exceptions.

There is limited reference to non-household users, external groups and emergency organisations in the communications plan. We advise the company to update its draft plan to show how it will co-ordinate the actions consistently with other water companies, non-household customers and water retailers, particularly across Water Resources East. It should show what actions would be taken at each stage of drought.

Affinity Water Response

As a core member of WRE, we are fully committed to supporting its regional planning process and ensuring alignment between regional plans, WRMP and drought plan. We have engaged extensively with WRE and WRE companies over the past two years and will continue to do so in the preparation of our WRMP24 submission. We have aligned data, methods and processes to those of WRE where relevant (i.e. in our Brett region), including developing a consistent methodology for assessing regional options and potential transfers during a drought. Through our engagement and recognising our pivotal role in WRSE and WRE, we have sought to achieve a high degree of consistency across the two regions to facilitate the regional reconciliation process.

We are confident that the modelling carried out for WRE aligns with our drought and water resource planning processes, as we supply our own DO and return period data to WRE for the regional simulator. We are also liaising with WRE with regards to the environmental destination work, and this also feeds into our sustainability reduction strategy.

We include information in our updated drought plan about our engagement and alignment with WRE, along with the WRSE processes.

We have reviewed the potential future demand for water for non-public water supply within our water resource zones (WRZs) using WRSE consistent data sets as part of our WRMP24 programme of work. The data clearly demonstrated that for the most part, non-public water consumption in our water resource zones within the WRSE region is highly distributed and relatively small in scale. Local other sector demand is generally therefore not a significant component of either the regional or national demand within our supply area, nor is it at local scale. The potential to develop such opportunities is therefore limited in scope for strategic scale transfer options. We are working on non-SRO scale non-public water supply side concepts at local scale separately under our WRMP options programme, that work is focused on locally distributed non-public water supply demands and the availability of water within our supply area, which will be reported in due course alongside our draft WRMP.

In terms of demand management and communications with other sectors, we will be providing more information in our updated drought plan about how we intend to engage with other users and stakeholders, as well as emergency organisations during a drought event.

Improvement 2 – refine the approach to reviewing the company's performance and monitoring after a drought

Affinity Water explains the proposed actions and communications with us and other organisations following a drought. The plan could be improved by including the timetable or milestones for the review.
The length of environmental monitoring after a drought is not defined. The sensitivity of the environment in Affinity's area means monitoring the impacts of and recovery from drought is very important. Without a defined timetable there is a risk that follow-up actions and impact of the drought and mitigation measures on the environment will not be known. Opportunities to improve drought management could be missed. We advise that Affinity Water should:

- include clearly defined timetables and milestones for post drought activities
- define suitable lengths of post drought monitoring under a range of drought conditions, and seek agreement with us

Affinity Water Response

Where possible we are including milestones for our key actions following a drought event in our drought plan, including the development of the lessons learned report and the timeline associated with this.

We will work with the Environment Agency to ensure that the monitoring plans set out in our EARs are updated, to ensure that recovery following a drought can be effectively assessed, and this will help to inform our future drought planning activities.

3.2 Representation from Natural England

Natural England's advice on our draft drought plan is summarised as:

- The dDP has not been considered under the Conservation of Habitats and Species 2017 Regulations as amended, known as a Habitats Regulations Assessment (HRA). An HRA has not been undertaken, despite risk to the Lee Valley SPA/Ramsar being identified in the EAR for the FULL, THUN and WHIH options.
- We do not concur with the conclusion that there are no likely significant effects on Habitats sites2. The screening does not identify all the likely significant effects on Habitats sites.
- The dDP has not been considered under the UK legislation by The Environmental Assessment of Plans and Programmes Regulations 2004 SI No.1633 (Strategic Environmental Assessment (SEA) process). The deficiencies in the SEA process are set out in Annex 1, and these should be addressed before the final plan is published.
- EARs are not application ready because an HRA has not been completed, there is a lack of baseline data and effective mitigation has not been identified. Natural England would welcome working Affinity Water to refine these.
- It is not clear whether the dDP has selected options with the least/ lesser environmental impacts in preference to those with greater impacts. This is due to the lack of detail about hierarchical selection based on environmental impacts.

Note that the legislative and policy context for Natural England's advice is set out in Annex 2 of their representation, which is included in the Appendices of this document. The detailed comments and our responses are set out below.

Natural England Advice: 1.1 Habitats Regulations Assessment (HRA)

An HRA has not been included as part of the drought plan or accompanying appendices. Affinity Water has stated that this is because they completed an HRA for their WRMP19, where "All of the actions we are posing within this drought plan were assessed".
WRMP19 contained an unconstrained list of options, and NE previously commented that it was not clear which were being brought forward to the drought plan. None of the drought options were scoped in to an Appropriate Assessment (AA), and supplementary advice to the conservation objectives (SACOs) were not considered during the HRA. Moreover, the RUNGS/RUNL drought option was not included in WRMP19, meaning that this has never been subject to an HRA.
The EARs include a screening stage for "NERC and notable species", "WFD Waterbody status receptors", Statutory and non-statutory designated sites, and "NERC Habitats and Local Wildlife Sites", followed with a more detailed assessment. However, they do not make reference to, or contain an HRA. It is also noted that the EARs for the FULL, THUN and WHIH drought permits identified a potential impact on Lee Valley SPA/Ramsar. This constitutes a likely significant effect, and should therefore be subject to Appropriate Assessment.
For these reasons, the permits are not application ready and the drought plan is not compliant with the legislation.
The HRA should do the following:

- Habitats sites and their interest features should be identified correctly. Affinity Water should determine an area of influence that goes beyond a standard radius, and consider hydrological pathways.
- Likely significant effects should be identified.
- Appropriate assessments must be carried out on all options where likely significant effects cannot be excluded on objective evidence.

- Appropriate assessments must have regards to the relevant sites' conservation objectives and SACOs where these exist. For Ramsar sites the overlapping SACOs and/or favourable condition tables should be used as a proxy.
- Any adverse effects on integrity should be avoided or mitigated so as to remove adverse effects with sufficient certainty.
- An in combination and cumulative assessment should be conducted.
- This assessment should influence selection of the drought option such that the least damaging options are selected first.
- There should be a detailed monitoring plan that reflects site features and supporting habitats.

Affinity Water Response

As discussed and agreed with Natural England, we are carrying out a Habitats Regulations Assessment (HRA) screening process. The HRA screening will consider potential impacts on the sites flagged in Natural England's consultation response, as well as any other designated Habitats sites which would potentially be impacted by use of the drought permits. The HRA screening will assess and identify any Likely Significant Effects (LSE) on these sites, and the screening report will inform next steps in the HRA process. This will utilise much of the information which has already been put together in the development of the EARs and will address the requirement for us to carry out formal HRA screening for the drought plan.

This HRA screening process and subsequent consultation will inform the next steps in the process, including whether an Appropriate Assessment is required for any of the drought permit options. Completion of this process will help to ensure we meet the requirement for application readiness of our drought permits. We will continue to engage with Natural England throughout this work.

Natural England Advice: 1.2 Strategic Environmental Assessment (SEA)

The dDP has not included an SEA. Natural England was not consulted on a screening or scoping report to support this decision. As with the HRA, Affinity has stated that due to having completed an SEA for their WRMP19 where "All of the actions we are posing within this drought plan were assessed", it was not required for the dDP. Groundwater abstractions are listed as projects within Annex II of Directive 2011/92/EU ("the EIA Directive") under '10. Infrastructure Projects'. Therefore, due to options impacting groundwater, an SEA is required, and the water company has not followed correct procedure. See Annex 2 for further details.

Within each EAR (with exception to the RUNGS drought permit option, which has not been subject to an EAR), a monitoring and mitigation plan has been included. However, only one of the nine EARs (THUN) has protected sites which have made it to the "further assessment stage" and have an approach to monitoring and protecting species. This option has not identified any mitigation actions for designated sites.

The SEA should be used to influence the options selected, and the order in which they will be implemented.

Cumulative impacts have been considered within the EARs in regards to other drought options. However, the water company should also identify impacts in combination with existing abstractions, plans and projects, and this should also be done at a strategic level within an SEA.

Affinity Water Response

As discussed and agreed with Natural England, we will carry out a formal SEA to assess potential impacts on protected landscapes in the event of using of our drought permit options. The SEA scoping consultation phase is being carried out in conjunction with this part of the SEA process for our WRMP24, as the scope which has been developed is comprehensive and includes drought permit options.

Once the SEA scope has been finalised following this consultation, we will carry out an SEA for the drought permit options separately to the WRMP. We will engage with Natural England throughout this process. The SEA will fully consider potential cumulative impacts, as well as identifying mitigation actions where required.

The SEA will be informed by outcomes of the HRA screening process, and it will utilise a significant amount of the information which has already been put together through the development of our EARs. We will show how potential environmental impacts have been considered as part of the selection of our drought permit options in the development of our plan.

Natural England Comment: 1.2.1 Protected Landscapes

The plan has failed to comply with the policy and legislation as set out in Annex 2. An SEA should determine impacts on (protected) landscapes, and identify actions to mitigate those impacts.

Affinity Water Response

As explained above, we will carry out a formal SEA to assess potential impacts on protected landscapes, and where necessary identify actions for mitigation of impacts.

Natural England Advice: 1.2.2 SSSIs

The plan has failed to comply with the policy and legislation as set out in Annex 2. An assessment of the impacts on SSSIs has not been conducted within an SEA. Options to mitigate the impacts should be identified.
Within the EARs:

- Designated sites have not been appropriately described, and therefore it is possible that sites have been incorrectly screened out for “further assessment”. One such example is the potential impact of AMER drought permit: within the citation for Hodgemoor Wood SSSI, it is stated that there are “…wetter flushes and muddy rides contain wood sedge, remote sedge and pale sedge Carex sylvatica, C. remota and C. pallescens…”. Moreover, the site is notified for beech and yew woodland, which thrives in damp soils. Due to water-dependent features, the site should be screened in and looked at further. To prevent sites being over-looked, the water company should describe features, protected habitats and species.
- Assessment of designated sites have not been supported by existing data.

- Mitigation has not been consistently presented where potential impacts have been identified. For example, Affinity Water has not identified mitigation for impacts of THUN drought permit's impact on Lee Valley SPA/ Ramsar and Amwell Quarry SSSI.

Affinity Water Response

Potential impacts on SSSIs as a result of the use of our drought permit sites will be assessed through the SEA process, which we will carry out for all drought permit options.

We can confirm the assessment of likely impacts on designated sites as part of the development of our EARs has considered the water dependant features of each site, including those of all SSSIs. The descriptions of the sites in the EARs have summarised the site features so may not always detail all features. We acknowledge for clarity that the Hodgemoor Wood SSSI summary should reference the presence of wet flushes and rides, and this will be amended. We would also note that the groundwater modelling presented in the AMER EAR identifies that the depth to the water table at the Hodgemoor Wood SSSI is 36.9m, and therefore no impacts on the site are anticipated from any groundwater related impacts. The site is also located >1km from the River Misbourne and therefore no impacts are anticipated from surface water related impacts and the site has been screened out from further assessment.

All available monitoring data and site information has been used to inform the assessments; however we would welcome any additional information which may be available in order to further refine the assessment of designated sites.

Where the assessment has identified potential impacts on designated sites regular walkovers would be undertaken during the drought onset period (i.e. prior to implementation of the drought permit) and also during the drought permit implementation period. The walkovers will identify environmental problems which may be associated with the implementation of a drought permit and if that is the case then specific mitigation would be required and would be agreed with Natural England and the Environment Agency.

Natural England Advice: 1.2.3 Biodiversity

The plan has failed to comply with the policy and legislation as set out in Annex 2. The dDP and SEA should identify all the relevant habitats and species of principal importance for the conservation of biodiversity (referred to herein as priority habitats and species). They should take into account the duties to restore priority habitats and species, and determine a monitoring plan for these.

An assessment of impacts on priority habitats and species has not been carried out within an SEA.

Affinity Water Response

As explained above, we will carry out a formal SEA to assess potential impacts on habitats and species of principal importance for the conservation of biodiversity. This will inform any updates required for the monitoring plans which are set out in our EARs for each drought permit option.

Natural England Advice: 1.2.4 Climate Change

The plan has failed to comply with the policy and legislation as set out in Annex 2. There has not been an assessment of impacts of the drought plan which has taken account of climate change. Though the plan has made reference to increased occurrences of drought conditions, and included an environmental stress trigger, the drought plan options have not adequately taken account of the need for wildlife to adapt to climate change.

Affinity Water Response

The drought plan is a short-term operational plan, and the environmental assessments carried out for the drought permit options do take account of potential environmental impacts of using them during a serious drought, the likelihood of which could be exacerbated by the impacts of climate change.

Through our Water Industry National Environment Programme (WINEP) we are investing extensively in reducing the impacts of abstraction and leaving more water in the environment. Our Sustainability Reduction, River Restoration and Catchment Management Programmes will help to improve the resilience of habitats to climate change. For example, our River Restoration programme includes projects that involve removal or bypassing of in-stream barriers, which will help in facilitating migration of freshwater species either up or downstream. Our programme is also seeking to improve floodplain connectivity and create new habitat. This aligns with the Defra objective to make more resilient habitats to support wildlife in a changing climate.

Our environmental stress trigger facilitates reducing demand, as well as the use of AIM targets to reduce abstraction in sensitive catchments during the early stages of a drought. This aligns with the requirements to leave more water in the environment, to enable wildlife to be more resilient to climate change.

The impacts of climate change on our ability to supply our customers have been assessed through our statutory WRMP process, driven through collaborative work with WRSE, which has incorporated detailed scenario modelling work to take account of the potential impacts of climate change on our water resources in the future. In summary our WRMP24 will look to increase both resilience to our customers and environmental resilience by reducing abstractions through the inclusion of the WINEP in our planning, and consideration of the objectives of the Defra 25 Year Environment Plan in all regional planning scenarios.

The impacts of climate change will also be considered as part of the SEA process which we are carrying out for our drought permit sites (see Section 2.8 for further information).

For more information about our ambitions to address the risks associated with climate change in the future, please visit www.affinitywater.co.uk/news/climate-crisis-2021.

Natural England Advice: 1.2.5 Protected species

To be 'application ready' the drought plan Environmental Assessment Reports (EARs) should include a clear, timetabled approach to monitoring and mitigating any protected species potentially affected by options.

Throughout the EARs, priority species have not been properly assessed. Often, the impacts on water-dependent species such as great crested newt are determined to be minor, though hydrological changes as a result are predicted to be significant. Though timing and content of monitoring plans have been included, mitigation has not been explored in depth.

Affinity Water Response

The preparation of the EARs has included full consideration of all species listed as principal importance for the purpose of conserving biodiversity under Section 41 of the NERC Act (2006), species that are protected under Section 9 of the Wildlife and Countryside Act (1981), species listed on the IUCN Red List of threatened species, species previously listed as priorities for conservation action under the UK Biodiversity Action Plan (UK BAP) and the priority fish species listed in Appendix 3 of the Environment Agency Drought Plan Guidance. Where significant impacts are predicted the EARs set out a programme of baseline drought onset, in drought and post drought monitoring and mitigation for these species e.g. this s the case for a number of fish species and water vole. Mitigation would need to be tailored to the specific drought situation experienced at the time of any future drought permit situation and to any impacts identified at the time during walkover surveys and routine monitoring and therefore the EARs set out a basket of mitigation measures to be considered at the time and agreed with Natural England and the Environment Agency rather than a prescriptive timetable.

We will take account of Natural England's detailed comments on the EARs when updating the documents.

Natural England Advice: 1.3 Water Framework Directive Assessment

Comments on WFD are a matter for the Environment Agency and Natural England has no further comments to make.

Affinity Water Response

Noted.

Natural England Advice: 1.4 Draft Drought Plan 2022
1.4.1 Order of options and levels of service

The earlier drought triggers which respond to less significant periods of drought have focused on demand-side drought options, which is appropriate and measured. The water company has clearly outlined and evidenced the environmental and hydrological conditions that will trigger drought options, and explored whether the observational boreholes are appropriate.

The order in which supply side drought options will be used has not been made clear, nor justified based upon level of impact. Though a table of total water abstracted and changes in permitting levels has been provided within the main report, there has not been a comparison of relative damage predicted as result of using the drought permits. Affinity Water has not met the policy guidance provided in Annex 2.

The dDP seems to be planned so that the water company is resilient to a '1 in 500 year' level, and the water company should aim to achieve this by 2039 at the latest. There is some flexibility on this deadline if the local costs of achieving this are exceptionally high when compared to the benefits.

Within the appendices, the plan states that "The level of resilience and volumes required through our selection of drought permits is driven by modelling for our WRMP19". Though the main plan reports that Affinity Water assessed drought vulnerability to 1 in 200 and 1 in 500 year events, Appendix 7 suggests that the drought permits would provide resilience to a 1:200 year return period drought. Affinity Water should be working to ensure that the water company is resilient to a '1 in 500 year' level event by 2039.

Affinity Water Response

We note your positive comments about the appropriateness of our demand-side drought options, and the information provided in our plan about our drought triggers and observation boreholes.

We will consider the comments received from Natural England on our drought permit environmental assessment reports (EARs) when updating these documents. In addition, we are carrying out an SEA and HRA screening process, and once these processes are completed, they will inform the necessary prioritisation of our drought permit options based on environmental impacts. Once these have been finalised we will update our draft drought plan to clearly show the order in which drought permit options will be used, based upon level of impact and in agreement with Natural England and the Environment Agency.

The investment options required to improve resilience to a 1 in 500-year level will be covered in our WRMP, and this will be carried out in line with Defra expectations.

In line with our WRMP19, we are moving towards a 1 in 200-year level of resilience without the need for drought permits by 2024, and this will be explained clearly in our Plan. Beyond this and as we continue to move towards a greater level of drought resilience, this will be reflected in later versions of our drought plan.

Natural England Advice: 1.4.2 Natural capital and resilient landscapes and seas

Affinity Water has introduced an environmental drought trigger to their drought plan. This is welcomed, in order to identify when more water needs to be made available to the environment. The environment will likely show signs of an impact of changing hydrological regimes before customer supply is compromised by drought, so this is a positive step towards meeting legislative requirements set out in Annex 2.

Within the main drought plan Affinity Water has addressed how it intends to improve operational resilience and has reported on existing schemes which aim to increase habitat resilience to drought. However, it would be useful for the water company to conduct a natural capital assessment and explore habitat enhancement options beyond river restoration.

Affinity Water Response

Noted, we appreciate your comments in support of our new Environmental Stress trigger.

Our WINEP programme includes a significant amount of investment aimed at enhancing environmental health and resilience, including our Sustainability Reduction programme, River Restoration Programme, Catchment Management, and our biodiversity work. We will ensure this is explained clearly in our plan.

We are planning to undertake a Natural Capital Assessment within our wider company operations as part of WRSE and our WRMP work, and this will be reported on separately to our drought plan.

Natural England Advice: 1.4.3 Connecting people with nature – demand management

The main drought plan includes the AMP7 leakage performance commitment, presenting an aim of reducing leakage by 20% by March 2025. At each stage of drought (from Environmental drought trigger, to trigger 4), there is an action to enhance leakage reduction. The volumes to be saved are to be confirmed, based upon the amount of leakage at the time of reaching the trigger, so it is not known how successful this will be. Natural England would encourage this to be calculated, even if estimated and theoretical in nature.

Affinity Water has outlined clearly how customer communication will occur to influence demand reduction. Again, there is not an estimate or target of reduction in demand following these measures. This should be estimated based on the success of previous reduction campaigns and inform predicted impacts on the environment.

Affinity Water Response

Where possible we will provide more information on volumes associated with enhanced leakage activity during a drought. In some cases, this will reflect re-prioritising leakage activity to areas of particular drought sensitivity during a drought, rather than an overall increase in leakage reduction

work. This represents a tailored approach to leakage management so it can be adaptive to how a drought develops within our region, and this will be explained in our drought plan.

We will similarly provide estimated values for reductions in demand where possible as a result of our communications campaigns during drought events.

3.3 Representation from Consumer Council for Water

The Consumer Council for Water (CCW) submitted their representation on our drought plan through our bespoke engagement website, in answer to the consultation questions we asked. Their answers to these questions and our responses are set out in the table below.

Consultation Question	Consumer Council for Water comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	It is positive to see that the company is applying the lessons learned from previous droughts, and using these to improve its engagement with customers. We agree that communicating with customers in preparation for a drought, and in a continuous and meaningful way during the drought will increase their awareness of the situation and act as a call to action to reduce their water use. The objectives and methods of communication described in the (draft) Plan seem appropriate and cover a wide range of stakeholders. It is encouraging to see that there are plans for specific communications for household customers, based on the segmentation exercise AFW has been doing for some time now. The Table in section 12 sets out the measures to engage with vulnerable customers. While these seem appropriate in principle, it would be great to see a commitment to provide communications that are tailored to vulnerable customers – not only in their content, but also in terms of the media used. At present, the (draft) Plan does not give a lot of detail as to how this would be done. Finally, something that could be explained better is whether as part of the recent customer segmentation exercises undertaken by the company, does AFW know which type of customers prefer what type of communications and when?

Affinity Water Response

Thank you for your comments. We are aware that it is very important to engage with vulnerable and hard to reach customers, and we will provide more information on how we plan to do this during a drought in our updated drought plan.

With regards to our work on customer segmentation, we are considering how this can be most effectively used to influence how we communicate with our customers. We are currently

undertaking some qualitative and quantitative engagement with our customers, along with other water companies in WRSE, and we will report on the outcomes of this with all the company's segments taken into account. The results of this work will be very informative and will help to shape our communications further.

Consultation Question	Consumer Council for Water comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?	We agree with the proposals on how to communicate with customers in the event TUBs and NEUBs might be needed. As mentioned in the document, it will be important to have clear communications with customers, especially if TUBs are introduced in AFW's region, but not for neighbouring companies. Also, it will be important to clearly explain the exceptions that can apply to some customers during TUBs (i.e. Blue Badge holders on the grounds of mobility). What appears to be missing are actions to engage with NHH customers whose businesses which may rely on hosepipes/large amounts of water to carry out their business activities

Affinity Water Response

We agree that it is essential to have clear communications with our customers in the lead up to implementing temporary restrictions, and we will provide further information about how we intend to do this in our updated drought plan. We will also provide further information in our updated drought plan about how to engage with non-household customers during a drought and before the implementation of any temporary restrictions. Some of this would need to be carried out through the water retailers, and we will engage closely with retailers during a drought to ensure they have the right information they need to inform their customers about the developing situation.

Consultation Question	Consumer Council for Water comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	In our experience, drought tends to impact across company boundaries in the wider southern and eastern regions. In such situations, companies may be impacted to different degrees at any one time but are generally all facing the same developing situation putting increasing pressure on available supplies and the local environment. If drought triggers have not yet been met it will likely only be a matter of time before they are. Given the company patchwork in the south east, it makes communications and customer engagement much easier and clearer if there is a more co-ordinated, consistent approach. That said, if a company has particular demand challenges in "hot spot" areas a more targeted approach may be necessary to ensure all customers continue to receive reliable service.

Affinity Water Response
We note your comments about either using co-ordinated or localised approaches to communications depending on the developing drought situation. Our drought plan is designed to be adaptive to enable consistent communications across the region where possible, to avoid confusion for our customers, whilst also facilitating targeted messaging where needed in areas experiencing a greater level of drought vulnerability. An explanation of how droughts can affect our water supplies differently and how this can have an impact on communications and implementation of restrictions is provided in Section 2.2. of our drought plan. More information about our approach to engagement is provided in Section 12 of our drought plan.

Consultation Question	Consumer Council for Water comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?	In general, we would agree with the use of river support as a drought mitigation option – not only to protect the environment, but also to ensure that services are more likely to remain reliable for customers. Even if river support is used as a drought permit mitigation option, we trust that AFW will continue to engage with its customers to explain the reasons for the possibility of using the drought permit and the actions customers can take to continue to reduce their water use to help protect the environment and their own water supplies.

Affinity Water Response
We note your comments about the use of river support, and in the event of needing a drought permit we would be engaging extensively with our customers about the reasons for needing to do so, as well as the importance of reducing their water use.

Consultation Question	Consumer Council for Water comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	The draft drought plan set out by AFW is very positive as it links drought actions to protect supplies for customers, the actions needed to protect the environment and how customers can help (primarily by reducing their demand). Also, it is reassuring to see how AFW is working with neighbouring companies (that are also part of Water Resources South East) to ensure, as much as practically possible, a consistent regional approach. The document also sets out the challenges faced by the company – not only due to climate change, but also due to the unique environmental characteristics of the region, including the chalk streams. It is

reassuring to see that the (draft) Drought Plan also mentioned the link between this plan and other regulatory plans, as well as the need for additional investment to improve the levels of service. Although intended for different audiences, the documents (main plan and non-technical summary) are easy to read and have the right level of information and explain in a clear, and sometimes graphic manner, the actions the company will take in preparation for and during a drought. One aspect that is particularly encouraging is the constant effort from AFW to engage with its customers and reinforce the message that their actions (water use) can affect the environment, and that changing their behaviour will have a beneficial impact for all. Finally, and as a suggestion, it would be great if the 'lessons learned report' (following a drought) included a section that looks at customer contact. If droughts were to become more frequent/prolonged, companies will need to be prepared to deal with potential increases in customer contact. It would be useful to record and analyse the nature of the contact as this can help to inform future company plans. This can also help to understand whether the drought and/or related measures have had an effect on the company's complaints performance and revise/reconsider any elements of the company's drought management plan that may have caused these.

Affinity Water Response

Thank you for your positive comments in support of our draft Drought Plan.
We do keep a log of customer contact which is reviewed following a drought in the development of our lessons learned report. In the most recent case of reviewing the dry weather event from 2017-2019, this helped us in the review of our drought triggers, as we were better informed about when and where we can expect customer and stakeholder contact to start increasing. We can therefore more proactively address their concerns, before they could potentially escalate into complaints.

3.4 Representation from Essex County Council Green Infrastructure Team

Essex County Council comments

- The Draft Drought plan should mention the importance of integrating Green Infrastructure as a mitigating measure to help address or mitigate drought/ water stress.
- The South East of England has been designated as an area of 'serious water stress' and Green Infrastructure (GI) could be utilised to help reduce this;
  - Tree planting can help capture stormwater and recharge groundwater supplies
  - Rainwater harvesting can help reduce water demand and this can be included as part of GI. As much as 75 percent of the rainfall that lands on a rooftop can be captured and used for other purposes.

- GI can also help to capture rainwater and also to recharge groundwater supplies through infiltration.
- Green roofs should be encouraged as part of new developments and somewhere between 40 and 80 percent of the total volume of rain that falls on green roofs can be retained. Green roofs can also facilitate a more gradual release of the water.
- Rain gardens can be used in a variety of settings – such as streets, rooftops and schools. These will generally be through plantings in a shallow basin. In addition to allowing evapotranspiration of rainfall or allowing it to slowly filter into the ground, rain gardens help recharge underground aquifers, keep stormwater from reaching waterways, provide habitat for wildlife, and can beautify a street or yard. In an analysis of Seattle area rain gardens, researchers estimated that each one can filter as many as 30,000 gallons of stormwater a year.
- In areas where space is more limited planter boxes can be used to allow runoff to enter and be absorbed by vegetation and soil.

- Working collaboratively with catchment partners and key stakeholders to incorporate green infrastructure, such as schools, can help reduce water demand and manage water resources providing long term benefits to help reduce water scarcity.
- New developments provide an excellent opportunity to help capture rainwater at source through the incorporation of Green Infrastructure and can help reduce water demand through water re-use. This should be encouraged as part of any new development.
- GI implementation strategies like rainwater harvesting and infiltration facilities increase the efficiency of water supply systems, thus reducing strain on our groundwater aquifers.
- Green Infrastructure can also be used as part of SuDS as a hierarchy priority i.e. soft landscaping- this is referenced within our Essex suds design guide - https://www.essexdesignguide.co.uk/suds
- A number of Local Authorities in Essex have declared climate emergencies and have started to produce climate action plans and a number of Green Infrastructure Strategies that promote the delivery of multifunctional Green Infrastructure to provide a number of benefits such as mitigating and adapting to climate change (including drought). Essex has an independent Climate Action Commission that has identified a number of recommendations, including the use of land management and green infrastructure. I would also highlight two key strategies:
  - the Essex Green Infrastructure Strategy, 2020 (https://www.placeservices.co.uk/resources/built-environment/essex-gi-strategy/)
  - South Essex Strategic Green and Blue Infrastructure Study, 2020 (https://ca1-jsp.edcdn.com/downloads/South-Essex-Strategic-Green-and-Blue-Infrastructure-Study.pdf?mtime=20201223111609&focal=none

Affinity Water Response

We are aligned with the need to reduce demand for water across our region, and this is explained in Section 4.2 of our drought plan. We acknowledge that the use of integrated water management systems such as through green infrastructure projects can be a useful tool in demand management, however as a water supply only company we have limited options to implement this. We are engaging with Local Planning Authorities across our region to ensure that their Local Plans incorporate requirements for all new developments to achieve water efficiency objectives of 110 litres per person per day.

3.5 Representation from Kent County Council

Kent County Council Comment

Kent County Council (KCC) is grateful for this opportunity to comment on this draft Drought Plan of Affinity Water (AFW).

AFW supplies water to nearly 15% of the Kent land area, covering most of Shepway District, nearly half of Dover District and a small part of the Canterbury City Council area. These services are vital to the economy and environment and to the health and wellbeing of people. We therefore look to AW to provide high standards of service, including during periods of drought.

Overall, the plan is extremely clear and well presented. Section 2 entitled 'What is a Drought?' provides a very useful background to water resources and the nature of droughts and it explains clearly how they can affect the environment and agriculture as well as water supply systems. This is very important as droughts are seldom experienced by water customers and it can be difficult to maintain their awareness of the risks they pose.

Affinity Water Response

We appreciate your comments in support of our draft drought plan and welcome the views that the plan is informative and well presented as we intended.

Kent County Council Comment

Section 3 gives a very clear overview of the organisational responsibilities for drought planning, where AFW sits within that, and how the company collaborates with other organisations and regional and national groups such as WRSE and the National Drought Group. This section also explains the relationship with other AFW plans, notably the Water Resources Management Plans and the Emergency Plan, but a useful addition would be to also explain the relation with earlier Drought Plans. We understand that AFW has to follow Environment Agency guidance on the timetable for consultation and publication of its drought plans but the timing of the production and revision of these plans is becoming rather unclear: The current drought plan was consulted on in 2017 and covers the period 2018 to 2023; following an additional consultation it was revised in 2019; and we are now being consulted on a new drought plan that starts in 2022 – a year before the current one ends. These plans are said to cover a 5year period but this is the third time KCC has been consulted on drought plans in the last four years. With five water companies each covering part of Kent, it is becoming difficult to know which consultation documents to focus our limited resources on.

In future, it would be clearer if drought planning were to form part of water resources management plans, though we understand that this may be a matter for the water industry regulators rather than AFW.

Affinity Water Response

We apologise for any confusion caused by the fact that our latest consultation is happening sooner than expected, and we appreciate that you have taken the time to review and provide comments on our latest plan. Although water company drought planning cycles are typically five years, the latest Government Drought Plan Direction published in 2020 instructed that all water companies in England must submit their new draft drought plans to the Secretary of State by 1st April 2021, and subsequently carry out public consultations on their plans. This has ensured that all water companies are now aligned in their drought planning cycles, and this has helped to facilitate greater collaboration between companies across our region in developing our drought plans.

Following publication of our new drought plan in 2022, we expect that we will not need to produce a new drought plan until the next five-year cycle. We will carry out annual updates of our plan if necessary, however these should not require any additional consultation periods.

Kent County Council Comment

We are particularly pleased to read that AFW has tried to align its drought triggers and actions with other companies in the southeast as this can help to ensure that the public receive clear and consistent messages during drought events.

Regarding the drought trigger levels, the actions to be taken in a drought, and the approach to communications, we are supportive of what is presented in the document.

Affinity Water Response

We appreciate your comments in support of our drought triggers, actions and proposed approach to communications.

Kent County Council Comment

In Section 13 and Appendix 8 drought permits are explained and the environmental impacts that expected from the additional 7.5Ml/day groundwater abstraction from the Dour catchment. It is pointed out that this would have little or no local environmental impact because the river in that location is ephemeral and would already be dry at that location during a drought and the only impact identified is that rewetting of that river reach might be delayed after a drought. However, we are concerned that this seems to focus only on risks to the nearby river reaches and may overlook the possible impact the abstraction might have by contributing to the drying up of the river further downstream and to increasing coastal saline intrusion. These potential impacts are not mentioned.

Affinity Water Response

Our drought permit options in the Dour catchment have been extensively investigated in terms of their potential environmental impacts. These assessments have incorporated knowledge of how the aquifer functions in this area, including data from the relevant groundwater body monitoring points. During a drought situation and in the lead up to potentially requiring a drought permit, we would carry out enhanced environmental monitoring and engage closely with the Environment Agency to increase our understanding further of the potential impacts of using the drought permits, and this will include monitoring of the groundwater body. Saline intrusion is considered unlikely as a result of using these drought permits, however the monitoring will give us an early indication should a risk materialise so these can be proactively managed.

Kent County Council Comment

We appreciate that, in order to minimise the environmental impacts, much effort has gone into identifying drought permit sites that would be least affected by these abstractions, and that from 2025 the new 1:500 year level of service would mean that reliance on these abstractions would be a very rare occurrence. But, notwithstanding the steady, incremental improvements to drought planning process and methodology, the water industry approach appears to be increasingly out of touch with some of our most pressing current problems – it is still entirely focused on protecting public water supply, albeit with least harm to the environment, and it is hard to see how this contributes to today's big challenges such as nature recovery.

Affinity Water Response

We recognise that we have a role to play in the protection of the environment and as a business have reflected this in our environmental ambitions. Through our WINEP we are investing extensively in reducing the impacts of abstraction and leaving more water in the environment, alongside our catchment management, river restoration and biodiversity programmes which all aim to support nature recovery.

Our WRMP24 will look to increase both resilience to our customer supplies and environmental resilience by reducing abstractions, and consideration of the objectives of the Defra 25 Year Environment Plan in all regional planning scenarios. We are planning to achieve a 1 in 200 year return period resilience without the need for drought permits from 2024, and will work towards a 1 in 500 year resilience through our next WRMP process.

For more information about how we are planning to meet some of the key challenges we face, please visit https://www.affinitywater.co.uk/news/climate-crisis-2021.

Kent County Council Comment

There appears to be no mention within the plan of other water users who abstract directly from the environment. There are clear inter-dependencies as these water users may well have to revert to

mains water use if their own source dries up, thereby putting additional strain on AFW's network. And they might also be able to support AFW in a drought if they still have water available.

Affinity Water Response

As part of our current WRMP24 and WRSE programmes of work we are required to review multi-sector needs for water across our region. This has involved assessing demands of non-public water consumption in our area, and potential options to support those users if required. The data clearly demonstrates that for the most part, non-public water supply consumption in our regions is highly distributed and small in scale. The potential to develop new multi-sector opportunities is therefore limited in scope. Despite the limitations and lack of new opportunities coming forward directly via WRSE for Affinity Water, we are progressing with a number of supply-side concepts, which will be reported on in due course alongside our draft WRMP.

3.6 Representation from Uttlesford District Council

Uttlesford District Council Comment

1. The programme of proactively contacting people to reduce water usage in the event of a Drought Trigger event goes against the aim of reducing water use in general (see point 4 below)

Affinity Water Response

We aim to help our customers to reduce their water use in general, and during a developing drought situation we would escalate our messaging to communicate the increased need to save water. We will provide further information in our updated drought plan about how we will escalate our communications as a drought event develops.

Uttlesford District Council Comment

2. In the event of Drought Trigger 2 you would accelerate the works to reduce water leakage. What measures are in place to step up this programme in an emergency and short space of time? Do you have the operational capacity to achieve this? If not then it would be difficult to avoid tipping into a Drought Trigger 3 situation which would contain severe and lasting / borderline irreparable ecological damage.

Affinity Water Response

Reaching drought trigger 2 would not at this stage constitute an emergency, and our water resource predictions would indicate when we are likely to approach this trigger, which will help to inform when we should start preparing to adapt our leakage activity to the drought situation. One of the key activities of our Drought Management Group, which would be formed at the onset of a drought, is ensuring that we have appropriate resource in place to action any necessary

measures. This would include securing resources required to undertake enhanced leakage activities.

Note that the continued progression of a drought such that we reach drought trigger 3 would not be influenced by our leakage activity, as a drought is predominantly caused by lack of recharge. Further information on how droughts develop is provided in Section 2 of our drought plan.

Uttlesford District Council Comment

3. You note that "We will also reduce our abstractions in chalk catchments by 27 megalitres a day (Ml/d) by 2025." Does this include forecast changes in land use / development or is this from the 2021 baseline?

Affinity Water Response

Our current Water Resources Management Plan (WRMP19) sets out how we will balance supply and demand across our supply area. This takes into account both our planned abstraction reductions and future housing and population growth. The 27 Ml/d reduction by 2025 relates to our AMP7 performance commitment. This performance commitment is based on the amount of water we have to reduce our deployable output by to meet WFD objectives. Our AMP7 business plan and WRMP includes abstraction reductions totalling 36Ml/d across our Central and East regions, and we will update our drought plan to reflect this volume. We are also investigating strategic resource options (SROs) through our WRMP24 programme which will enable us to meet the additional demands resulting from new development whilst meeting our commitments to reduce chalk abstraction.

Uttlesford District Council Comment

4. You note that "The South East is a severely water stressed region, so we work with local government to ensure that all new developments are designed to meet the best water usage standards. We want to help the people in our communities use water more sustainably and we run customer awareness campaigns and fit water meters to help achieve our aim of reducing per capita consumption (PCC) to 132.6 litres per person per day (l/p/d) by the end of AMP7."

   4a) How do you intend to work with LPA planning departments? Will this be an active push, or advisory letters in response to development applications?

   4b) Is there not an aim to achieve 110ltr per person per day, rather than 132.6ltr?

   4c) There is no mention of rainwater harvesting – this could considerably reduce domestic water consumption by up to 1/3, just by replacing mains water with rainwater for flushing toilets and washing machines. What is the Affinity Water position on rainwater harvesting?

Affinity Water Response

We hope that creating sustainable communities should be a priority for local authorities and developers, and water efficiency is a fundamental element of this. We are engaging with Local Planning Authorities (LPAs) through the development of their Local Plan and Infrastructure Development Plan processes, to ensure that their plans incorporate requirements for all new

developments to utilise water efficient fittings and fixtures, and where possible to consider the wider water environment. Therefore, for any new developments we ask that LPAs encourage the incorporation of water efficient features such as rainwater harvesting, rainwater storage tanks, water butts and green roofs as appropriate, and this is reflected in our engagement with LPAs on their plans for growth and development.

Our goal is to achieve 132.6 litres per person per day by the end of AMP7. We have long term aims of reducing our per capita consumption (PCC) even further to 120 litres per person per day, and this will be reviewed as part of our WRMP process.

We support the use of integrated water networks, however as a water only supply company we have limited options to implement this ourselves. We are looking into potential opportunities for collaborating with wastewater companies who operate in the areas we supply, to assess the potential for collaborating on potential initiatives in the future.

3.7 Representation from Broxted Parish Council

Consultation Question	Broxted Parish Council comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	Seems about right

Affinity Water Response
Noted, thank you for your comments.

Consultation Question	Broxted Parish Council comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to	No issues with these.

implement restrictions, have we got it right?	

Affinity Water Response
Noted.

Consultation Question	Broxted Parish Council comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	Regional.

Affinity Water Response
Noted, we will consider a regional approach to communications where this is possible during a drought event.

Consultation Question	Broxted Parish Council comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?	No - risks significant damage to rivers.

Affinity Water Response

Noted.

Consultation Question	Broxted Parish Council comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	They do not involve (or maybe just don't mention) any plan to reduce leaks from your pipes. Also as a long-term solution you should try to avoid having development (housing estates etc) take place in areas where water supply cannot be enough. You should be a statutory consultee on housing development so that local planning authorities must take water supply and drainage into account. If you cannot be a statutory consultee, there is nothing to stop you contacting local planning authorities to give your views on major and minor planning applications. This would help to reduce the number of households on new developments which discover that they have inadequate water pressure. By then it is too late to modify building plans. There are also communities which find, as a result of local developments, that they become short of water on a regular basis. Such problems should be foreseeable and should be included as part of your consultation and communication with local planning authorities. This would reduce the need for drought permit options which can only be a temporary solution.

Affinity Water Response

Our drought plan does include actions to change the way we manage leaks during a drought in Section 7.3. We have an ambitious leakage programme and targets as part of our business-as-usual activities. During a drought we would aim to enhance these, and an element of this would be to target leakage activities in areas which are sensitive to the impacts of drought.

Although we are not a statutory consultee for local planning applications, we are engaging with Local Planning Authorities across our region to ensure that their Local Plans incorporate requirements for all new developments to achieve water efficiency objectives of 110 litres per person per day. We manage the additional requirements from housing development by planning for growth through our WRMP process, which identifies large scale and strategic solutions to ensure we can meet the additional demand.

If you have any ongoing concerns about water pressure in your area, we would be happy to meet to discuss this. Please feel free to get in touch with our Corporate Affairs Team on publicaffairs@affinitywater.co.uk.

3.8 Representation from Chalfont St Peter Parish Council

Chalfont St. Peter Parish Council Comments

1. The Committee welcomed the Action Plan.
2. A Drought Prevention Plan should also be considered;
3. Better Communication and general public education including in schools for example should/ could be pursued explaining smarter and efficient water usage and how to use less water;
4. It would be beneficial to monitor current water resources available vs. average consumption;
5. It should be considered the impact of additional extraction and rivers drying out on the ecosystem (loss of wild life, food chain imbalance/ insect life/ natural habitats);
6. It should be considered looking into Climate Change and Sustainability Impact on water resources;
7. Water meters are essential and should be put in all new houses.
8. Our Committee is concerned that HS2 works will impact on the supply and quality of the water supply in our area.
   We believe the Environment Agency should make those reports/ studies on HS2 works impact on local water available to the public.

Affinity Water Response

1. Noted.
2. Droughts are naturally occurring events which occur through lack of rainfall. It is therefore not possible to prevent them from happening, which is why it is so important for us to have effective drought plans in place for when they do happen.
3. We agree that education and communication are essential elements in explaining the importance of using less water, and we have an extensive programme of demand management to help our customers use less water.
4. We regularly update our website with information about our water resource situation, and this can be found here: https://www.affinitywater.co.uk/my-water/water-resources. Our figures for customer consumption are published as part of our annual reporting. We monitor both our water resources and levels of demand throughout the year.
5. Our new Environmental Stress trigger is designed to reflect times when the environment is suffering from low flows, before water supplies become affected. We also have an extensive programme of Environmental Enhancement which aims to ensure that local ecosystems are more resilient to events such as droughts. We will provide more information about the important environmental work we do in our updated drought plan.
6. Our WRMP process considers and plans for the potential impacts of climate change on water resources, and information about this will be shared when we publish our draft WRMP24 for consultation.
7. We plan to install 200,000 water meters over our AMP7 period (2020-25) and will continue with our metering programme in the next planning period, subject to funding agreement from our regulator Ofwat.
8. We are working closely with the Environment Agency and the HS2 construction teams and carry out the necessary due diligence prior to HS2 activities that may impact our operations and our public water supply sources. We will continue to work with both HS2 and the EA beyond the completion of HS2 construction in order to monitor where necessary the short-, medium- and long-term impacts of the work.

3.9 Representation from Colney Heath Parish Council

Colney Heath Parish Council Comments summary

Summary
CHPC support the general process but raise concerns about:-
Need for an upper Colne drought management plan to maintain minimum water levels and flows to protect the remaining flora and fauna.
Impact on Colney Heath Common due to low river levels.

- More frequent loss of water flow river Colne in the summer.
- Drying up of deep pools in hottest summers which from observations have been critical in supporting wildlife during drought.
- Loss or reduction in distribution of species within the area.
    - o Water Voles (could be due to predatory species - mink)
    - o Kingfisher
    - o Native crayfish
    - o Flora (4 species) as recorded in Colne consultation report November 1997 (Environment Agency)
    - o Could be others spp. but do have data.
- Need to up to date monitoring.

Need for multi-agency response to protect and maintain river flows.
Maintenance of drainage network to avoid rainwater being diverted into sewer network.

- Planning and design policies to protect existing water courses and flows into the river network.
- E.g. Land at Roundhouse Farm - blocked drainage ditches by poor maintenance and development over the network. Restrictions in the use soakaways due to close proximity to pumping stations, so all rainwater is to be diverted into the sewer network thus reducing river flows.
- Number water extraction points within or near the parish significantly
- reducing ground water levels [redacted] and [redacted],
- [redacted] Hatfield.
  Demand on the water supply due to increased development along the A414 (50,000 new homes) over the next 25 years all the groundwater comes from the same aquifer.

Affinity Water Response

See below for detailed comments with our responses.

Colney Heath Parish Council Comments

Current state

Colney Parish Council understands that chalk streams do dry up in some summers, but situation on the upper Colne has been more frequent and more serve over the last 25 or so years. The more frequent hotter summer appears to be having a significant negative impact in the upper Colne area. But as the information is well out of date the actual current state is not fully known.

The parish council has over many years has raised the issue of water flows in Colne and the harm to wildlife in the area (letter from CHPC dated January 1998).

We note that schemes (Alleviation of low flow) have been implemented elsewhere in Colne Valley, but they are all either downstream or in feeder rivers to the Colne

Impact on Colney Heath Common

- More frequent loss of water flow river Colne in the summer.
- Drying up of deep pools in hottest summers which from observations have been critical in supporting wildlife during drought.
- Loss or reduction in distribution of species within the area.
    - o Water Voles (could be due to predatory species - mink)
    - o Kingfisher
    - o Native crayfish
- The Colne consultation report November 1997 (Environment Agency) records notable species
    - o marsh foxtail Alopecurus geniculatus (declining Hertfordshire),
    - o opposite leaved pondweed Groenlandia densa and
    - o cyperus sedge Carex pseudocyperus both uncommon in Hertfordshire all recorded at Colney Heath.
- Rigid hornwort Ceratopgyllum demersum is uncommon in Hertfordshire but has been recorded sparingly from upper Colne.

Could be others spp. but do have data. No up-to-date information, the most recent studies are now at least 25 years out of date, so up to date surveys and monitoring will be required.

Future

Colney Heath parish council supports the need for a drought management plan but would request the need for it to be multi agency approach.

The drought plan together with other agencies needs to protect water supplies, manage water extraction in the area while maintaining water flows into the upper river. The protection and maintenance of existing water courses will play a significant part but planning policy within the area will also have significant role.

Draft Drought Management Plan 2021 Affinity Water -
We recognise the environmental pressures that these precious chalk catchments face, and we are committed to continuing to work with partnership organisations to protect water ecosystems, improve river habitats for wildlife and enhance biodiversity at our sites and throughout our regions.

Working in partnership with the Environment Agency, our Revitalising Chalk Rivers Programme (which includes the Rivers Ver, Lea, Mimram, Misbourne, Gade and Beane), has been expanded in the current five-year planning period (AMP7) to include the Upper Chess, Bulbourne, Colne, Ivel, Cam, Brett and Dour. The programme has thus far reduced groundwater abstraction and implemented river restoration works to improve over 120km of chalk streams.

The parish council notes the inclusion the Colne current five-year plan and hopes this will include the upper Colne area surrounding Colney Heath parish.

Affinity Water Response

We will provide more information in our updated drought plan about our extensive programme of environmental enhancement work that we are delivering under WINEP. This includes river

restoration, catchment management and biodiversity improvements. We have worked with the Environment Agency to identify the areas to be included in WINEP during each AMP

Our Catchment Management Programme includes activities in the Upper Colne which are aimed at improving water quality in the catchment. We are also trialling options for alternative agricultural land use which could provide benefits for water quality and biodiversity in the future. In preparation for the next periodic review (PR24) and business plan submission we will be working with the Environment Agency to identify potential new areas for environmental enhancement work and have noted your concerns.

Colney Heath Parish Council Comments

Need for multi-agency response – protecting and maintaining flows in upper Colne.

Maintenance of drainage network to avoid rainwater being diverted into sewer network.
Many of the existing drainage ditches both highway (HCC and Highways England) and agricultural are currently poorly maintained making them unsuitable for surface water drainage resulting in some sites alternative drainage method being required. Planning and design policies to protect existing water courses and flows into the river network.

Large areas within Colney Heath are Drinking Water protection zones therefore restricting the use of soakaways in new developments. If no suitable drainage ditches are available, then the surface water is diverted into the sewer network. Many of drainage ditches in the area are in a poor state of maintenance which was highlighted in a recent planning inquiry on Smallford Works site when HCC deemed the local ditches were unsuitable for surface water. The diversion of surface water away from drainage ditches then into the local river or aquifer in dry weather is making the situation worst by bypassing the upper River Colne.

The upper Colne area around Colney Heath is near the source of the river so has a significant impact on water flows downstream, it must be also noted that area also has significantly lower rainfall than other parts of Colne Valley (map 2. 2)

Affinity Water Response

Drinking water protection zones are defined by the Environment Agency, and they are important for ensuring risks of contamination from new developments are minimised. We are a water supply only company and we are therefore not responsible for maintenance of the drainage or sewer networks; however we do support a multi-agency approach in managing water systems where possible in our area.

Colney Heath Parish Council Comments

Land at Roundhouse Farm (Bullens Green Lane) Planning application -
Blocked drainage ditches by poor maintenance and development over the existing ditch network resulted them being unsuitable for surface water drainage so alternatives had to be considered. The restrictions in the use soakaways due to close proximity to [redacted] pumping station and its source protection zone resulted all rainwater from the site will be diverted into the sewer network rather than support the river flow. While this is small area if repeated across the wider area would have a significant impact on river flows.

These factors are all significantly impacting upon summer river flows.

Affinity Water Response

We acknowledge your concerns, however as mentioned above we are a water supply only company, and therefore have no control over maintenance of drainage systems. We are in the process of reviewing protection measures for source protection zones in relation to surface water drainage, and will be advising local planning authorities once these are agreed. We will communicate with Colney Heath Parish Council directly regarding the most appropriate authorities to contact for the issues raised here.

Colney Heath Parish Council Comments

Number water extraction points within or near the parish significantly reducing ground water levels - [redacted] Hatfield.

Increased reliance of Colney Heath pumping stations due to Bromate plume in St Albans-Hatfield area with [redacted] pumping station being used to purge the aquifer of contamination.

Risks to water supply and then river flows resulting from Bromate plume in the St Albans Hatfield area. The parish council are concerned that if the new area at Ellenbrook is given planning consent for mineral extraction the risks to the water supply are fully understood. If it was to spread additional contamination into the aquifer would then increase the demand on the Colney Heath pumping stations which in turn would impact negatively on river flow rates.

The parish council notes that number of pumping stations downstream including [redacted] have been closed and would question if this adding to the burden on the upstream pumping stations.

Demand on the water supply due to increased development along the A414 (50,000 new homes) over the next 25 years all the groundwater comes from the same aquifer.

The resulting demand for water needs to be considered in advance rather than resolving problems the harm caused at a later stage.

While its not drought plan issue any management plan will be to consider a flood management on dwellings surrounding Colney Heath Common.

Affinity Water Response

Note that the output lost from our HATF source has been replaced by a new source, and therefore there is no volumetric impact on drought deployable output (DO). The bromate plume is an ongoing incident which is being managed, and is not related to our drought management process.

Regarding the Brett quarry proposal, we have carried out extensive discussions with all relevant stakeholders, we acknowledge your concerns; however this issue is not relevant to our drought plan.

We assess requirements for additional supply as a result of growth in our area through our WRMP process, and we are investigating strategic resource options (SROs) through our WRMP24 which

will enable us to meet the additional demands resulting from new developments, whilst meeting our commitments to reduce chalk abstraction in the area.

3.10 Representation from Great Missenden Parish Council

Consultation Question	Great Missenden Parish Council comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	We Great Missenden Parish Council, having considered the Draft Drought Plan you sent us for consultation on 9 June 2021 have agreed [unanimously] on the following response: * We applaud your recognition that this is a issue that needs to be addressed and the structured way in which you have done so. * We hope that both we and the public will be kept informed of your success in keeping to this plan in future years.

Affinity Water Response

Noted. Thank you for your comments.

Consultation Question	Great Missenden Parish Council comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?	We are, in general, supportive of the introduction of fully metered supply provided that steps are taken to protect those in social deprivation and/or with needs for above average usage.

Affinity Water Response

We are working towards achieving targets set out in our ambitious metering programme, which will aim to install over 200,000 water meters during the AMP7 period (up to 2025). We have a programme in place to offer support to our vulnerable customers where needed. It should be noted that charging mechanisms are set as part of our business planning process rather than the drought planning process and Ofwat, our economic regulator, considers these plans.

Consultation Question	Great Missenden Parish Council comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	We share your particular concern for the chalk streams in Buckinghamshire, and particularly for the Misbourne that runs through our parish. This we value both for its wildlife and for its amenity value. * We have further concerns related to the affects on water tables and flows that the excavations for HS2 are reputed to be about to have that may render caution and care for these streams more important.

Affinity Water Response
We are working closely with the Environment Agency and the HS2 construction teams and carry out the necessary due diligence prior to HS2 activities that may impact our operations and our public water supply sources. We will continue to work with both HS2 and the EA beyond the completion of HS2 construction in order to monitor where necessary the short-, medium- and long-term impacts of the work.

Consultation Question	Great Missenden Parish Council comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?	We are aware that Affinity does at time draw water from the aquifer related to this stream, and would agree that at times this is pragmatically reasonable. However we would like to see clearer criteria set for ceasing all such extraction at times when the streams are under stress, and measures planned for alternative sources of water and/or ameliorative measures.

Affinity Water Response
We will continue to assess the feasibility of river support schemes where the local geology and chalk stream characteristics are suitable, as part of our drought permit mitigation measures. In terms of abstraction reductions, for the Misbourne catchment specifically, we have reduced abstraction by 8Ml/d in 1998 and a further 3Ml/d in 2018, with a further 2Ml/d reduction planned for 2024. This is in addition to Thames Water's reduction of 7Ml/d in the Upper Misbourne in the same AMP. All these historic and planned reductions in abstraction aim to leave more water in the

environment, some of which may enter the river as baseflow under certain hydrological conditions. In addition to the abstraction reductions, we have included one of our Misbourne sources in Ofwat's Abstraction Incentive Mechanism, seeking to minimise its use during low flow periods, as defined locally. We will continue to work alongside the Environment Agency and other stakeholders to help the river meet its WFD objectives.

Consultation Question	Great Missenden Parish Council comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	We are concerned that in your proposed plans, increased capital expenditure and particularly enhanced activity to reduce leakage appear to be measures brought in reactively when a drought situation is well advanced rather than forward-looking proactive steps – "mending the roof while the sun shines" – as is most clearly highlighted in the graph in section 2.3 of your Non-Technical Summary, which only shows "enhanced leakage activity" in the spring of the fifth year after the first of three dry winters! *We are of the view that any modest increase in charges that might arise from such a change of focus would be both publicly acceptable and justified. * We find it concerning that, although you report with reasonable pride the reductions you have made and plan to make to leakage, there seems to be no statement of what proportion of water supply is so lost. Thus we and the public have no way of assessing the appropriateness of these efforts.

Affinity Water Response

The worked example graph in Section 2.3 of our non-technical summary shows enhanced leakage activity in the second year of the example scenario, which is when we would expect a drought to start to become serious and would require changes to our business-as-usual operations.

Regarding your comments on increases in charges, charging mechanisms are set as part of our business planning process together with Ofwat, our economic regulator, rather than through the drought planning process. As part of the business planning process, we have agreed with Ofwat year on year reductions in abstraction and alongside that we have launched an ambitious demand reduction programme to promote using less water to customers and general water efficiency.
Our leakage targets are set out within our WRMP, and the success with which we achieve these is reported annually throughout the annual reporting process. For the annual performance report with this information please visit www.affinitywater.co.uk/corporate/investors/library.

3.11 Representation from Hatfield Town Council

For the full representation submitted by Hatfield Town Council please see the Appendices.

Hatfield Town Council Comments

Hatfield Town Council Summary response to Affinity Drought Consultation Summary

- Hatfield Town Council has major reservations about the Drought Management Plan 2022 in that it fails to make any reference to the threat to our water supplies in Hatfield from the bromate / bromide plume, underground in Hatfield which is the biggest groundwater contamination disaster in Europe, causing [redacted] Pumping station to close in 2000 .

- The plan also fails to make reference to the fact that the scavenging operation at Bishops Rise has failed to reduce the threat from the contamination and there is also not an agreed way forward to deal with the contamination.

- The current operation at Bishops Rise is using an exceptionally high volume of water, circa 9 million litres per day, which is in excess of the volume of water used each day by Hatfield residents. This remedial action is on behalf of the whole of Hertfordshire preventing Essendon and Ware being further contaminated. There appears to be no plan to curb this during drought. The plan makes no reference as to how this wastage can be minimised in the event of a period of drought conditions for Hatfield.

We believe The Environment Agency and Affinity should collaborate with an independent hydrogeology advisor urgently, to adopt the better remedial plan, as described in The Environment Agency "St. Leonard Court", review of remediation of the bromate plume - published in 2019 to save water, and protect future water sources.
Please see appendices for full response.

Affinity Water Response

Thank you for your comments. This is an ongoing incident which is being managed, and is not related to our drought management process. We are engaging with Hatfield Town Council directly to discuss their concerns.

3.12 Representation from Little Hadham Parish Council

Little Hadham Parish Council Comments

Thank you for sending this to our clerk of Little Hadham Parish Council. It has been shared with all the other members of the council. All seemed in agreement with the plan, some were interested in your ongoing work in conserving and protecting our rivers- here in the village it is the River Ashe which unfortunately is dry for much of the year, why I am not sure. We would be interested to hear how your plans for drought progress and also anything you can inform us about our part of the river.

Affinity Water Response

Thank you for your comments on our draft drought plan. We will ensure that we continue to keep you informed about updates to our drought planning as a stakeholder, as well as updates on our water resource position if we start to enter a developing drought situation.

Note that the Environment Agency publish detailed monthly water situation reports which provide updates on the status of local rivers including the River Ash. These can be found at https://www.gov.uk/government/publications/water-situation-local-area-reports and the River Ash is included in the Hertfordshire and North London Report.

3.13 Representation from Canal & River Trust

Canal & River Trust Comments

The Canal & River Trust (the Trust) is the guardian of 2,000 miles of historic waterways across England and Wales. We are among the largest charities in the UK, maintaining the nation's third largest collection of listed structures, as well as museums, archives, navigations and hundreds of important wildlife sites.

We believe that our canals and rivers are a national treasure and a local haven for people and wildlife. It is our job to care for this wonderful legacy – holding it in trust for the nation in perpetuity and giving people a greater role in the running of their local waterways.

Thank you for the opportunity to review the Affinity Water draft Drought Plan 2022. We have no specific comments, however welcome the opportunity to work closely with Affinity Water to support the Drought Plan implementation when it occurs.

Affinity Water Response

Thank you for taking the time to review our draft drought plan. We will continue to include Canal & River Trust as a key stakeholder for our planning and communications purposes going forward and appreciate that you will support the implementation of our plan when we experience a drought situation.

3.14 Representation from Horticultural Trades Association

Horticultural Trades Association comments

Thank you for the opportunity to contribute to this consultation. The Horticultural Trades Association (HTA) represents the UK garden industry, including garden centres, DIY stores, commercial plant growers, domestic landscapers and manufacturers. The total ornamental horticulture industry is worth £24bn industry, with 560,000 supported in the UK.

In our response we note that the pressures of population and economic growth, and climate change are set to put pressure on water supplies in the coming years. It's vitally important that we act now to ensure adequate access to water supplies for the country. Our industry is ready to play

a part in this and has begun work towards reducing mains water use through the HTA's Sustainability Roadmap (hta.org.uk/sustainability). As part of our Roadmap, we set out our goals for the industry on water use. These are:

- an aggregate 40% increase in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers.
- an aggregate 25% increase in the proportion of HTA members using water efficiency measures such as reservoirs and automated irrigation systems.

With these points in mind, we would make three key points in response to the consultation:

1. That the devastating impact of a ban on 'watering outdoor plants on commercial premises' on our members be recognised in the plan, and that an exemption for horticultural businesses be introduced in non-essential use bans.
2. That the temporary provision for 'watering newly bought plants for the first 28 days after the ban is introduced' be nuanced so that irrigation of plants and trees being introduced to green infrastructure projects can continue, and that longer term environmental benefit is not lost.
3. That Affinity Water (and other water companies) work with us to accelerate the introduction of measures and best practice that will reduce our members' reliance on mains water. This includes support for water capture infrastructure projects, such as more self-sufficient water systems like reservoirs and efficient irrigation systems.

We and our members already take water efficiency measures, including selling drought resistant plans, but we stand ready to support greater domestic water efficiency through disseminating information to gardeners on responsible watering in their gardens.

Thank you once again for the opportunity to respond, and we hope to work with Affinity Water and other water companies as a responsible partner in ensuring water resilience for the UK in the coming years.

Affinity Water Response

Thank you for taking the time to review our draft drought plan. We have included your detailed comments below with our responses.

Horticultural Trades Association comments

Background

The Horticultural Trades Association (HTA) represents the UK garden industry, including garden centres, DIY stores, commercial plant growers, domestic landscapers and manufacturers. In our response we note that the pressures of population and economic growth, and climate change are set to put pressure on water supplies in the coming years.

In 2017, research from Oxford Economics demonstrated that the ornamental horticulture and landscaping industry supported contributions of £24.2 billion to the UK's GDP and 560,000 jobs – around 1% of the UK's workforce.

It's vitally important that we act now to ensure adequate access to water supplies for the country. Our industry is ready to play a part in this, and has begun work towards reducing mains water use through the HTA's Sustainability Roadmap (hta.org.uk/sustainability). As part of our Roadmap, we set out our goals for the industry on water use. These are:
an aggregate 40% increase in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers.
an aggregate 25% increase in the proportion of HTA members using water efficiency measures such as reservoirs and automated irrigation systems.

Many members already sell and promote drought-resistant plants and have communication plans in place to consumers to improve water efficiency. However, we want to work with water companies in improving these communications.

The industry underpins many of the goals of the Government's 25-Year Environment Plan, including heightened levels of biodiversity and carbon sequestration, and since the first covid lockdown easing there are now 3 million new gardeners, making 30 million gardeners in the UK in total, relying on horticultural businesses.

The horticulture industry also supplies the green infrastructure that will increasingly present nature-based solutions to the effects of climate change, for instance in urban tree planting and greening projects and sustainable urban drainage systems. This is just one way that horticulture underpins the Government's 25-year Environment Plan.

The ornamental horticulture industry and water use

Water Resources South East, of which Affinity Water is part, has high concentrations of horticulture businesses in its catchment, particularly over 40 commercial plant and tree growers and 245 garden centres; this means that significant employment in the area is provided by horticulture.

Specifically within Affinity Water's supply, there are 9 grower businesses who have a collective annual turnover of over £38 million. There are also many garden retailers who would sit under the same catchment; however, we understand that there would be exemptions on the ban for plants that are for sale.

These grower businesses supply plants to garden retailers and domestic and amenity landscapers, both locally and across the country. If plants grown in the southeast were to fail due to a lack of water, the consequences would be felt nationwide and the whole ornamental horticulture industry would be at risk.

In research presented at the 2021 Waterwise conference, HTA showed that UK garden centres and ornamentals growers accounted for around 20 million cubic metres of water per year compared with a total 5.3 billion cubic metres abstracted for public water supply. The business survey which informed the research found that the impact were mains and/or abstracted water were not available during peak operating periods would affect the survival of the business for 50% of commercial growers and 45% of garden centres; for almost all the others the scenario would have a 'serious negative impact'.

Our industry also plays a vital role in the design, planting and maintenance of green infrastructure. Examples of projects include the Government's Tree Action Plan commitment to planting 30,000 ha of trees per year, and the Queen's Green Canopy, a project to encourage people to plant trees for the Queen's Platinum Jubilee. UK production nurseries are key to meeting these targets. These projects are often years in the planning; however, these timeframes are small compared with the years and decades of environmental benefit they provide in terms of reducing urban heat island effects, shading benefits, and reducing the impact of heavy rains and flash flooding on urban drainage systems. However, in order for these planting schemes to succeed it is vital that plants be irrigated as they root in to their situations.

Affinity Water Response

Thank you for providing background information in support of your representation.

We are very conscious of the potential impacts of implementing non-essential use bans for certain businesses, including those in the horticultural industry. We have worked closely with other water companies in the South East to ensure our plans for implementing non-essential use bans, including the exemptions we would apply, are aligned.

Thank you also for sharing details of your Sustainability Roadmap, which clearly shows positive steps towards reducing mains water consumption, and we are fully supportive of this. We also support the Government's 25-year Environment Plan through our planning processes and will be sharing more information about how we plan to do this in due course.

We acknowledge the vital role which the Horticultural Trades Association plays in the development of green infrastructure, and the need for irrigation as part of this process.

Horticultural Trades Association comments

Our response to points in the proposed drought plan

In broad terms we welcome and support the principles of the plan. As noted, continuity of water supply plays a vital role to the employment and economic contribution our industry makes in the Affinity Water area, and nationwide. Our industry has innovated solutions for domestic gardeners to reduce their reliance on mains water and hosepipes for watering in the form of water butts and drip irrigation systems and stands ready to help educate consumers around responsible water use in gardening.

Affinity Water Response

We note your comments in support of the principles of our drought plan. We also appreciate the progress made towards developing solutions for domestic gardeners to reduce their mains water use, which aligns with our objectives to reduce per capita consumption (PCC) in our area, a significant component of which is garden use. We appreciate the offer of support for education, and we would be keen to work with yourselves to collaborate on this, both during normal operational periods and during the lead up to a drought.

Horticultural Trades Association comments

We note that under non-essential use bans a there is a provision to ban 'watering outdoor plants on commercial premises'. The wording of this is ambiguous in the context of our industry and could be interpreted as a ban on irrigating commercial crops which would lead to huge commercial losses; essentially horticultural businesses would be treated in the same way as pubs looking to water a hanging basket. Such a ban would risk inflicting huge and lasting damage on our industry. The loss of what amounts to a cash crop would push a huge proportion of our member businesses into insolvency and would reduce the UK's capacity to produce plants and trees needed for tree the planting and urban greening goals envisaged in Defra's 25 Year Environment Plan. We would ask that an exemption be built into the plan for horticultural businesses, recognising the disproportionately serious impact water restrictions would have on our sector, especially in peak production periods.

Affinity Water Response

We acknowledge your concerns regarding activities and definitions included under non-essential use bans, please refer to Appendix 6 of our drought plan which provides further information about what is included or excluded as part of these restrictions. The legislation stipulates that the restriction does not include watering plants that are grown or kept for sale or commercial use. This means that watering of plants grown for sale in garden centres and commercial crops would not be restricted.

We appreciate that the wording in the main drought plan may be ambiguous, and we will therefore include some additional text in our updated drought plan to explain that these actions are excluded from the restrictions. We will also ensure that in the event of a drought if we did need to implement a temporary use ban (TUB), the activities which are included within the restrictions are clearly stated.

Horticultural Trades Association comments

We also note that under non-essential use bans the plan provides for 'watering in newly bought plants for the first 28 days after the ban is introduced'. In the coming green infrastructure projects such as tree planting and urban greening work have huge potential to provide nature-based solutions to the effects of climate change. The benefits on human health are also significant;

according to the Office for National Statistics air pollution by UK vegetation averted 1,900 deaths per year in 2015 alone, and in 2018, saved over £1.2 billion in avoided healthcare costs

These ecosystem services pay back over many years and decades. However, a critical point in their implementation is in the period after planting when these trees and plants need to take root and establish themselves. Without adequate irrigation (which can be managed in a responsible way), these plants and trees will die, and the projects fail. We note that you propose an exemption to non-essential use bans for 'water-using activities which protect human health and safety'. We suggest that this be extended to activities which protect or benefit the environment and the UK's natural capital, and that exemptions based on a case-by-case review of the irrigation needs of green infrastructure projects be provided for in the plan.

Affinity Water Response

We acknowledge and are in alignment with your points about the importance of green infrastructure in creating sustainable communities and supporting the objectives in Defra's 25 Year Environment Plan.

We work closely with the other companies in WRSE to align the discretionary exemptions associated with the implementation of temporary restrictions, in order to apply a consistent approach across the region. Our approach seeks to balance the critical need to reduce the demand for water in a drought while mitigating any disproportionate socio-economic or environmental impacts. Note that during temporary water use restrictions it is still possible to irrigate using methods other than with mains water, such as from water butts or with a bowser, or with an efficient trickle irrigation system. In addition, we would encourage the planting plans for green infrastructure projects to include more drought tolerant plant species, which will help to ensure that these schemes are less susceptible to risks from dry weather and drought events.

Horticultural Trades Association comments

Future opportunities for collaboration

As noted in our covering letter, our industry is already working towards greater water resilience and on reducing its reliance on mains water; we recognise the vital national interest in conserving the nation's water supplies. Our Sustainability Roadmap includes a target for an aggregate 40% increase in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers. In the research presented at Waterwise's 2021 conference, we reported that 32% of commercial growers and 50% of garden centres do not currently use rainwater harvesting systems but would like to; almost all the others are already using such systems. We believe there are solutions for businesses to rely less on mains water in this way, and feel it is a mutual interest of water companies. We therefore welcome engagement with water companies to achieve this goal.

We are working to raise awareness and share best practice and guidance between our member businesses and would like a dialogue with water companies on how this can be accelerated. Similarly, we would like to ensure that our members are able to promptly identify, and access regional or national funds or incentives designed to accelerate investment in water resilience measures and in infrastructure which utilises water in the most efficient way – such as reservoirs on site for growers and retailers and the latest water saving technology. In many cases this will not be a case of new funds or incentives specifically for horticulture businesses, but merely of ensuring that horticulture businesses are aware of and are included in eligibility criteria for such support. This would ensure that the horticulture industry can continue to provide so many environmental, and health and well-being benefits in the most sustainable way. We would welcome collaboration with Affinity Water and other bodies to this end.

Lastly, better data and information on our industry's water use and needs are vitally important to achieving greater water resilience in horticulture. We would like to collaborate with the water industry in developing better data in the industry's national and regional water needs and the related economic dependencies on water supplies. This will enable us to identify and prioritise areas in which there are particular areas of commercial or environmental impact relating to water use in horticulture, and for us to work together to play a part in preventing future difficulties rather than reacting when problems occur.

In summary, we feel that it is in both the horticulture industry's and water sector's interest to ensure that essential products such as plants and trees, and the many benefits they provide to society and the economy, and most importantly to the environment, are not threatened by a lack of water.

We welcome future engagement with the water sector and look forward to collaborating together.

Affinity Water Response

We are fully supportive of your points regarding the importance of the horticultural sector in providing environmental and societal benefits, and the need to ensure that the benefits provided are not impacted by lack of water in the future.

We would welcome the opportunity for collaboration and engagement with your organisation to support mutual solutions for reducing demand across our region. We have asked our Corporate Affairs Team to engage with yourselves to discuss opportunities to collaborate.

We will also update our drought plan to show that we will engage with the Horticultural Trade Association in the lead up to potential implementation of restrictions, as we recognise the important role you can play in supporting communications to stakeholders within the horticultural sector.

3.15 Representation from Cam Valley Forum

Cam Valley Forum comments

1. We welcome the opportunity to comment on Affinity Water's Draft Drought Management Plan. The Forum is an association of local individuals with diverse environmental, recreational, academic and business interests, concerned directly or indirectly with the River Cam. Our mission is to defend the health and wellbeing of the Cam for its wildlife and environment and for people; safeguard its historical and cultural importance; and seek, through a reasoned and evidence-based approach, changes in policy and practice to enhance the water environment of the entire catchment.

Affinity Water Response

Thank you for your comments on our draft drought plan, which we have responded to below.

Cam Valley Forum comments

2. We are pleased to see references to the company's environmental responsibilities and the 81 specific references to 'Chalk' in the draft plan. However, we are concerned that the plan focuses almost exclusively on the company's activities to the south of the Chilterns; Affinity Water needs to give similar attention to the environmental impacts of its abstraction from the Chalk aquifer below the 'Cam, Rhee and Granta operational catchment' (the 'Cam' here). In 2019 this accounted for 22% of the 105 Ml/day abstracted from the aquifer (Cambridge Water taking 64% and Anglian Water 14%). In that year the Environment Agency also abstracted an additional 15 Ml/day from the aquifer to augment Chalk streams adversely impacted by these water company abstractions.

Affinity Water Response

Thank you for your comments on our draft drought plan and specifically on the River Cam. We have committed to end unsustainable abstraction and help improve the health of Chalk streams across our supply regions. In the Cam catchment, we have agreed to cap our groundwater abstractions to recent actual levels irrespective of licence allowance. This means that no more water will be abstracted on an annual basis than has historically been taken. In addition to this, following the AMP6 investigation on the Cam catchment, we have agreed to increase the current flow trigger at Great Chesterford gauging station, which will result in more frequent river support in future. This revised flow trigger is based on ecological needs and will support flows in the Upper Cam. We are currently working with the Environment Agency and British Geological Survey to understand the groundwater – surface water interaction in the Cam catchment and have plans to undertake river restoration and habitat enhancement works under our AMP7 programme. We would be happy to arrange a meeting to discuss this planned work in more detail. Please contact our Corporate Affairs team to arrange (publicaffairs@affinitywater.co.uk).

Cam Valley Forum comments

3. The long-standing impacts of over-abstraction on Chalk streams in the Cam catchment are proven and increasingly recognised by public bodies (see Annex 1 for Cam examples). In the 'Achieving a Green Future' letter to water companies of 21/08/20, Defra and the regulators stated: 'Restoring England's internationally important chalk stream habitats is a government priority. Many suffer from low flows, poor water quality and habitat loss and we need your help to tackle these pressures.' The Government's draft Strategic Priorities for Ofwat of 22/07/21 include: 'We expect companies to support environmental protection and enhancement of priority habitats such as chalk streams.' These directions apply to all Chalk streams, not just to some of them.

Affinity Water Response

Please see our response above regarding our abstraction in the Cam catchment and providing support in times of low flow. In addition to capping abstraction, we are investing a significant amount in improving environmental health and resilience through our WINEP. This includes morphological river restoration works planned for the river Cam. Stakeholder engagement, scoping and outline design will commence in 2022 with the plan for on the ground improvements from 2023 onwards. These works will aim to improve the environmental health of the river, which will also help to ensure it is more resilient to events such as droughts. If you would like to hear more about our river restoration plans, please get in touch with our Corporate Affairs Team on publicaffairs@affinitywater.co.uk, and we would be happy to set up a meeting to discuss this further.

Cam Valley Forum comments

4. Following Affinity Water's welcome commitment on 27/09/20 to restore Chalk streams on the south slopes of the Chilterns (www.affinitywater.co.uk/news/action-to-restore-chalk-streams) we asked the company whether this also applied to those on the north slopes. The welcome response from Jake Rigg on 16/10/20 was: 'I can confirm that our commitment applies to all chalk rivers not just those in the Chilterns.' We encourage Affinity Water to reflect this commitment, and its global responsibility to care for and restore the Chalk streams affected by its activities, fully in all its policies, plans and relevant actions, including its Drought Management Plan.

Affinity Water Response

Please see our response above regarding limiting abstraction in the Cam catchment and providing support in times of low flow.

Cam Valley Forum comments

5. As strategic priorities for abstraction that affects Chalk streams, we call on Affinity Water to:

- Reduce abstraction from the Chalk aquifer in the Cam catchment at source, so that springs and headwaters run freely throughout the year, every year, whatever the weather.
- Reconfigure the company's water supply systems by applying a 'Chalk-streams first' solution to the Cam, as it plans to do for the south Chilterns, supported by water transfers.
- Cap Chalk aquifer abstraction at current levels, regardless of licence entitlements, and meet all immediate increases in public demand (new development is adding particular pressures in our local supply zones) via surface water transfers from Anglian Water.
- Reduce water wastage through investment in leakage control, compulsory metering, and demand management in all its forms.

Affinity Water Response

Please see our response above regarding our abstraction in the Cam catchment during times of low flow, and capping our abstraction at recent actual rates. Chalk streams naturally have ephemeral or winterbourne reaches which are typically in the headwater sections, and it would therefore not be natural to create a river that was flowing along its entire length for all of the year. We are however working to ensure that any impacts from our abstractions are minimised and mitigated, so that Chalk streams such as the Cam function as naturally as possible and our work with BGS to map the geology of the catchment, is important in supporting our understanding.

Through our WRMP we are working on strategic solutions which will enable us to reduce abstraction in Chalk stream catchments in our area. We are also investing in leakage control, metering, and demand management as part of our AMP7 programme.

Cam Valley Forum comments

6. These obligations should be viewed as essential elements in Affinity Water's plans, not as bolt-ons. The company will have no business to operate if it fails to care for the natural capital assets on which its corporate survival depends - aquifers and rivers. The company needs to recognise and promote these as economic assets in their own right. Monies spent on substantial and needed improvements in their ecological health would then be reflected in an increase in asset value.

Affinity Water Response

We recognise and take our environmental responsibilities very seriously and have reflected this in our drought plan with the inclusion of a new Environmental Stress trigger. This sits alongside our campaigns such as #WhyNotWater and most recently Save our Streams, where we promote the critical need to save water in order to protect the environment. We are also investing in environmental resilience throughout our region as part of our AMP7 WINEP programme, implementing river restoration, habitat enhancement, biodiversity improvements and catchment management initiatives. We will provide more information on our environmental work in our final drought plan, as we recognise that improving environmental resilience is an important element in reducing risks from events such as droughts.

We are committed to implementing a portfolio of natural capital solutions, which are closely linked to our ambitions to achieve Carbon net zero by 2030. Please visit our website for more information about our plans in this regard: https://www.affinitywater.co.uk/news/plan-for-net-zero.

Cam Valley Forum comments

7. Affinity Water's performance commitments should similarly reflect local environmental needs. Customers in 'areas of serious water stress' - now including the whole Cam catchment - should no longer expect to have unlimited supplies of water all year-round, for all purposes, without limitation. Yet Affinity Water is still working to standards for the use of Temporary Use Bans and Non-Essential Use Bans that would be more appropriate for Scotland. Affinity Water should impose a Temporary Use Ban every year from 1 May to 31 August, to signal to the public that water is scarce and needs to be used wisely, rather than aiming to do this in no more than one year in 10.

Affinity Water Response

Our performance commitments are set in agreement with Ofwat. Our Water Resources Management Plan (WRMP19) which is a cornerstone of our AMP7 business plan reflects our area's status as being under serious water stress. We are working to reduce the demand for water through our metering and demand management programmes and public campaigns. We also hope that creating sustainable communities will be a priority for local authorities and developers, and water efficiency is a fundamental element of this. We are engaging with Local Planning Authorities (LPAs) through the development of their Local Plan and Infrastructure Development Plan processes, to ensure that their plans incorporate requirements for all new developments to utilise water efficient fittings and fixtures, and where possible to consider the wider water environment.

The use of restrictions is set out within a regulatory and statutory framework, which means we are not able to use TUB or NEUB restrictions during a non-drought year. We are working on developing mechanisms within the South East which will enable more effective reductions in water use during peak months, as we recognise that demand for water needs to be reduced outside drought events. These proposals will likely be set out separately to our drought plan.

Cam Valley Forum comments

8. Affinity Water's drought trigger levels should similarly reflect environmental impacts, not simply the availability of licensed quantities. The Environment Agency's approach to drought management should be fully integrated into the company's plans. Avoiding and alleviating environmental stress should be treated as being just as important as avoiding any impacts on public supplies. More robust action to restrict usage could then be taken much earlier than is possible now, with a better chance of avoiding the environmental damage caused by low or non-existent flows.

Affinity Water Response

As part of this round of drought planning, we have introduced a new trigger level, 'Environmental stress', which is designed specifically around when dry weather starts to impact on the environment, and before public water supplies start to become affected. This trigger level includes robust action to communicate the situation to our customers to ensure they understand the increased importance of reducing their demand, in order to leave more water in the environment at this critical time.

Cam Valley Forum comments

9. We also call on Affinity Water, Cambridge Water and Anglian Water to work much more closely together to develop a whole-catchment approach to tackling the environmental impacts of over -abstraction from the Cam Chalk aquifer. The companies share a common resource yet lack a common approach; they need to collaborate in finding effective short-term and long-term solutions. These need to be brought together, within the regional planning framework provided by Water Resources East, and built into their individual Water Resources Management Plans.

Affinity Water Response

We work with our neighbouring water companies on a number of initiatives, including involvement in the Catchment Based Approach (CaBA).

We are working with Cambridge Water and Anglian Water through our WRE regional planning work. The group is using a collaborative approach to water resource planning through which we collaboratively create and deliver an ambitious multi-sector best value regional plan that provides additional value to the WRE region and can respond to the challenges posed by socio-economic growth, environmental ambition, and climate change. We also worked closely with our neighbouring companies during the last dry weather event from 2017-2019 and will do so in events such as this in future. We will add more information to our updated drought plan to explain our collaboration with other companies through WRE.

We are also currently working in partnership with Cambridge Water on an innovative project to incentivise the growth of cover crops across our respective groundwater catchments. This has been running for three years and in 2021 both companies funded over 1,000 hectares of cover crops. We recognise that growing cover crops on bare soil over winter can help hold more water on the land and improve soil health and aquifer recharge, as well as, reducing runoff and improving water quality. Going forward we are seeking to identify what nature-based solutions can be deployed spatially across the whole catchment where they can have the greatest benefit for improved infiltration, reduced sediment run off into rivers, improved ground and surface water quality as well as improving soil health and biodiversity.

Cam Valley Forum comments

10. Water tends to be taken for granted in the UK. Many people will be surprised that no less than 15 water supply zones in the south east and midlands have now been designated as ‘areas of serious water stress’. Other countries are much more aware of the scarcity and fragility of their water supplies. They have developed innovative approaches to water management of which there appears to be little awareness here, but these are no less applicable to the challenges we face. Annex 2 sets out examples from South Africa, where restrictions on water use that are in place at all times can be progressively ratcheted up when dam water levels fall below key thresholds.

Affinity Water Response

We are fully supportive of promoting education about the importance of water efficiency, especially given that we are in an area of serious water stress. Our recent Save our Streams campaign has gone some way to achieving this for our own customers, by highlighting the connection between the water which comes out of our taps and the water in our environment. We will continue to work hard to build on this messaging and help our customers to use less water at all times.

Cam Valley Forum comments

11. We have recently called on Ofwat to examine all such options and consider what role they could play in promoting environmentally-sustainable water use in the UK. The South African measures include many more practical and fiscal tools, incentives and penalties to control discretionary use than are available in the UK. Importantly the measures safeguard access to affordable water for the poor for all essential needs, so that no-one's health suffers, and that should be the case here too. We commend these approaches equally to Affinity Water in developing its policies and plans.

Affinity Water Response

We have considered the approaches used during the Cape Town drought and discussed these with the other water companies in the South East. We are planning to do more work around this, particularly in the context of extreme droughts, when we would ask our customers to significantly reduce their water use, as was the case in Cape Town.

Cam Valley Forum comments

12. Recommendation 12: For the Cam Valley, a comprehensive demand management plan should include:

    (a) Defining a minimum baseline of mandatory restrictions on household and business use of water to be applied at all times.
    (b) Defining further restrictions to be imposed as a matter of course at least in the four months from May to August every year (e.g. a ban on household use of sprinklers and hosepipes, including high-pressure hoses used to clean driveways and patios).
    (c) Agreeing groundwater level 'trigger' points at which progressively more demanding restrictions on household and business use of water will apply.
    (d) Rolling out smart water meters in homes, schools, businesses, hospitals and public buildings to enable continuous tracking of water use and encourage savings supported by effective training and incentives for building managers to reduce consumption.
    (e) Actively reducing water pressure as groundwater 'trigger' points are reached.
    (f) Installing water management devices in pipes supplying those customers whose use of water regularly exceeds guideline targets.
    (g) Working with voluntary groups and the media to communicate the importance of water and water-saving messages to households and businesses.
    (h) Learning from other countries about the costs and benefits of introducing progressive tariffs, linked to water supply 'trigger' points, to discourage profligate use of water.

Affinity Water Response

a) Under normal operational conditions we have a statutory duty to provide a water supply and make this supply available to those who demand it as well as a duty to provide domestic customers with a supply that is sufficient for their purposes. We are however working hard to reduce demand by asking our customers to use less water, and this is a critical element of our water resource planning process. During a drought situation, we have the ability to ask our customers to use even less water,. In the event of a drought, we will explain to our customers why this is so important as part of our communications.

b) Please see our response above regarding the implementation of water use restrictions.

c) Our drought plan does set out groundwater level triggers associated with increasingly more significant restrictions as a drought develops. This includes the inclusion of a new drought trigger, 'environmental stress', which is activated before water supplies are affected but when we know the environment is likely to be under stress due to dry weather. We would enhance our communications during this time to reduce demand and leave more water in the environment.

d) We are working towards achieving targets set out in our ambitious metering programme, which will aim to install over 200,000 water meters during the AMP7 period (up to 2025).

e) We have statutory targets for water pressure which we are legally required to meet, however we will consider the use of water pressure to reduce demand in the event of a severe drought.

f) We do not have statutory powers to restrict water use for any of our customers. Through our #WhyNotWater campaign we have lobbied for legislative and policy changes to ensure water efficiency is recognised as critical for the environment and for society.

g) Our demand management strategy incorporates the use of the media to help spread our water efficiency messaging, both as part of our BAU operations and during droughts.

h) With regards to implementing differing tariffs or price incentive mechanisms, charging mechanisms are set in accordance with Ofwat, our economic regulator, as part of our business planning process rather than through the drought planning process.

3.16 Representation from Ver Valley Society

Ver Valley Society comments

Affinity Water - Draft Drought Plan for Public Consultation

Thank you for the improvements that have been made since the previous consultation one year ago. We would like to question the Environmental Protection changes that have been suggested for the Central Region.
Welcome Improvements

As a stakeholder who cares about chalk streams and a Society who recognises early action from members of the public might allow even a small marginal benefit, we are delighted to see plans for earlier communication. The mantra of 'Educating, Informing and Taking Action' should make for better understanding which has been lacking in the past.

The review of drought permits to a much shorter list is helpful. The Ver is one of the first and worst to suffer in times of drought, so the removal of drought permit options in the Ver catchment is doubly appreciated.

More Adjustment Required to Protect the Environment

The chalk streams of the Colne and Lea catchments suffered very badly in the 2017 to 2019 period. In June 2019 groundwater at Lilley Bottom fell below the then trigger 3 level (new trigger 2) and by August there was barely a stetch of normal flow across the region.

Affinity Water Response

Thank you for your comments in support of the improvements we have made to our drought plan.

We recognise that there is more to do to protect the environment, to ensure greater resilience to events such as the dry weather situation experienced in 2017 to 2019. Our AMP7 WINEP includes extensive investment for environmental enhancement, and this includes numerous projects in the Colne and Lea catchments which will aim to improve their environmental resilience.

Ver Valley Society comments

1. Moving the goalposts

PLEASE REVIEW AND ADJUST THE TRIGGER LEVELS TO BRING IN MEASURES MORE FAVOURABLE TO THE ENVIRONMENT AT AN EARLIER POINT.

It appears that the new trigger levels have been adjusted so that in the future, with similar groundwater levels at Lilley Bottom to 2019, the new trigger level 2 won't even be reached. Recalling the dried-up chalk stream reaches, including the Ver through St Albans, it seems that TUBs won't even be on the agenda until conditions are worse than in 2019. In other words, the new trigger levels have moved in the wrong direction. The state of the river and public furore demonstrated then that more mandatory control (TUBs) was needed at an earlier point. Our members and others were calling for action - even protesting - for a hosepipe ban and other measures, all summer long.

Affinity Water Response

The trigger for TUBs is now defined as drought trigger 2 in our plan (whereas in previous plans it is set as drought trigger 3). This however does not mean that TUBs would be introduced later in a drought, and we apologise for any confusion resulting from this update in our drought triggers. Our level of service for the implementation of TUBs has remained the same at a 1 in 10 year return period. We appreciate that some chalk streams in our area are affected by low groundwater level conditions before the trigger for TUBs is reached, which is a key reason why we have introduced a new trigger; Environmental Stress, which will result in demand management actions being taken. We will ramp up our communications when we know river flows are likely to be affected by drier

conditions, and we will do more to appeal to our customers to use less water, whilst explaining the importance of doing so. We will provide more information in the Communications sections of our drought plan to explain how we will do this.

Ver Valley Society comments

2. Trigger Level 2. A more accurate description

PLEASE ADJUST THE TRIGGER 2 NARRATIVE TO HELP REMIND ALL PARTIES OF THE ENVIRONMENTAL CRISIS OUR CHALK STREAMS WOULD BE FACING.

“Drought Trigger 2:The impacts would be felt in the environment with flows in chalk streams noticeably declining, and upper reaches remaining dry.”

The gravity of the environmental situation narrative for trigger level 2 is also very understated, some might say misleading. We’ve been at this point in recent times, so a more exact form of words to portray the circumstances should readily come to mind and would be a telling reminder to a wide audience.

Looking at the new trigger charts, the groundwater at Lilley Bottom will be lower than summer 2019 and therefore the rivers in a parlous state and the environmental situation very grave indeed. The mention of dry middle reaches, dead and dying large brown trout and numerous chalk stream fish rescues would better describe the likely scenario. Marginal ponds and wetlands will be gone too. (We well remember Emma Howard Boyd, Chair of the EA, visiting electrofishing on the Mimram in 2019, the EA’s team also took fish from the Ver and the Misbourne among others.)

Affinity Water Response

We will review the text in our narrative for each of the drought triggers to ensure it is accurate and reflective of the situation which is likely to be happening in our area. If required we will update the text for the drought trigger to reflect the seriousness of this situation, particularly for chalk streams in our area such as the Ver.

3.17 Representation from Ellenbrook Residents Association

The comments from Ellenbrook Residents Association on our drought plan have been set out below. Note that comments not relating to our drought plan and figures have been excluded from this table, however these can be found in the full representation which is set out in the Appendices.

Ellenbrook Residents Association comments

1. Affinity Water Ltd have asked Hertfordshire residents to complete a consultation; on a future drought condition and management that may occur in their areas. This is following unusual dry conditions in the winter months where the aquifers have not been replenished by rainwater.

Affinity Water Response

Thank you for your comments on our draft drought plan. It is indeed correct that droughts in our area typically follow dry winters when not enough recharge of aquifers occurs, however please note that this is not the case this year, as we received above average rainfall over the previous winter and water resource levels are currently above average. For more information and updates on our water resource position please visit https://www.affinitywater.co.uk/my-water/water-resources.

Ellenbrook Residents Association comments

2. Ellenbrook Area residents are extremely concerned that the plan fails to make any reference to the known bromate / bromide contamination in the chalk aquifer.

Drought management is of special interest to residents in Hatfield being a focal point of historic contamination of the chalk aquifer in Hertfordshire. This was the result of the bromate & bromide pollution emanating from dumped chemical in sumps at Steetly chemical works in Sandridge. The plume spread underground from Sandridge in the chalk aquifer under Hatfield and nearby areas (Essendon, and Ware and Hoddesdon) between 1970 and 2000.

It was detected by Affinity Water at [redacted] water pumping station (PWS) in 2000. The W.H.O introduced a standard that no more than 10µg/l of bromate is permitted in drinking water. [redacted] accounted for over 300µg/l of bromate in the groundwater. This led to BR being closed except for remedial work (scavenging) of the contaminant. Re-direction of the water for Hatfield now comes from [redacted] water treatment site – supplied by [redacted] PWS and local rivers. Later it was found that [redacted] PWS was also contaminated and put on a start - stop basis.
Groundwater abstraction accounts for 60% - 80% of the water used for drinking purpose while the rest of the water comes from rivers and reservoirs.

The lack of water in these aquifers will fire various drought trigger points from 1 to 4, the latter being the most severe. The first point is to appeal to the public to reduce water, activate network of intra-company transfer of supplies, the last point to reduce pressure and cut-off supplies.

As there is a huge reliance on groundwater abstraction to provide our drinking water, one would have assumed that any threat to the water supply would be of major concern to Affinity Water. Our concern is that on scanning this document – Drought Management Plan 2022- it appears to ignore the problem of contamination in the chalk aquifer and does not even mention the chemical bromate or bromide causing it.

3. Current issues with local water supplies that should be addressed in the Drought Management Plan

a) Wastage at [redacted] pumping station

It is clear that the [redacted] PWS is only used for remedial work and scavenging the bromate from the plume. It was closed as a public water supply in 2000, and has been pumping 9 million litres/day of waste water into the drains from 2007. It has two purposes; to remove bromate from the aquifer and deflect the plume from the [redacted] PWS.
For more information on the plume: Hatfield quarries and the plume – Ellenbrook Area Residents Association (ellenbrookresidents.org)

b) Remedial plan to release [redacted] from scavenging operation.

Although BR has been pumping out bromate and treating it for 14 years it has not made much impression on bromate reducing it to 300 µg/l (micrograms in 1 litre of water).
We believe for the sake of our future water supplies that Affinity Water should work with the Environment Agency to achieve an effective remedial plan, hopefully to remove the bromate from localised Hatfield chalk aquifer – or hot spots in the plume. This may release BR from its scavenging duties in the future and allow it to go back to supplying Hatfield with water.

4. Position of the bromate in the aquifer

The depth of the plume at various locations is not clear, but borehole data suggests it is no more than 20m below the ground surface before it reaches Hatfield. It is mainly trapped in the primeval gravel and some in the chalk. The drawdown effect from BR will certainly drag the contamination down to the well head through the chalk aquifer and therefore spread it vertically. The contamination that escapes BR draw will be 66.35m below Hatfield. It can be proved that the flow through the aquifer due to chalk adits and fissures will be faster therefore reaching [redacted] PWS and [redacted] towards the East much more quickly.

The threat to our water supplies is that the plume is only 1.3 miles from [redacted] and 0.9 mile from [redacted]. If the carcinogenic bromate levels exceed 10 µg/l then the water supply cannot be taken from these wells.

- • [redacted] contribute about 8 mega- litres/day.
- • [redacted] 3 ½ mega- litres/day (but controlled by Bishops Rise pumping)
- • [redacted] scavenging 9 mega- litres/day (not public water supply).
- • [redacted] PWS on B651 near Wheathamstead (clean supply) but 5.6 miles away.
- • Other sources including rivers & reservoirs, all treated at North Mymms.

The remedial plan & maps can be viewed at: EAs Remedial Plan – Ellenbrook Area Residents Association (ellenbrookresidents.org)

5. Threat of Quarries

The original source of the bromate contamination came from the Steetley chemical factory in Sandridge. It caused a plume to travel in an easterly direction reaching and closing [redacted] PWS in 2000. Some of the intense parts of the plume can be mapped and shown to be prevalent under the existing quarries and proposed quarries.

5.1 The Brett Quarry (proposed)

The proposed Brett quarry is situated on a Protection Zone 2 groundwater aquifer. This PZ2 aquifer feeds the remaining [redacted] & [redacted] PWS actively supplying Hatfield with drinking water. The Applicant will remove sand & gravel from the LMH or lower mineral aquifer, where contamination may be present. Sand and gravel would be worked “wet”, that is, extraction in the lower aquifer groundwater. Water from this operation was originally going to be stored in a massive lagoon to the East of the site, however this idea was deemed unsafe due to cross-contamination, silting up, and flooding.

Despite the proposed quarry being rejected by Hertfordshire County Council, Brett are still pursuing the quarry application and as at July 2021 they are planning to appeal the HCC decision and alongside the appeal are also proposing a new application on the same site with minor variations.

With the threat of drought becoming heightened, EARA are concerned at Affinity Water's apparent lack of concern at the potential threat of quarrying on a site so close to public water supplies.

5.2 Cemex Quarries

Affinity Water: comments on the planning extension to the Cemex quarry operation
"Surface runoff could end up in the lagoons that connect to the lower gravels/chalk, which may potentially deteriorate the water quality of the chalk aquifer. This activity may also change the groundwater level gradient and direct the plume southwards, where our [redacted] and [redacted] abstractions are located."
Application reference PL\0963\18 for the extraction of sand and gravel at land adjoining Coopers Green Lane. June 2019

The existing Cemex quarries have been extended for the next 10 years. Affinity Water (quoted as above) raised concerns that surface water could end up in a lagoon. This could be similar to the picture below. Clearly Affinity Water have significant concerns about the impact of quarrying in the local area and the potential threat on the water supply at [redacted] and [redacted].

6. Contamination (bromate / bromide) remedial plan

The following is an extract from an Environment Agency document discussing the options to reduce the contamination from St Leonards Court.
ST LEONARD'S COURT decision document part 1 Environment Agency July 2019.
91. Report F1 says it is unlikely, and the Agency agrees, that a sole location up gradient and preferable to [redacted] will be found.

92. However, additional scavenge pumping location(s) may be beneficial in significantly reducing the contaminant mass within the aquifer, reducing the overall time period for remediation and hence reducing overall cost. Furthermore, scavenge pumping up gradient of [redacted] may reduce contaminant concentrations sufficiently that treatment to potable quality can be undertaken at, or in the vicinity of [redacted] at an earlier stage than would otherwise be feasible.

The extract clearly states that additional scavenge pumping stations may be beneficial to reduce the contamination before it reaches [redacted] pumping station.

In order to protect our precious local supplies and to take the opportunity to speed up the reinstatement of [redacted] as a local supplier of drinking water we propose that an independent group supported by EA and Affinity Water be appointed to investigate the remedial methods as described by the Environment Agency.

7. Summary

- Ellenbrook Area Residents Association has major reservations about the Drought Management Plan 2022 in that it fails to make any reference to the threat to our water supplies from the bromate / bromide plume which is the biggest groundwater contamination disaster in Europe.
- The plan also fails to make reference to the fact that the scavenging operation at [redacted] has failed to reduce the threat from the contamination and there is also not an agreed way forward to deal with the contamination.
- The current operation at [redacted] is wasting a huge volume of water, circa 9 million litres per day, which is in excess of the volume of water used each day by Hatfield residents.

Despite this the plan makes no reference as to how this wastage can be minimised in the event of a period of drought conditions

Affinity Water Response
The purpose of our drought plan is to set out how we will manage a drought situation, and how we will ensure that we can continue to supply water to our customers and look after the environment during such an event. We acknowledge your concerns about the bromate contamination, however this is being actively managed through the pump and treat scheme at our HATF source and falls outside of the remit of our drought plan. In our Central region groundwater accounts for circa 60% of the total water we put into supply. Note that we use both groundwater and surface water sources and use them conjunctively to maintain supply resilience for our customers. If you wish to discuss any concerns relating to the above further, please feel free to contact our Corporate Affairs team, publicaffairs@affinitywater.co.uk.

3.18 Representation from Individual Respondent 1

Consultation Question	Individual respondent comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	N/A

	Affinity Water Response
No response required.	

Consultation Question	Individual respondent comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think	Insufficient communication

of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?	

Affinity Water Response

We are updating our plans for communications during a drought and this will be reflected in an update to our draft drought plan. We will work hard to ensure effective messaging during droughts to keep our customers informed as they develop.

Consultation Question	Individual respondent comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	Regional is fine

Affinity Water Response

Thank you, we will use regionally aligned communications and messaging when this is appropriate during a drought event.

Consultation Question	Individual respondent comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do	Yes

you support the use of river support as a drought permit mitigation option?	

Affinity Water Response
Noted.

Consultation Question	Individual respondent comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	They seriously underestimate the likelihood of drought measures - The 1 in 100 year, and >1 in 100 year measures have been required more than once in my lifetime so clearly the frequency estimates are completely out.

Affinity Water Response
The return period measurements for drought events have been calculated through our WRMP modelling work. The measures in our drought plan associated with the 1 in 100 year return period are drought permits, which we have never used in our operational history. Please see Section 3.3 in our main drought plan for more information about the probability of implementing drought measures in any given year.

3.19 Representation from Individual Respondent 2

Consultation Question	Individual respondent comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	Yes, as far as I can see this is good. So long as snail mail is used for older customers alongside digital methods .

Affinity Water Response
Thank you for your comments. We will consider the use of multiple channels of communications to ensure as many customers as possible during drought events.

Consultation Question	Individual respondent comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?	I would say wildlife ponds should be topped up, especially as the over use of water in Herts is so damaging to our wild rivers and streams

Affinity Water Response
We have eight augmentation schemes which are associated with our abstraction licences that require us to support flows in a number of our local rivers during periods of low flows and are aimed to help support river flows during periods of environmental stress.

Consultation Question	Individual respondent comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	Locally targeted strategies, although resource heavy, have the potential to be more accurate in their impact.

Affinity Water Response
We will use targeted messaging in more localised areas if this is appropriate during a drought event, for example if certain catchments are more affected than others.

Consultation Question	Individual respondent comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?	Our rivers have to be protected. I would rather the whole population stopped washing and stunk to high heaven than the rivers be irreparably damaged!

Affinity Water Response
We recognise that more needs to be done to ensure our local rivers are protected, and this is reflected in our company purpose to provide high quality drinking water and take care of the environment for our communicates now and in the future. Our environmental enhancement AMP7 programmes including our river restoration, catchment management, biodiversity and abstraction reductions contribute towards this. We will provide more information in our plan about our work to protect the environment and local river systems.

Consultation Question	Individual respondent comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	Overall good.

Affinity Water Response
Thank you for your comments.

3.20 Representation from Individual Respondent 3

Consultation Question	Individual respondent comment
We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and	Yes

methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?	

Affinity Water Response
Noted

Consultation Question	Individual respondent comment
We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?	Yes

Affinity Water Response
Noted

Consultation Question	Individual respondent comment
Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?	In general should be localised. If however an aquifer or river source is shared between companies then the approach should be for joint action. So 'regional' should mean the region of a combined water source, not say the whole of East Anglia.

Affinity Water Response
Noted. We will use a joined-up approach where this is appropriate, depending how a drought develops, as we know droughts can affect some catchments disproportionately. Where a dry weather or drought event is causing environmental stress in a particular catchment, we will ensure this is reflected in our drought communications and updates.

Consultation Question	Individual respondent comment
If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?	Absolutely not. In 2020 the Cam in Newport was completely dry for the first time I have witnessed in the 28 years I have lived here. But at Audley End House the Cam water was gushing over the ornamental waterfall, I assume pumped in from the aquifer at the [redacted] works. It gives a false impression that there is no problem and would negate the message about saving water. Also its affect seemed ineffective as not much further downstream at Gt Chesterford the Cam was still almost dry In general it seems perverse to pump the aquifers even lower just to look after short sections of a river when that will delay the recovery of upstream sections reliant purely on natural flow.

Affinity Water Response
We acknowledge your views about augmentation and in particular for the Cam. The upper reaches of chalk streams are ephemeral in nature and as such naturally dry due to the effect of a drought itself as well as from seasonal fluctuations of the water table. The purpose of our river support scheme is not to maintain flows in the whole river channel but to provide mitigation for the abstraction impact during times of low flow. We have augmentation points on the Cam and the operation of these is managed through licence conditions which are set by the Environment Agency. We also have monitoring points in the Cam catchment which will enable us to facilitate targeted communications during low flow conditions and we would align these with the Environment Agency where possible to co-ordinate messaging about low flows.

Consultation Question	Individual respondent comment
In general, what do you think of the plans we have set out for managing the impacts of drought?	The elephant in the room is ignored, as it was in a previous consultation on water use. Which is that water levels have been falling for a long time. The reason is endless house building. It is obvious to all that the problem is huge extraction for water supply, and that the housing growth being forced on dry areas cannot be supplied without making matters worse. There has been no long term downward trend in rainfall. I

understand that as a statutory provider Affinity you are required to supply regardless of ability, but despite being a statutory consultee on all of them you say absolutely nothing. You should be stating the reality against every application. Doing an updated drought plan is welcome but we need to address the source of the problem. Which is house building without consideration of the environmental damage, which in my village is serious on both levels and water quality. There is insufficient flow to dilute the agricultural run off or the poor quality output from the Anglian Water works, which is overloaded and has as far as I know, had no upgrade since construction in the 1970's

Affinity Water Response

Thank you for your comments. We have an extensive environmental monitoring network which enables us to assess for any long-term trends in groundwater levels. When examining long term groundwater level hydrographs from Chalk observation boreholes going back to the 1970s it is evident that the recharge (or lack of it) is the most significant factor in controlling the magnitude or duration of any drought. Some decades such as the 1980s did not see the same fluctuations as others and groundwater levels remained above average for more time. In the more recent decades however, the extremes are more frequent (droughts & floods) and their magnitude seems to have increased. We believe this to be a combination of land use changes and climate change. We agree that the water saving message needs to be reinforced in order to lower per capita consumption. In parallel we will continue working with various catchment stakeholders to improve water quality in the rivers and aquifers, decrease runoff, increase recharge and create nature-based solutions where possible. This also includes better collaboration with the wastewater companies, which are responsible for the treatment and return of water to the environment.

We address the requirements of additional demand resulting from new developments through our WRMP process, and we will be consulting on our new WRMP24 in 2022. In addition, we hope that creating sustainable communities should also be a priority for local authorities and developers, and water efficiency is a fundamental element of this. We are engaging with Local Planning Authorities (LPAs) through the development of their Local Plan and Infrastructure Development Plan processes, to ensure that their plans incorporate requirements for all new developments to utilise water efficient fittings and fixtures, and where possible to consider the wider water environment.

4 Appendices

In the following pages we have included full versions of the representations we received during our draft drought plan consultation, in the order they have been set out in our Statement of Response. Note that where some comments have referred to our specific production locations, we have redacted these for security purposes.

Representation on Affinity Water's draft drought plan

Final,

20 July 2021

We are the Environment Agency. We protect and improve the environment.

Acting to reduce the impacts of a changing climate on people and wildlife is at the heart of everything we do.

We reduce the risks to people, properties and businesses from flooding and coastal erosion.

We protect and improve the quality of water, making sure there is enough for people, businesses, agriculture and the environment. Our work helps to ensure people can enjoy the water environment through angling and navigation.

We look after land quality, promote sustainable land management and help protect and enhance wildlife habitats. And we work closely with businesses to help them comply with environmental regulations.

We can't do this alone. We work with government, local councils, businesses, civil society groups and communities to make our environment a better place for people and wildlife.

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Contents

1. Our summary of Affinity Water's draft drought plan

1.1 Introduction

This is the Environment Agency's review of Affinity Water's draft drought plan. We have a statutory duty to manage water resources in England. We aim to make sure that there is sufficient water for people, the economy and the environment in a drought. We are a statutory consultee in the water company drought plan (WCDP) process and provide advice to government on the plans. We have assessed Affinity Water's plan against the relevant legislation[1], the WCDP guideline and our other relevant guidance.

A water company's drought plan shows how it will provide a secure supply of water and protect the environment during dry weather and droughts. It is an operational plan that sets out what actions the company will take before, during and after a drought. It also sets out how it will assess the effects, including the environmental impacts of its actions and what it will do to monitor and prevent or mitigate these effects.

The government has set out its expectations of water companies' new operational tactical drought plans. This is to show that they:

- are environmentally responsible, will implement demand saving measures before asking to take more water from the environment and prioritise their least environmentally damaging supply measures
- will work collaboratively with stakeholders across the water sector
- will take actions in a clear, consistent and timely manner, will work collaboratively with neighbouring water companies and at regional level especially in relation to applying restrictions
- are application ready for any authorisations, drought permits and drought orders they are most likely to request
- will be proactive with their customers to reduce demand and in time for implementing their chosen drought management actions
- have identified actions they could implement in an extreme drought to delay the need for "level 4" severe drought restrictions

[1] Drought Plan (England) Direction 2020

1.2 Summary

Affinity Water has limited options to increase supplies during a drought. Many of the company's supplies are linked to high profile and sensitive chalk streams. Some of these supplies are subject to reductions in abstraction volume to protect the environment. There are some un-resolved issues in the plan that are significant to maintaining the security of supply and/or present a major risk to the environment during a drought. As a result we are recommending that the company revises its plan.

There is risk that the company's supply side actions will continue to cause lasting environmental damage at sensitive sites. This will be the case at least until its planned resource developments are completed in 2024, enabling the company to stop relying on drought permits and orders to achieve the required level of resilience. The risk could continue until the company's strategic water resource options are implemented in the 2030s. Affinity Water is also dependent on water transfers from other companies which may come under pressure during a drought.

The risk to sensitive sites means we are recommending that the company should review, with its legal team, whether it should plan to apply for a drought order if mitigation measures before, during and after a drought may not be sufficient to protect the environment.

Affinity Water published its draft plan on 4 June 2021 and the consultation will run until 30 July 2021. We consider that Affinity Water's draft drought plan only partially demonstrates that it will provide a secure supply of water and sufficiently protects the environment during a drought.

The draft drought plan is well structured and easy to follow. It shows improvements to communications and the commitment to the environment since the last plan. We welcome Affinity Water's commitment to the use of demand restrictions such as temporary use bans (TUBs) before drought permits are used to take more water from the environment. We also welcome the company's commitment to work with us to complete its environmental assessments and agree the sequence of its drought actions. We believe the company could further improve its communications about the actions it is taking and plans to take to protect sensitive chalk streams.

The company's environmental assessment reports (EARs) were provided shortly before publication of the draft plan, at the end of our review period. We have not had opportunity to finish our review and will complete this in time to inform the final plan. Our preliminary assessment of the EARs and discussions with the company show that there is uncertainty about the impact of the company's drought actions on the environment. This means the sequence of the drought actions cannot be decided.

We have concerns about the methods the company uses to assess the environmental impacts of the supply side actions, how it has defined the severity of drought, and the triggers for action. We will work with the company to agree this now that its EARs are published and provide more feedback as we complete our assessment. We expect the company to revise the reports following our advice.

The frequency of need, sensitivity of the sites and public interest all mean that it is essential that Affinity Water must be permit application ready for all its supply-side drought actions. In addition, it must agree with the regulators on the monitoring required to produce the up to date evidence to support these applications when they are required. There is a risk that a public hearing will be requested before a permit will be granted.

We recommend that the company completes the following in time for the publication of its final plan:

- provide the finalised environmental assessment, monitoring and mitigation plans, and prioritisation of supply side drought options. This includes consideration of whether it should plan to apply for drought orders instead of drought permits at some sites because of the sensitivity of chalk streams
- resolves the technical issues with determining the severity of droughts and related triggers
- clarifies the agreements and operation of bulk supplies between other companies during droughts
- aligns the levels of service in the drought plan and with its water resources management plan
- improves communications about the protection of chalk streams and measure their impact

2. Compliance with legislation

We have assessed whether Affinity Water has complied with the Drought Plan (England) Direction 2020.

2.1 The Drought Plan (England) Direction 2020

Section 3 of the Drought Plan (England) Direction 2020 specifies what should be addressed in water company drought plans.

Affinity Water has not presented enough evidence in its draft plan to demonstrate compliance with all Directions. The company should provide more evidence to show how it complies with the following.

Direction not complied with	Recommended changes to ensure compliance with Direction
(c) how the sequencing of measures has been designed to limit impacts on customers and the environment	See recommendation 1
(d) the magnitude and duration of the drought scenarios against which the drought plan has been tested to provide security of supply	See recommendations 1 and 2
(e) the permits, orders and any other authorisations that the water undertaker expects to need in order to implement the drought management measures in its drought plan including mitigation and prevention measures	See recommendation 1
(f) any pre-application steps agreed to ensure that the water undertaker is able to make any necessary applications in a timely manner to those bodies responsible for granting permits, orders and any other authorisations during the onset, duration and abatement of all droughts covered by its drought plan	See recommendation 1
(g) the measures that will be used to monitor, prevent and mitigate any adverse effect on the environment resulting from the implementation of drought management measures	See recommendation 1
(j) how the drought plan is consistent with the water undertaker's Water Resources Management Plan and any voluntary steps that will be taken to collaborate regionally on drought management measures	See recommendation 3

The Environment Agency's representation on Affinity Water's draft drought plan

3. Recommendations

We consider that the issues described in this section are significant to maintaining the security of supply and/or present a major risk to the environment during a drought.

Incorporating the following recommendations into its plan will ensure that Affinity Water can demonstrate that it is planning a secure supply of water and will protect the environment during a drought.

We have set out the evidence to support these recommendations in table 1 of Appendix 1.

Recommendation 1 – provide the required environmental assessment, monitoring and mitigation plans and sequence of supply side drought options (linked to Directions 3 (c), 3 (d), 3 (e), 3 (f) and 3 (g))

Affinity Water has completed some work on drought permit applications. It had not completed assessments of environmental impacts, monitoring plans and mitigation options for all its drought permits and orders by the time the draft plan was submitted to Defra. Much of the company's environmental assessment work is still under way. The EARs were provided at the start of the public consultation. This means we still need to complete our review of these reports.

A hydrological matrix screening method has been used to assess the environmental impacts of planned drought permits and orders. This is un-proven for the predominantly chalk streams in the company's Central Region. We have concerns about whether it is a suitable method and provides the correct results. The method has been used to categorise the environmental risks of the drought permit and order sites. We do not have sufficient confidence that Affinity water has:

- fully assessed the potential impacts of drought permits and orders on the environment including protected sites
- developed adequate monitoring and mitigation measures
- been able to select the correct sequence for its supply side measures

Without this information, it is not possible to see if the proposed actions have the correct sequence to protect the environment and water supplies. Some proposed drought permit sites may experience lasting environmental damage if they are used. Without adequate monitoring and assessment information, applications for drought permits and orders may be delayed or rejected.

We recommend that the company works closely with us to revise the method of impact assessment for drought permits and orders. It should agree a work programme and publish this in the statement of response.

We recommend that the company completes the following actions in time for its final plan:

- works with us to agree the method for selecting and categorising the risk to the environment of its planned drought actions
- reviews the hydrological matrix method used to screen environmental risks and provides evidence or an independent peer review to show whether it is suitable to set the sequence of actions

- uses an alternative method to set the sequence of actions if the hydrological matrix is not found to be suitable
- works with us to ensure the EARs allow effective sequencing of the drought permits and orders
- reviews the mitigation measures required at drought permit locations that could have a significant impact on the environment and clearly identifies all the planned mitigation measures in the plan
- reviews, with its legal team, whether it should plan to apply for a drought order if mitigation measures before, during and after a drought are not sufficient to protect the environment. Affinity Water should allow sufficient time in its plan for the required applications and decisions if drought orders are required
- be fully permit application ready for its planned drought permits and drought orders and is ready for any public hearing that may be requested

Recommendation 2 – resolve technical issues with determining the severity of droughts and related triggers (linked to Direction 3 (c))

We have several technical issues with the Affinity Water's approach to a number of areas in the plan related to the determination of the severity of droughts. The issues include:

- definition of worst historic drought
- setting of drought trigger levels
- selection of key observation boreholes
- use of river augmentation

More issues may emerge as our technical discussions continue. Affinity Water must resolve these issues so that we have confidence that the company can maintain security of supplies and sufficiently protect the environment. This must apply to all Affinity Water's resources zones for the full range of droughts in the plan.

We recommend that the company continues to work closely with us and resolve the technical differences in these areas. It should agree a work programme and publish this in the statement of response and include the results in the final plan.

Recommendation 3 – clarify the agreements and operation of bulk supplies between other companies during droughts

Affinity Water has shown the agreed quantities for bulk supplies to and from its area but not shown whether these will change during a drought. It is unclear how these will operate and whether there is a risk to security of supplies.

We recommend that the Affinity Water clarifies how bulk supplies with neighbouring water companies will operate during a drought. This should include both timing and quantities.

Recommendation 4 – align the levels of service in the drought plan and with the water resources management plan. (Linked to Direction 3 (j))

The level of service of 1 in 100 years for low risk supply side measures is more frequent than the 1 in 200 year level Affinity Water committed to in its Water Resources Management Plan (WRMP). This applies until 2024 to 2025. Affinity Water may need damaging drought actions to

achieve the 1:200 year level of service that is in the WRMP until 2024 when its treatment works is complete.

The 1 in 200 year level of service is not included in the drought plan but the company states that it will be reflected in the annual update of the plan. This creates confusion about the company's level of service. It may lead to delays in agreeing the implementation of drought management actions with regulators and other stakeholders. This is a risk to the environment and the company's security of supply.

We recommend that the company clearly includes the change to the drought level of service to 1 in 200 years by 2024-25 in the table describing the level of service and shows whether it plans to use drought permits to achieve 1 in 200 year until 2024.

Recommendation 5 – improve communications about the protection of chalk streams and measure their impact

Affinity Water's communication and engagement strategy makes limited reference to the impact of abstraction on chalk streams. This reduces the perceived benefit of the work the company and others are doing to improve sustainability and risks criticism from interested groups. The company's approach to measuring the impact and success of its communications strategy during or after a drought is not fully described. This means opportunities to improve communications about environmental protection and their outcomes will be missed. There is a risk that customers will not play their part during a drought. We recommend that Affinity Water should:

- strengthen the message in its plan about the impact of abstraction on chalk streams and how it will demonstrate its commitment to reduce abstraction
- include the measures and time scale for monitoring and evaluating its drought communication, both during and after a drought

4. Improvements

This section sets out our suggested further improvements to Affinity Water's draft drought plan. These improvements are in addition to our key recommendations set out in section 3.

We have set out the evidence and further details to support these improvements in table 2 of Appendix 1.

Improvement 1 - set out the engagement with regional groups and non-public water supply users, particularly Water Resources East

Affinity Water has described its engagement with Water Resources South East (WRSE) but has not included its engagement with Water Resources East (WRE) in its plan. Insufficient engagement with WRE may mean that the plan does not align with those of neighbouring companies. This is particularly the case for the implementation of restrictions and possible exceptions.

There is limited reference to non-household users, external groups and emergency organisations in the communications plan. We advise the company to update its draft plan to show how it will co-ordinate the actions consistently with other water companies, non-household customers and water retailers, particularly across Water Resources East. It should show what actions would be taken at each stage of drought.

Improvement 2 – refine the approach to reviewing the company's performance and monitoring after a drought

Affinity Water explains the proposed actions and communications with us and other organisations following a drought. The plan could be improved by including the timetable or milestones for the review.

The length of environmental monitoring after a drought is not defined. The sensitivity of the environment in Affinity's area means monitoring the impacts of and recovery from drought is very important. Without a defined timetable there is a risk that follow-up actions and impact of the drought and mitigation measures on the environment will not be known. Opportunities to improve drought management could be missed. We advise that Affinity Water should:

- include clearly defined timetables and milestones for post drought activities
- define suitable lengths of post drought monitoring under a range of drought conditions, and seek agreement with us

Appendix 1: Evidence report

Table 1 contains the evidence, details and reasons to support the recommendations we have made in section 3 of this representation.

Table 2 contains the evidence, details and reasons to support the improvements we have suggested in section 4 of this representation.

Note: If applicable, we will also have sent further minor comments directly to Affinity Water. These comments identify areas which would further improve the clarify of the draft drought plan, but we do not consider to be significant issues to maintaining public water supplies or are a risk to the environment during a drought. More details are available from the water company contact at the Environment Agency.

Table 1: Evidence report for recommendations

Major issues identified

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.

Recommendation 1 – provide the required environmental assessment, monitoring and mitigation plans, and sequence of supply side drought options			
Area of issue	Issue and evidence	Implications	Information or changes required
Issue 1.1 – Environmental assessment of drought plan	Affinity Water has completed some work on drought permit applications, but has not fully completed assessments of environmental impacts, monitoring plans and/or mitigation options for all drought permits (section 6-11), The accompanying site	Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and to ensure that adequate monitoring and mitigation measures are put in place to help minimise adverse	The company should complete as much work as possible to assess the impact of its drought permits for its final plan. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any

	EARs are also still being reviewed by the EA. The company needs to make it clear to its customers and stakeholders which permits are most likely to be needed in a drought and confirm that these are 'application ready', as required by the WCDP guideline. Further work is required to understand the impact of the company's drought permits on the environment and to ensure adequate mitigation and monitoring is put in place. This includes deciding whether the company should consider applying for drought orders, rather than permits, at sites that are subject to sustainability change due to the potential risk of impact to the environment at these sensitive sites.	impacts (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders where there is likely to be significant risks to the environment (for example at sites subject to sustainability reductions). Without adequate assessment of the impact of permits on sensitive species and habitats, suitable mitigation measures may not be put in place to minimise impacts (Directions 3e and 3f). As a result it is highly likely that drought permit applications will be delayed (due to increased likelihood of Public Hearings) and/or applications being refused. This is a risk to the environment and the company's security of supply.	outstanding work at other sites as soon as possible. We recommend the company refers to the dialogues and comments on the EARs we have provided since the last drought plan update and continues to work with EA Area Teams to complete the required work to an agreed timetable. The work plan should be set out in the statement of response and the results included in the final plan. Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and to ensure that suitable monitoring and mitigation measures are put in place to help minimise adverse impacts (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders if its assessments conclude that there is likely to be significant risks to the environment (e.g. at sites subject to sustainability reductions).
Issue 1.2 – Environmental impact risk categorisation and prioritisation of the drought permit and order sites	The company adopted the hydrological matrix approach developed by Ricardo to categorise the environmental impact risks of the drought permit and order sites. Whilst	Our assessment does not afford sufficient confidence in the environmental impact risk categorisation of the drought permit sites based on the hydrological matrix	The company should continue to work with the EA Area teams to agree the methodology for selecting, risk categorising, and prioritising its drought permits and orders sites under a range of

	this method may have been accepted for other areas or in previous rounds of plans, it is un-proven for the predominantly chalk streams in the company's Central Region.	methodology. Specifically, we have concerns on the criteria used for the negligible category, both their stated values and the extent to which hydrological uncertainty in their application is accounted for. This means that we could not agree to the prioritisation of sites and sequence of actions, even after further analysis from the EARs, if such sequence is based on the risk screening using hydrological matrix as we currently understand it. This relates to Directions 3 (b), (d) and (e).	drought scenarios, and to ensure its application on Chalk catchments is appropriate, to an agreed timetable. The work plan should be set out in the statement of response and the results included in the final plan. This include a review of the hydrological matrix for screening the environmental risks of the drought permit/order sites. We would also expect drought permits for the most sensitive sites only to be applied for after non-essential drought orders are implemented and for non-essential drought order to be implemented in-line with the company's stated levels of service.
Issue 1.3 – Monitoring of drought permit impacts	The draft plan includes an initial monitoring plan (Appendix 9) but lack details of locations and length of record of the company's current monitoring network. Further work is needed to ensure this fully covers the potential impact of its permits on the environment.	Including sufficient information in the drought plan in advance of a drought will allow timely determination of drought orders and permits. Without adequate monitoring information applications for drought permits may be delayed or rejected.	The company should complete as much work as possible to assess the impact of its drought permits for its final plan and identify and additional monitoring needed to support its assessment. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible.

		The plan also places a significant reliance on the EA's monitoring data, it is unclear how its own monitoring network supplements the data shared from EA. This could put security of supplies at risk and could lead to unnecessary damage to the environment.	The company should detail its monitoring plan in its EARs, including details for baseline monitoring, e.g. location, method, duration for each drought permit and work with local Area offices to complete the required work to an agreed timetable. The work plan should be set out in the statement of response and the results included in the final plan.

Recommendation 2 – resolve technical issues with determining the severity of droughts and related triggers			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 2.1 There remain questions and differences in opinions on a number of technical areas in the plan with regard to the determination of the severity of droughts. These include, but not limited to: Definition of "worst historic drought"; setting of drought trigger levels and the selection of key observation boreholes; as well as the definition of Exceptional Shortage of Rain.	During the pre-consultation and draft plan review process (Section 5 on) the EA has continued to discuss with the company, as technical details on these areas of the plan gradually emerged. EA is planning further engagement sessions with the company to discuss these and other technical areas and will summarise our decision in an addendum.	Agreeing the technical principle and approaches that the company uses to determine the severity of droughts are important so that we have reassurance that the plan is robust against the range of drought return periods it attempts to prepare for, for all the company's water resource zones.	We recommend the company to continue to work closely with the EA and resolve the differences in opinions in these technical areas, to an agreed timetable and publish this in the statement of response and final plan.

		It is also needed to demonstrate that the company's triggers and measures will enable the timely implementation of drought measures needed to secure supplies under a range of drought conditions.	

Recommendation 3 – clarify the agreements and operation of bulk supplies between other companies during droughts			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 3.1 Inter-company bulk transfers	Table 2 of the Plan summarises the inter-company bulk supply arrangements. Whilst it aligns with the company's WRMP19, it does not contain all the operation details about how these bulk supplies will be operated at different levels of drought severity, or the maximum volume that could be delivered at different timescales. As a result, it has not provided sufficient evidence that it can implement drought management measures in time to maintain supplies.	There is a security of supply risk if the volumes of water to be supplied in a drought, and timeline of delivery, do not align between Affinity Water and its neighbouring water companies.	The company should work with its neighbouring companies to align bulk transfer details in drought plans. This include the location, operational arrangements, maximum volumes that could be transferred at different times over the course of this drought plan, and any conditions restricting the volume. The company should state how any changes to these agreed transfers will affect security of supplies, the environment and restrictions for its customers in the revised drought plan.

Issue 3.2 Pain share agreements for inter-company bulk transfers	Section 4.4.3 and Section 7.1 of the main plan details the inter-company bulk transfers during drought conditions. There are very few formal pain share agreements for these bulk transfers.	Without pain share agreements, neighbouring water companies may continue to take the maximum volumes of water they are permitted to take whilst SWS may have to impose restrictions in a drought.	The company should confirm in its SoR and revised drought plan that not having pain share agreements does not pose a risk to its, or other companies' security of supply.

Recommendation 4 – align the levels of service in the drought plan with the water resources management plan.			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 4.1 Level of service in Table 1 of the plan does not align with that committed to in the WRMP19 for AMP7.	Level of service included in Table 1 of the Plan (low risk supply-side drought permits/drought orders to be up to 1 in 100 years, improves to > 1 in 100 years with the medium risk supply-side drought permits/drought orders) is lower than the drought level of service committed to in WRMP19. The plan's text (Section 3.3) states that investments included in WRMP19 means that the company aims to be resilient to a drought equivalent to a 1 in 200 year event without the use	Misalignment between the Drought plan and WRMP creates confusion on the company's drought level of service and may lead to delays in agreeing with regulators and other stakeholders on the implementation of drought management actions. This is a risk to the environment and the company's security of supply.	We recommend that the company explicitly includes the changing of drought level of service to 1:200 by 2024-25 in Table 1 of this plan in line with the WRMP19 and update the text in Section 3.3 accordingly.

	of drought permits or supply-side drought orders by 2024, in line with the WRMP19, but will only be reflected in the annual updates of the plan. As the time period covered by this plan goes beyond 2024, it is important that the level of service presented in Table 1 reflect the WRMP19 commitment.		

Recommendation 5 – improve communications about the protection of chalk streams and measure their impact			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 5.1 Discussion on the impact of abstraction on chalk streams and more emphasis on the company's commitment to chalk streams protection	Chapter 12 details the company's drought communication and engagement strategy. Chalk stream education is discussed in Section 12.1.5, but only with a very superficial mention of the long term effect of unsustainable abstraction from the Chalk aquifer "that abstraction can affect flows in chalk streams in certain conditions".	The brief and cursory mention of the company's abstraction impact on chalk streams, and current actions for chalk streams protection, down plays the significant benefit of ongoing sustainability reduction schemes and the company's chalk streams protection campaigns, on water resource conservation and drought resilience. This invites stakeholder criticism and disengages customers to do more for the chalk	The company should strengthen the message in recognising abstraction impact to chalk streams, and include the various programmes that the company is involved in to enhance chalk streams protection and water use efficiency, e.g. Revitalising Chalk Rivers, Save our Streams, Save 10 a day, etc. The company should demonstrate in the plan the commitment to abstraction reduction in general, and not be limited to drought conditions.

		stream environment, and water efficiency.	
Issue 5.2 Monitoring the efficiency of the communication strategy	Chapter 12.2 Discusses monitoring of the communication strategy. There is no suggestion on any measures to define the strategy's success, any tools to evaluate actions' effectiveness, or a time scale of the monitoring, either during or after a drought. There is also no timescale for any post drought monitoring on customer experiences of the impact or recovery of the drought.	Without a well-designed monitoring strategy there is no effective way to evaluate the quality and success of the drought communication strategy, or to collate lessons identified to further refine it. This risks miscommunicating the company's message and disengage customers, leading to unsatisfactory delivery of the drought plan.	The company should add specific and ambitious measures and time scale for monitoring and evaluating its drought communication strategy, both during and after a drought. The company should also include specific customer side information gathering and review process to better understand its customer experience. This should be supplemented by wider, year-round water resources communication, to further drive down per capita water consumption. This will create positive feedback to both maintain customer engagement and awareness of when dry weather/drought conditions may occur, and also improve the effectiveness of the demand management strategy.

Table 2: Evidence report for improvements

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.

Improvement 1- set out the engagement with regional groups and non-household water supply users, particularly Water Resources East			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 1.1 Engagement with Regional Water Resource Planning bodies, especially with WRE	There is good reference to working with WRSE, but no mention of WRE throughout documentation. WRE is a key Regional stakeholder for both the Affinity Central and East Service Region and the plan does not include sufficient evidence of engagement.	Insufficient engagement with WRE may mean that the plan misaligns with the regional priorities or plans of neighbouring companies, especially when talking about TUBs implementation alignment/exceptions, or does not utilise relevant data for particular WRZs, e.g. modelling work done for 1 in 200 and 1 in 500 yr. drought took climatic data from WRSE (pg. 23). There may be expected differences in historic and future droughts between the area covered by WRSE and WRE. This may mean incorrect application of drought zones or drought actions in the company's service areas in WRE and	The company should provide evidence on how it will engage with WRE, align the plan with its Regional priorities and resources utilisation, and check for potentially more relevant climatic data from WRE for modelling drought severity and drought actions.

		risk the company's security of supply.	
Issue 1.2 Insufficient reference to pressures on other sectors	The company has made little reference to pressures on other sectors that may need support, or could be used as triggers to initiate actions in its drought plan.	Lack of consideration to other sectors with water needs increases the competition of water use at a time of scarcity, which risks adding avoidable stress to the environment as well as the company's security of supply.	The company should include specific details for each drought zone actions to help other abstractors to improve water use efficiency, demand management, as well as drought resilience in its water uptake from the environment.
Issue 1.3 Drought communication strategy narrowly focussing on domestic customers	The company has not included sufficient information on how it will: • keep non-household customers, regulators and relevant organisations (such as local resilience forums, fire and rescue services and power plant operators) informed on how a drought is developing, the company's actions, how it might affect their supply and the actions they can take to help; • consider the different information requirements of household and non-household customers including vulnerable customers;	Drought communication strategy should include comprehensive considerations to all the company's customer sectors. The company has not sufficiently demonstrated the due diligence to the audiences that specific communications apply to, by differentiating the main messages for these audiences and tailoring the communication of its activities to each audience.	The company should include further evidence in its communication strategy on the points listed in this issue in its revised plan.

	• work with the National Drought Group • work with other water companies and regional water resources groups to operate consistently and effectively and provide joint regional messaging • engage with NAVs, water retailers for business and its expectations of them regarding water efficiency messages and restrictions including non-essential use bans • incorporate conclusions of the Consumer Council for Water's report 'Understanding drought and resilience' • develop joint communication plans with Retailers, other affected water companies or NAVS. Many of the above received only cursory mentions, or a single entry in Table 17 in Chapter 12.		
Issue 1.4 Firefighting	There is no information on how the company will mitigate any reductions in supply for firefighting as a result of its	The plan does not meet the requirements from Part 5 of the 2004 Fire and Rescue Services Act	The company should include this information in its revised plan.

	actions as required by Part 5 of the 2004 Fire and Rescue Services Act		

Improvement 2 – refine the approach to reviewing the company's performance and monitoring after a drought			
Area of issue	**Issue and evidence**	**Implications**	**Information or changes required**
Issue 2.1 absence of a clear timetable of post drought activities	The company sets out post drought communications with the Environment Agency and other key stakeholders in Chapter 11. This principally consists of meetings and workshops. There is no clearly defined timetable for these activities.	Without clearly defined timetable there is a risk of not suitably capture or agree follow-up actions, review efficacy of the management process, or whether any improvements or changes to the Drought Plan would be required.	The company should include clearly defined timetables to ensure the post drought activities are carried out in a timely way.
Issue 2.2 Absence of milestones	There are also no milestones to define the stages of the process (e.g. data gathering or report writing) of post drought review.	Without milestones, there is not a defined structure for the process to suitably capture or agree follow-up actions, review efficacy of the management process, or whether any improvements or changes to the Drought Plan would be required.	The company should include clearly defined milestones to ensure the post drought activities are planned, measureable, and effective.

Issue 2.3 length of post drought monitoring not defined	Environmental monitoring and assessment after a drought should be sufficiently long to generate useful data. There is no length of monitoring defined in either Chapter 11 of the Plan or Appendix 9.	Without suitably defined monitoring period, there is risk that the company will not gather the right amount of data to understand catchment response after a drought, whether hydrological triggers have recovered, or how the environment is recovering.	The company should define suitable lengths of post drought monitoring under a range of drought conditions, and seek agreement from the EA.

Date: 08 July 2021
Our ref: 359290
Your ref: Affinity Water draft Drought Plan Public Consultation

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Drought Plan Consultation (Affinity Water)
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Dear Secretary of State

Affinity Water Draft Drought Plan 2022 (dDP)

Water Industry Act 1991 as amended by the Water Act 2003 and Flood and Water Management Act 2010. Wildlife and Countryside Act 1981 as amended. Conservation of Habitats and Species Regulations 2017 as amended. Natural Environment and Rural Communities Act 2006. Marine and Coastal Access Act 2009. [1]

Thank you for your consultation on the above dated 04 June 2021 which was received by Natural England on 04 June 2021

We have considered the draft plan against the full range of Natural England's interests in the natural environment. Our response is attached in Annex 1 and a summary is given below for ease of reference. Policy and legislative context relevant to the advice is set out in Annex 2 to this letter.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development. More information on our role in advice to the water sector can be found in Annex 3 to this letter.

SUMMARY OF NATURAL ENGLAND'S ADVICE

- The dDP has not been considered under the Conservation of Habitats and Species 2017 Regulations as amended, known as a Habitats Regulations Assessment (HRA). An HRA has not been undertaken, despite risk to the Lee Valley SPA/Ramsar being identified in the EAR for the FULL, THUN and WHIH options.
- We do not concur with the conclusion that there are no likely significant effects on Habitats sites[2]. The screening does not identify all the likely significant effects on Habitats sites.
- The dDP has not been considered under the UK legislation by The Environmental Assessment of Plans and Programmes Regulations 2004 SI No.1633 (Strategic Environmental Assessment (SEA) process). The deficiencies in the SEA process are set out in Annex 1, and these should be addressed before the final plan is published.
- EARs are not application ready because an HRA has not been completed, there is a lack of baseline data and effective mitigation has not been identified. Natural England would

[1] Other pieces of legislation are relevant to the requirement to prepare a dDP but only a selection are referred to here.

[2] The Government guidance now refers to sites covered by the provisions of the Conservation of Species and Habitat Regulations 2017 as amended (Habitats Regulations) as 'habitats sites' in line with the wording in the National Planning Policy Framework.

welcome working Affinity Water to refine these.

- It is not clear whether the dDP has selected options with the least/ lesser environmental impacts in preference to those with greater impacts. This is due to the lack of detail about hierarchical selection based on environmental impacts.

If you have any queries relating to the advice in this letter please contact Kate Chandler on 07554338160 or kate.chandler@naturalengland.org.uk

Yours sincerely

Rachel Crabbe
Senior Water Adviser

cc:
Anneka Johnson-Marshall, Asset Specialist, Affinity Water
Rudi Liu, Water Resources Senior Officer, Environment Agency

Annex 1
Natural England's Advice on Affinity Water Draft Drought Plan 2021

The legislative and policy context for Natural England's advice is set out in Annex 2 to this letter.

Draft Environmental Assessment Reports (EARs) are part of the pre-application consultation on the drought options (orders and permits). As pre-application consultations they are within remit of Natural England chargeable services. Detailed comments on the EARs are therefore not included within this statutory response except in so far as they directly pertain to the conclusions of the HRA and SEA of the dDP.

1.1 Habitats Regulations Assessment (HRA)

An HRA has not been included as part of the drought plan or accompanying appendices. Affinity Water has stated that this is because they completed an HRA for their WRMP19, where "All of the actions we are posing within this drought plan were assessed".

WRMP19 contained an unconstrained list of options, and NE previously commented that it was not clear which were being brought forward to the drought plan. None of the drought options were scoped in to an Appropriate Assessment (AA), and supplementary advice to the conservation objectives (SACOs) were not considered during the HRA. Moreover, the RUNGS/RUNL drought option was not included in WRMP19, meaning that this has never been subject to an HRA.

The EARs include a screening stage for "NERC and notable species", "WFD Waterbody status receptors", Statutory and non-statutory designated sites, and "NERC Habitats and Local Wildlife Sites", followed with a more detailed assessment. However, they do not make reference to, or contain an HRA. It is also noted that the EARs for the FULL, THUN and WHIH drought permits identified a potential impact on Lee Valley SPA/Ramsar. This constitutes a likely significant effect, and should therefore be subject to Appropriate Assessment.

For these reasons, the permits are not application ready and the drought plan is not compliant with the legislation.

The HRA should do the following:

- Habitats sites and their interest features should be identified correctly. Affinity Water should determine an area of influence that goes beyond a standard radius, and consider hydrological pathways.
- Likely significant effects should be identified.
- Appropriate assessments must be carried out on all options where likely significant effects cannot be excluded on objective evidence.
- Appropriate assessments must have regards to the relevant sites' conservation objectives and SACOs where these exist. For Ramsar sites the overlapping SACOs and/or favourable condition tables should be used as a proxy.
- Any adverse effects on integrity should be avoided or mitigated so as to remove adverse effects with sufficient certainty.
- An in combination and cumulative assessment should be conducted.
- This assessment should influence selection of the drought option such that the least damaging options are selected first.
- There should be a detailed monitoring plan that reflects site features and supporting habitats.

1.2 Strategic Environmental Assessment (SEA)

The dDP has not included an SEA. Natural England was not consulted on a screening or scoping report to support this decision. As with the HRA, Affinity has stated that due to having completed an SEA for their WRMP19 where "All of the actions we are posing within this drought plan were assessed", it was not required for the dDP. Groundwater abstractions are listed as projects within

Annex II of Directive 2011/92/EU ("the EIA Directive") under '10. Infrastructure Projects'. Therefore, due to options impacting groundwater, an SEA is required, and the water company has not followed correct procedure. See Annex 2 for further details.

Within each EAR (with exception to the RUNGS drought permit option, which has not been subject to an EAR), a monitoring and mitigation plan has been included. However, only one of the nine EARs (THUN) has protected sites which have made it to the "further assessment stage" and have an approach to monitoring and protecting species. This option has not identified any mitigation actions for designated sites.

The SEA should be used to influence the options selected, and the order in which they will be implemented.

Cumulative impacts have been considered within the EARs in regards to other drought options. However, the water company should also identify impacts in combination with existing abstractions, plans and projects, and this should also be done at a strategic level within an SEA.

1.2.1 Protected landscapes

The plan has failed to comply with the policy and legislation as set out in Annex 2. An SEA should determine impacts on (protected) landscapes, and identify actions to mitigate those impacts.

1.2.2 SSSIs

The plan has failed to comply with the policy and legislation as set out in Annex 2. An assessment of the impacts on SSSIs has not been conducted within an SEA. Options to mitigate the impacts should be identified.

Within the EARs:

- Designated sites have not been appropriately described, and therefore it is possible that sites have been incorrectly screened out for "further assessment". One such example is the potential impact of AMER drought permit: within the citation for Hodgemoor Wood SSSI, it is stated that there are "…wetter flushes and muddy rides contain wood sedge, remote sedge and pale sedge *Carex sylvatica*, *C. remota* and *C. pallescens*…". Moreover, the site is notified for beech and yew woodland, which thrives in damp soils. Due to water-dependent features, the site should be screened in and looked at further. To prevent sites being over-looked, the water company should describe features, protected habitats and species.
- Assessment of designated sites have not been supported by existing data.
- Mitigation has not been consistently presented where potential impacts have been identified. For example, Affinity Water has not identified mitigation for impacts of THUN drought permit's impact on Lee Valley SPA/ Ramsar and Amwell Quarry SSSI.

1.2.3 Biodiversity

The plan has failed to comply with the policy and legislation as set out in Annex 2. The dDP and SEA should identify all the relevant habitats and species of principal importance for the conservation of biodiversity (referred to herein as priority habitats and species). They should take into account the duties to restore priority habitats and species, and determine a monitoring plan for these.

An assessment of impacts on priority habitats and species has not been carried out within an SEA.

1.2.4. Climate change

The plan has failed to comply with the policy and legislation as set out in Annex 2. There has not been an assessment of impacts of the drought plan which has taken account of climate change.. Though the plan has made reference to increased occurrences of drought conditions, and included an environmental stress trigger, the drought plan options have not adequately taken account of the need for wildlife to adapt to climate change.

1.2.5 Protected species

To be 'application ready' the drought plan Environmental Assessment Reports (EARs) should include a clear, timetabled approach to monitoring and mitigating any protected species potentially affected by options.

Throughout the EARs, priority species have not been properly assessed. Often, the impacts on water-dependent species such as great crested newt are determined to be minor, though hydrological changes as a result are predicted to be significant. Though timing and content of monitoring plans have been included, mitigation has not been explored in depth.

1.3 Water Framework Directive Assessment

Comments on WFD are a matter for the Environment Agency and Natural England has no further comments to make.

1.4 Draft Drought Plan 2022

1.4.1 Order of options and levels of service

The earlier drought triggers which respond to less significant periods of drought have focused on demand-side drought options, which is appropriate and measured. The water company has clearly outlined and evidenced the environmental and hydrological conditions that will trigger drought options, and explored whether the observational boreholes are appropriate.

The order in which supply side drought options will be used has not been made clear, nor justified based upon level of impact. Though a table of total water abstracted and changes in permitting levels has been provided within the main report, there has not been a comparison of relative damage predicted as result of using the drought permits. Affinity Water has not met the policy guidance provided in Annex 2.

The dDP seems to be planned so that the water company is resilient to a '1 in 500 year' level, and the water company should aim to achieve this by 2039 at the latest. There is some flexibility on this deadline if the local costs of achieving this are exceptionally high when compared to the benefits.

Within the appendices, the plan states that "The level of resilience and volumes required through our selection of drought permits is driven by modelling for our WRMP19". Though the main plan reports that Affinity Water assessed drought vulnerability to 1 in 200 and 1 in 500 year events, Appendix 7 suggests that the drought permits would provide resilience to a 1:200 year return period drought. Affinity Water should be working to ensure that the water company is resilient to a '1 in 500 year' level event by 2039.

1.4.2 Natural capital and resilient landscapes and seas

Affinity Water has introduced an environmental drought trigger to their drought plan. This is welcomed, in order to identify when more water needs to be made available to the environment. The environment will likely show signs of an impact of changing hydrological regimes before customer supply is compromised by drought, so this is a positive step towards meeting legislative requirements set out in Annex 2.

Within the main drought plan Affinity Water has addressed how it intends to improve operational resilience, and has reported on existing schemes which aim to increase habitat resilience to drought. However, it would be useful for the water company to conduct a natural capital assessment, and explore habitat enhancement options beyond river restoration.

1.4.3 Connecting people with nature – demand management

The main drought plan includes the AMP7 leakage performance commitment, presenting an aim of reducing leakage by 20% by March 2025. At each stage of drought (from Environmental drought trigger, to trigger 4), there is an action to enhance leakage reduction. The volumes to be saved are to be confirmed, based upon the amount of leakage at the time of reaching the trigger, so it is not known how successful this will be. Natural England would encourage this to be calculated, even if estimated and theoretical in nature.

Affinity Water has outlined clearly how customer communication will occur to influence demand reduction. Again, there is not an estimate or target of reduction in demand following these measures. This should be estimated based on the success of previous reduction campaigns, and inform predicted impacts on the environment.

Annex 2
Policy and Legislative Context to Natural England's Advice on Affinity Water Draft Drought Plan 2021

The Environment Agency's Drought Plan Guideline[3] (Section 6) states:

> "You *must demonstrate in your drought plan that you have met your responsibility to monitor, assess and where possible mitigate for the environmental impact of all your supply side drought management actions.*"
> "*You must carry out an environmental assessment and produce an environmental monitoring plan for each of your supply side actions in your drought plan.*"
> "*You must ensure that your environmental assessments meet all the expectations set out in the relevant environmental legislation.*"

The most relevant legal duties with respect to biodiversity and landscape with some of the relevant polices from the Government's 25 Year Environment Plan (25YEP) are set out below:

2.1 Habitats Regulations Assessment and Duties to Habitats Sites

Regulation 9 of the Conservation of Habitats and Species Regulations 2017 (S.I. 2017/1012) as amended (referred to as the Habitats Regulations) requires every competent authority, in the exercise of any of its functions, to have regard to the requirements of the Habitats Directive. This requirement includes restoring favourable conservation status. Regulation 10 places a duty on a competent authority, in exercising any function, to use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds. In addition, regulation 63 places obligations on competent authorities in respect of plans or projects likely to have a significant effect on a protected site. The Government guidance now refers to sites covered by the provisions of the Habitats Regulations as 'Habitats sites' in line with the wording in the National Planning Policy Framework and we have followed that nomenclature throughout this letter. Note that for Marine Protected Areas that are also Habitats sites and Ramsar sites the legal tests are the same as terrestrial/freshwater Habitats sites. In England, as a matter of policy, sites listed or proposed under the "*Ramsar Convention on Wetlands of International Importance*" receive the same level of protection as Habitats sites.

Water Companies have a statutory duty to prepare Drought Plans and so they are the Competent Authority for Habitats Regulations Assessment (HRA) of the dDP. The HRA should be clearly distinguishable document or section of the Drought Plan. The HRA should include:

- A list and/or map of all relevant Habitats sites.
- An appropriate assessment of the plan options unless, on the basis of objective information, a likely significant effect can be excluded by the screening of relevant Habitats sites.
- The appropriate assessment must identify all relevant adverse effects on integrity and uncertainties.
- All mitigation aimed at addressing likely significant effects or/and removing adverse effects must be covered within the appropriate assessment.
- Any options with residual adverse effects identified or where adverse effects are uncertain must have assessments under Regulation 64 (to determine that there are no alternatives with less or no adverse effects and demonstrate Imperative Reasons of Overriding Public Interest).
- All options with adverse effects must have secured compensatory habitat such that the coherence of the Habitats sites series is maintained.
- The HRA of the plan should include an assessment of the in combination and cumulative impacts of the plan with other plans and projects. The HRA should have regards to relevant caselaw and should take account of whether the site is meeting its conservation objectives for relevant features and attributes to the dDP options.

[3] Environment Agency how water companies plan for dry weather and drought hosted on the .GOV website.

2.2 Strategic Environmental Assessment (SEA)

The European Commission Directive 2001/42/EC "*on the assessment of the effects of certain plans and programmes on the environment*" is known as the 'SEA Directive'. It requires "*an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment*" (EC, 2001; Article 1). The provision is explicitly applied to plans made for "water management". The Directive is enacted into UK legislation by The Environmental Assessment of Plans and Programmes Regulations 2004 SI No.1633.

It is Natural England's position that environmental assessment is likely to be automatically required for drought plans in England, under reg.5(1) of the 2004 Regulations in most circumstances.

Under reg. 5(1) water undertakers must carry out (or secure the carrying out of) an environmental assessment (in accordance with Part 3), during the preparation of a plan or programme and before its adoption, if it meets the following tests:

> *"(1) Subject to paragraphs (5) and (6) and regulation 7, where—*
> *(a) the first formal preparatory act of a plan or programme is on or after 21st July 2004; and*
> *(b) the plan or programme is of the description set out in either paragraph (2) or paragraph (3)."*

The description set out in reg. 5 paragraph (2) is of a plan or programme which:

> *"(a) is prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use, and*
>
> *(b) sets the framework for future development consent of projects listed in Annex I or II to Directive 2011/92/EU of the European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment."*

Drought plans are prepared for water management purposes (reg. 5(2)(a)).

Drought plans also set the framework for future development consents (reg. 5(2)(b)). In this instance the future development consent in question is a drought permit or drought order. Drought permits and orders can grant consent for groundwater abstraction.

Groundwater abstraction is one of the projects listed in Annex II of Directive 2011/92/EU ("the EIA Directive") under '10. Infrastructure Projects':

> *"(l) Groundwater abstraction and artificial groundwater recharge schemes not included in Annex I;"*

In summary, drought plans (prepared for water management) set the framework for future development consents of a project listed in Annex II of the EIA Directive (water abstraction). As such, drought plans meet the description set out in reg. 5(2) of the SEA Regulations.

In these situations an environmental assessment (pursuant to Part 3 of the 2004 Regulations) is automatically require by reg.5(1). There is no need to consider whether the project will have any significant environmental effects by way of a screening opinion: the 2004 Regulations deem them to have such effects and an environment assessment must be undertaken.

However in the rare circumstances where a drought plan is not captured by the above an SEA may be required as the Regulations also states:

9.—*(1) The responsible authority shall determine whether or not a plan, programme or modification of a description referred to in* [the regulations….]— *is likely to have significant environmental effects.*
(2) Before making a determination [of not to undertake an SEA….] *the responsible authority shall*—

(a) take into account the criteria specified in Schedule 1 to these Regulations; and
(b) consult the consultation bodies [which includes Natural England].

(3) Where the responsible authority determines that the plan, programme or modification is unlikely to have significant environmental effects (and, accordingly, does not require an environmental assessment), it shall prepare a statement of its reasons for the determination.

These requirements are reinforced in the UK Water Industry Research Guidance on Environmental Assessment Guidance for Water Resources Management Plans and Drought Plans 2021 (UKWIR guidance) which reiterates the above, but also lists the following compliance risks in Para 3.4 to help water companies check they have complied with the legal requirements of SEA:

- *"Ensure that SEA Screening process has followed all the key screening stages if you have assessed that your plan does not require SEA*
- *Consultation requirements have been met in full (e.g. minimum 5-week consultation period for the Scoping Report, consulting all relevant consultation bodies where the plan affects more than one nation state)*
- *Demonstrating that alternatives have been considered and the reason for selecting the preferred plan is clearly set out*
- *Demonstrating that the SEA findings have been actively considered in the decision making processes for plan development*
- *Ensuring that cumulative effects of the plan with other plans and programmes are appropriately considered in the SEA*
- *Reporting requirements have been met for the Scoping Report and Environmental Report."*

2.2.1 Wildlife and Countryside Act 1981 as Amended

Section 28G of the Wildlife and Countryside Act 1981, as inserted by section 75 of and Schedule 9 to the Countryside and Rights of Way Act 2000, places a duty on public authorities, including water companies, to take reasonable steps consistent with the proper exercise of their functions to further the conservation and enhancement of SSSIs. These duties are mirrored in the general recreational and environmental duties placed on relevant undertakers in the Water Industry Act (1991) as amended. These duties not only apply to companies to remove their impacts but also to contribute to maintaining or achieving SSSI favourable condition. The Water Industry Strategic Environmental Requirements[4] (WISER, page 29) sets out the expectations for delivery of these obligations. Companies are expected *"to contribute to maintaining or achieving SSSI favourable condition both on [companies'] own land and in the catchments [companies] manage or impact on".*

The rate of improvement going forwards is set out in the Defra 25 Year Environment Plan which aims to restore *"75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term".*

2.2.2 Natural Environment and Rural Communities Act and Net Gain

Under Section 40 of the Natural Environment and Rural Communities Act 2006, every public authority, including water companies, must in the exercise of its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Conserving biodiversity in this context includes restoring or enhancing a population or habitat. Section 41 of the same act requires a list of habitats and species that are of principal importance for the purpose of conserving biodiversity (to which Section 40 duty applies) to be published. This list is referred to as Section 41 or priority habitats and species list.

The Defra 25 Year Environment Plan states "*We will achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife this includes[…] creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as*

[4] Water Industry Strategic Environmental Requirements (WISER) was published in 2018 which replaced the Defra statement of obligations. It sets out the statutory environmental delivery objectives for water companies in the 2019 price review and through their statutory plans including the drought plans. The equivalent document for PR24 is not available at time of writing.

part of a wider set of land management changes providing extensive benefits."

WISER (page 30) states water companies are expected *"to develop measures during the price review to contribute to biodiversity priorities and obligations on [companies'] own land or in the catchments [companies] influence and operate in*". WISER advises companies that they should "*consider whether [their] abstractions are truly sustainable, looking across a catchment as a whole and consider investment in integrated catchment schemes to improve drought resilience and water quality*".

In addition there are requirements for net gain in biodiversity in national planning policies.

2.2.3 Protected landscapes

Relevant Authorities (including water companies as a Statutory Undertaker) are to have regard to the purposes of National Parks (Section 11A (2) of the 1949 Act) and the similar duties towards Areas of Outstanding Natural Beauty (AONBs) (Section 85 of the Countryside and Rights of Way Act 2000) and the Broads (Section 17A of the Norfolk and Suffolk Broads Act 1988). Duties to further the natural beauty and rural amenity are also included within the general recreational and environmental duties placed on relevant undertakers in the Water Industry Act (1991) (as amended).

Protected landscapes are central to the delivery of aspirations in the Defra 25 Year Environment Plan to enhance the beauty, heritage and engagement with the natural environment. In addition there are requirements to consider protected landscapes in national planning policies.

2.2.4 Climate change

The Climate Change Act 2008 sets the legal framework for adaptation policy in the UK, preparing for the likely impacts of climate change. The 2nd Climate Change Risk Assessment (2017) identifies risks to water supply and natural capital, including coastal communities, marine and freshwater ecosystems and biodiversity, as among the highest future risks for the UK relevant to the water industry. The Defra 25 Year Environment Plan aspires to "*take all possible action to mitigate climate change, while adapting to reduce its impact*". WISER (page 54) *states "a priority for all should be to work together to build an evidence-based understanding of the likely effects of climate change and identifying and implementing low carbon solutions that address any negative environmental impacts that may arise*".

The National Planning Policy Framework paragraph 149 states that plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.

Inherent in the Defra objective above is the need to make wildlife more resilient to climate change. There are two key opportunities linked to climate change for wildlife for drought plans:

i) Reduce the impacts of abstraction and water supply infrastructure from current levels in drought and leave more water to enable wildlife to be more resilience to climate change in its current location

ii) To reduce impacts of abstraction and water supply infrastructure from current levels and leave more water to enable wildlife to adapt to climate change and move, in particular for those freshwater species to avoid saline intrusion by migrating upstream.

2.2.5 Protected species

Natural England Standing Advice for Protected Species is available on our website to help local planning authorities and others including water companies better understand the impact of their operations and development on protected or priority species should they be identified as an issue at particular developments or plans. This also sets out when, following receipt of survey information, the authority (or the undertaker in regards of the exercise of permitted development rights) should undertake further consultation with Natural England.

2.2.6 Marine Conservation Zones

Section 125 of the Marine and Coastal Access Act (MCAA) (2009) applies a general duty to public authorities to exercise their functions in a way that best furthers the conservation objectives of a Marine Conservation Zone (MCZ) or, where that is not possible, least hinders them. There is also an obligation to notify Natural England where a public authority's function might significantly hinder the MCZ's conservation objectives or significantly affect an MCZ. The relevant public authorities must take account of this duty in the assessment of the water company statutory plans including Drought Plans and Water Resource Management Plans.

The Defra 25 Year Environment Plan states "*We will achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife this includes[…]*

- *Reversing the loss of marine biodiversity and, where practicable, restoring it, [….]*
- *Increasing the proportion of protected and well-managed seas, and better managing existing protected sites.*"

2.3 Water Framework Directive

The Water Framework Directive[5] sets specific objectives for the protection of the water environment which include for surface water bodies the prevention of deterioration and achievement of good ecological status/potential. For groundwater bodies the objectives are to prevent deterioration and achieve good chemical and quantitative status.

The Defra 25 Year Environment Plan has ambitions to achieve a clean and plentiful water supply including "*improving at least three quarters of our waters to be close to their natural state as soon as is practicable by:*

- *Reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies.*
- *Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans.*

2.4 Drought Planning

2.4.1 Order of Drought Options and Levels of Service

The prioritisation of drought options use should take account of impact on the environment and should be ordered with the least potentially harmful options selected before those with potential environmental impacts. Where there is a choice, options with lesser environmental impacts are selected first in the plan but based on the identified impacts.

The Environment Agency's Water Resource Planning Guideline (WRPG)[6] describes levels of resilience that water company draft Drought Plans need to work to. The point of service failure is defined as "*implementing exceptional demand restrictions on customers, associated with emergency drought orders, such as standpipes*". The dDP should be planned so that the water company is resilient to a '1 in 500 year' level, and the water company should aim to achieve this by 2039 at the latest. There is some flexibility on this deadline if the local costs of achieving this are exceptionally high when compared to the benefits.

In relation to temporary use bans (TUBs), paragraph 4.7 of the WRPG states that water companies must set a "*planned level of service for other customer restrictions over the planning period*". The

[5] Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy is referred to as the Water Framework Directive or WFD and is enacted into law by The Water Environment (Water Framework Directive)(England and Wales) Regulations 2003

[6] EA Ofwat and NRW Water Resources Planning guidelines March 2021 hosted on the .GOV website

Drought Plan should illustrate the frequency that the water company plans to apply temporary use bans and non-essential use bans to household and non-household customers.

The dDP must illustrate how supply side drought actions will be prioritised to favour those with the least environmental impacts. The plan must also outline all the drought permits and orders that the water company might apply for under the range of droughts that they have assessed. However, the dDP must demonstrate that the water company will also reduce demand "*…voluntary savings through communications with customers, leakage reduction, operational changes to your distribution system and temporary use bans before you apply for a drought permit or order to take more water out of the environment*" as outlined in paragraph 4.2.1 of the Drought Plan Guideline. These voluntary savings should be carried out proactively and in sufficient time to have a material effect on water supplies and reduce reliance on drought permits and orders.

Paragraph 4.1.2 of the Drought Plan Guideline summarises how drought plans should ensure:

"TUBs are in place before you apply for any drought permits or orders between the 1st April and the 1st October (although this indicative period may be expanded to be earlier or later if necessary, for example due to weather patterns or high demand)

- *TUBs are in place long enough to have a measurable impact on your demand*

2.4.2 Environmental Assessment Reports (EARs) of drought permits and orders

The Environment Agency's (EA's)[7] Water Company Drought Plan Guideline (paragraph 4.2.1) instructs a water company to "*carry out as much preparation work as possible in advance of a drought event" and* states that Drought Plans should show that the water company is "*application ready for [its] more frequent drought permit or order sites… This will include an environmental assessment for each permit and order.*"

In addition, paragraph 1.2 of the EA's Environmental Assessment for Water Company Drought Planning – Supplementary Guidance[8] sets out an expectation for water companies to "*monitor, assess and where possible mitigate for the environmental impact*" of all its supply site drought management actions. The assessments should be used "*collectively to inform choices on when and how to use the different supply side drought management actions available",* for example "*to help… prioritise the use of options which free the most additional water supply with the least environmental impact".*

It also states: "*You must demonstrate in your drought plan that you have met your responsibility to monitor, assess and where possible mitigate for the environmental impact of all your supply side drought management actions.*"

2.4.3 Natural Capital and Resilient Landscapes and Seas

Defra's 25 Year Environment Plan encourages the growth in natural capital and measurement of ecosystem services. It states that "*over coming years the UK intends to use a 'natural capital' approach as a tool to help us make key choices and long-term decisions.*"

WISER recommends that companies consider how natural capital accounting can inform water industry planning. WISER recommends that companies trial natural capital asset accounts (including quantity and condition) and ecosystem service assessments (including qualitative and quantitative assessments) to help companies better understand the flow of benefits.

2.4.4 Connecting people with nature – demand management

Natural England's Conservation 21 seeks to drive a fundamental change in mind-set, to make a healthy natural environment a central part of health, wealth and prosperity. This includes encouraging the public to value the water they use. Defra's 25 Year Environment Plan aspires to reduce the risks of drought to the public by:

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[7] Environment Agency how water companies plan for dry weather and drought hosted on the .GOV website
[8] The Environmental assessment for water company Drought planning available on request by email to water-company-plan@environment-agency.gov.uk.

- *Ensuring interruptions to water supplies are minimised during prolonged dry weather and drought.*
- *Boosting the long-term resilience of our homes, businesses and infrastructure.*

Section 82 of the Water Act 2003 places an environmental duty on the water undertakers '*to further water conservation*', in addition to duties in the Water Industry Act (section 3(2)(a) 1991) to promote efficient use of water by its customers. The dDP should demonstrate that this duty has been taken into account.

Section 4.1 of the EA's Water Company Drought Plan guideline states that a water company Drought Plan "***must*** *set out what [the company] will do to reduce the demand for water during a drought. For example [it] could:*

- *…encourage customers (including through water retailers and businesses) to use less water*
- *carry out additional initiatives to improve household water efficiency such as targeted communications about water use and behaviour or providing information to customers about how to reduce plumbing losses…"*

"[The company] should consider the most effective way to reduce water demand and whether it is best to carry out [its actions across the] regional water resources groups, company as a whole or over a smaller area. This may vary depending on the approach [the company is] taking on leakage control or temporary use bans."

Annex 3
Natural England's Role in Advice to the Water Sector

Natural England was established under the Natural Environment and Rural Communities Act 2006 ("2006 Act"). It is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England has responsibility for ensuring that landowners and public bodies deliver objectives for European protected sites (Habitats sites) Ramsar sites (internationally important wetland sites) and the requirements for achieving and managing favourable or recovering condition for Sites of Special Scientific Interest (SSSI). Of particular note to water companies are the objectives introduced through the Water Framework Directive 2000/60/EC ("WFD") for Habitats sites protected areas, to achieve compliance with the standards and objectives (conservation objectives) of the water-dependent features of those sites by December 2015 (Article 4.2 WFD) unless derogated to a later date.

Natural England is also charged with helping to deliver objectives to biodiversity and landscape in Defra's 25 Year Environment Plan in addition to the statutory duties toward biodiversity under the 2006 Act. The 25 Year Environment Plan has themes relevant to water and biodiversity throughout the key objectives. Complementary to these objectives Natural England published '*Conservation 21: Natural England's conservation strategy for the 21st century*', setting out how to support the government's ambition for a healthy natural environment on land and at sea that benefits people and the economy. Underpinned by our focus on delivering better long term outcomes for the environment by working towards shared visions with partners, Conservation 21's three guiding principles are: 1) creating resilient landscapes and seas; 2) putting people at the heart of the environment; and 3) growing natural capital. In support of this, our response therefore provides advice, where appropriate, on how the plan can embrace an ecosystem approach, enhance natural capital and can support the conservation of biodiversity at a landscape scale.

Natural England continues to aim to work with the water sector to ensure that requirements for the protection and enhancement of the natural environment are met and that there is adequate opportunity for the development of more sustainable solutions. Protection and enhancement of the natural environment including biodiversity depend critically on delivering improved, integrated and sustainable land and water management.

CCW - The Voice of Water Consumers

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

It is positive to see that the company is applying the lessons learned from previous droughts, and using these to improve its engagement with customers. We agree that communicating with customers in preparation for a drought, and in a continuous and meaningful way during the drought will increase their awareness of the situation and act as a call to action to reduce their water use. The objectives and methods of communication described in the (draft) Plan seem appropriate and cover a wide range of stakeholders. It is encouraging to see that there are plans for specific communications for household customers, based on the segmentation exercise AFW has been doing for some time now. The Table in section 12 sets out the measures to engage with vulnerable customers. While these seem appropriate in principle, it would be great to see a commitment to provide communications that are tailored to vulnerable customers – not only in their content, but also in terms of the media used. At present, the (draft) Plan does not give a lot of detail as to how this would be done. Finally, something that could be explained better is whether as part of the recent customer segmentation exercises undertaken by the company, does AFW know which type of customers prefer what type of communications and when?

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

We agree with the proposals on how to communicate with customers in the event TUBs and NEUBs might be needed. As mentioned in the document, it will be important to have clear communications with customers, especially if TUBs are introduced in AFW's region, but not for neighbouring companies. Also, it will be important to clearly explain the exceptions that can apply to some customers during TUBs (i.e. Blue Badge holders on the grounds of mobility). What appears to be missing are actions to engage with NHH customers whose businesses which may rely on hosepipes/large amounts of water to carry out their business activities.

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

In our experience, drought tends to impact across company boundaries in the wider southern and eastern regions. In such situations, companies may be impacted to different degrees at any one time but are generally all facing the same developing situation putting increasing pressure on available supplies and the local environment. If drought triggers have not yet been met it will likely only be a matter of time before they are. Given the company patchwork in the south east, it makes communications and customer engagement much easier and clearer if there is a more co-ordinated, consistent approach. That said, if a company has particular demand challenges in "hot spot" areas a more targeted approach may be necessary to ensure all customers continue to receive reliable service.

If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

In general, we would agree with the use of river support as a drought mitigation option – not only to protect the environment, but also to ensure that services are more likely to remain reliable for customers. Even if river support is used as a drought permit mitigation option, we trust that AFW will continue to engage with its customers to explain the reasons for the possibility of using the drought permit and the actions customers can take to continue to reduce their water use to help protect the environment and their own water supplies.

In general what do you think of the plans we have set out for managing the impacts of drought?

The draft drought plan set out by AFW is very positive as it links drought actions to protect supplies for customers, the actions needed to protect the environment and how customers can help (primarily by reducing their demand). Also, it is reassuring to see how AFW is working with neighbouring companies (that are also part of Water Resources

South East) to ensure, as much as practically possible, a consistent regional approach. The document also sets out the challenges faced by the company – not only due to climate change, but also due to the unique environmental characteristics of the region, including the chalk streams. It is reassuring to see that the (draft) Drought Plan also mentioned the link between this plan and other regulatory plans, as well as the need for additional investment to improve the levels of service. Although intended for different audiences, the documents (main plan and non-technical summary) are easy to read and have the right level of information and explain in a clear, and sometimes graphic manner, the actions the company will take in preparation for and during a drought. One aspect that is particularly encouraging is the constant effort from AFW to engage with its customers and reinforce the message that their actions (water use) can affect the environment, and that changing their behaviour will have a beneficial impact for all. Finally, and as a suggestion, it would be great if the 'lessons learned report' (following a drought) included a section that looks at customer contact. If droughts were to become more frequent/prolonged, companies will need to be prepared to deal with potential increases in customer contact. It would be useful to record and analyse the nature of the contact as this can help to inform future company plans. This can also help to understand whether the drought and/or related measures have had an effect on the company's complaints performance and revise/reconsider any elements of the company's drought management plan that may have caused these.

Essex County Council Green Infrastructure Team

Affinity Water Drought plan comments

- The Draft Drought plan should mention the importance of integrating Green Infrastructure as a mitigating measure to help address or mitigate drought/ water stress.
- The South East of England has been designated as an area of 'serious water stress' and Green Infrastructure (GI) could be utilised to help reduce this;
    - Tree planting can help capture stormwater and recharge groundwater supplies
    - Rainwater harvesting can help reduce water demand and this can be included as part of GI. As much as 75 percent of the rainfall that lands on a rooftop can be captured and used for other purposes.
    - GI can also help to capture rainwater and also to recharge groundwater supplies through infiltration.
    - Green roofs should be encouraged as part of new developments and somewhere between 40 and 80 percent of the total volume of rain that falls on green roofs can be retained. Green roofs can also facilitate a more gradual release of the water.
    - Rain gardens can be used in a variety of settings – such as streets, rooftops and schools. These will generally be through plantings in a shallow basin. In addition to allowing evapotranspiration of rainfall or allowing it to slowly filter into the ground, rain gardens help recharge underground aquifers, keep stormwater from reaching waterways, provide habitat for wildlife, and can beautify a street or yard. In an analysis of Seattle area rain gardens, researchers estimated that each one can filter as many as 30,000 gallons of stormwater a year.
    - In areas where space is more limited planter boxes can be used to allow runoff to enter and be absorbed by vegetation and soil.
- Working collaboratively with catchment partners and key stakeholders to incorporate green infrastructure, such as schools, can help reduce water demand and manage water resources providing long term benefits to help reduce water scarcity.
- New developments provide an excellent opportunity to help capture rainwater at source through the incorporation of Green Infrastructure and can help reduce water demand through water re-use. This should be encouraged as part of any new development.
- GI implementation strategies like rainwater harvesting and infiltration facilities increase the efficiency of water supply systems, thus reducing strain on our groundwater aquifers.
- Green Infrastructure can also be used as part of SuDS as a hierarchy priority i.e. soft landscaping- this is referenced within our Essex suds design guide - https://www.essexdesignguide.co.uk/suds
- A number of Local Authorities in Essex have declared climate emergencies and have started to produce climate action plans and a number of Green Infrastructure Strategies that promote the delivery of multifunctional Green Infrastructure to provide a number of benefits such as mitigating and adapting to climate change (including drought). Essex has an independent Climate Action Commission that has identified a number of recommendations, including the use of land management and green infrastructure. I would also highlight two key strategies:
    - the Essex Green Infrastructure Strategy, 2020 (https://www.placeservices.co.uk/resources/built-environment/essex-gi-strategy/)
    - South Essex Strategic Green and Blue Infrastructure Study, 2020 (https://ca1-jsp.edcdn.com/downloads/South-Essex-Strategic-Green-and-Blue-Infrastructure-Study.pdf?mtime=20201223111609&focal=none)

Case Study 1: Rain Garden retrofitted at Basildon Hospital, Essex

Sponge 2020 Basildon Hospital in Essex

What is this case study about?

Basildon University Hospital is located in a Critical Drainage Area within South Essex, an area within the top 10 at risk from pluvial flooding nationally. To increase the resilience to surface water flooding Basildon and Thurrock University Hospital worked with Essex County Council and other stakeholders to retrofit Sustainable Drainage Systems (SuDS) in the hospital as part of the EU Interreg 2 Seas project Sponge 2020. This project is part-financed by the European Regional Development Fund.

What is the value of this approach?

The installation of SuDS allows areas to be adapted to slow down the rate of water entering conventional drainage systems and reducing the flood risk. However, incorporating more natural flood management techniques through the use of GI within the design and delivery of SuDS enabled the creation of a rain garden on the grounds of the hospital. This rain garden provides multiple functions and benefits of not only alleviating flooding, but a place for staff, visitors and patients to enjoy and relax, improve recovery rates, promote nature and adapting to climate change.

What has happened?

Activity/Outcomes

The creation of a rain garden at the hospital demonstrates how GI can be retrofitted in to existing urban areas. By adapting our critical infrastructure to utilise existing space to improve the overall sustainability and performance of a place to provide a wider range of uses with multiple benefits for people and wildlife.

Other principles met

How does it demonstrate the principle?

The rain garden delivers multiple benefits, including flood and water management, enhancing biodiversity, providing aesthetic value and providing a place to relax and recoup.

What are the lessons learnt?

The project demonstrates:

- That size doesn't matter – GI can be introduced on any site to alleviate flooding and encourage biodiversity.
- Co-benefits and duel functionality of SuDs.

Flood and Water Management

Kent County Council
Invicta House
Maidstone
ME14 1XX

Phone: 03000 417187
Email: alan.turner@kent.gov.uk

16 September 2021

Secretary of State, Department for
Environment, Food and Rural Affairs (Defra)
Drought Plan Consultation
Water Resources Department for
Environment, Food and Rural Affairs
Area 3D Nobel House
17 Smith Square
London
SW1P 3JR

Sent by email only:
water.resources@defra.gov.uk

Dear Secretary of State,

Response to consultation on Affinity Water's draft Drought Plan

Kent County Council (KCC) is grateful for this opportunity to comment on this draft Drought Plan of Affinity Water (AFW).

AFW supplies water to nearly 15% of the Kent land area, covering most of Shepway District, nearly half of Dover District and a small part of the Canterbury City Council area. These services are vital to the economy and environment and to the health and wellbeing of people. We therefore look to AW to provide high standards of service, including during periods of drought.

Overall, the plan is extremely clear and well presented. Section 2 entitled 'What is a Drought?' provides a very useful background to water resources and the nature of droughts and it explains clearly how they can affect the environment and agriculture as well as water supply systems. This is very important as droughts are seldom experienced by water customers and it can be difficult to maintain their awareness of the risks they pose.

Section 3 gives a very clear overview of the organisational responsibilities for drought planning, where AFW sits within that, and how the company collaborates with other organisations and regional and national groups such as WRSE and the National Drought Group. This section also explains the relationship with other AFW plans, notably the Water Resources Management Plans and the Emergency Plan, but a useful addition would be to also explain the relation with earlier Drought Plans. We understand that AFW has to follow Environment Agency guidance on the timetable for consultation and publication of its drought plans but the timing of the production and revision of these plans is becoming rather unclear: The current drought plan was consulted on in 2017 and covers the period 2018 to 2023; following an additional consultation it was revised in 2019; and we are now being

consulted on a new drought plan that starts in 2022 – a year before the current one ends. These plans are said to cover a 5 year period but this is the third time KCC has been consulted on drought plans in the last four years. With five water companies each covering part of Kent, it is becoming difficult to know which consultation documents to focus our limited resources on.

In future, it would be clearer if drought planning were to form part of water resources management plans, though we understand that this may be a matter for the water industry regulators rather than AFW.

We are particularly pleased to read that AFW has tried to align its drought triggers and actions with other companies in the southeast as this can help to ensure that the public receive clear and consistent messages during drought events.

Regarding the drought trigger levels, the actions to be taken in a drought, and the approach to communications, we are supportive of what is presented in the document.

In Section 13 and Appendix 8 drought permits are explained and the environmental impacts that expected from the additional 7.5Ml/day groundwater abstraction from the Dour catchment. It is pointed out that this would have little or no local environmental impact because the river in that location is ephemeral and would already be dry at that location during a drought and the only impact identified is that rewetting of that river reach might be delayed after a drought. However, we are concerned that this seems to focus only on risks to the nearby river reaches and may overlook the possible impact the abstraction might have by contributing to the drying up of the river further downstream and to increasing coastal saline intrusion. These potential impacts are not mentioned.

We appreciate that, in order to minimise the environmental impacts, much effort has gone into identifying drought permit sites that would be least affected by these abstractions, and that from 2025 the new 1:500 year level of service would mean that reliance on these abstractions would be a very rare occurrence. But, notwithstanding the steady, incremental improvements to drought planning process and methodology, the water industry approach appears to be increasingly out of touch with some of our most pressing current problems – it is still entirely focused on protecting public water supply, albeit with least harm to the environment, and it is hard to see how this contributes to today's big challenges such as nature recovery.

There appears to be no mention within the plan of other water users who abstract directly from the environment. There are clear inter-dependencies as these water users may well have to revert to mains water use if their own source dries up, thereby putting additional strain on AFW's network. And they might also be able to support AFW in a drought if they still have water available.

Yours sincerely,

Alan Turner
Water Resources Manager
Flood and Water Management

Uttlesford District Council

Thank you for consulting us on the Affinity Water Drought Management Plan Consultation.
Our response and questions are as flows:

1. The programme of proactively contacting people to reduce water usage in the event of a Drought Trigger event goes against the aim of reducing water use in general (see point 4 below)

2. In the event of Drought Trigger 2 you would accelerate the works to reduce water leakage. What measures are in place to step up this programme in an emergency and short space of time? Do you have the operational capacity to achieve this? If not then it would be difficult to avoid tipping into a Drought Trigger 3 situation which would contain severe and lasting / borderline irreparable ecological damage.

3. You note that "*We will also reduce our abstractions in chalk catchments by 27 megalitres a day (Ml/d) by 2025."* Does this include forecast changes in land use / development or is this from the 2021 baseline?

4. You note that "*The South East is a severely water stressed region, so we work with local government to ensure that all new developments are designed to meet the best water usage standards. We want to help the people in our communities use water more sustainably and we run customer awareness campaigns and fit water meters to help achieve our aim of reducing per capita consumption (PCC) to 132.6 litres per person per day (l/p/d) by the end of AMP7."*
   4a) How do you intend to work with LPA planning departments? Will this be an active push, or advisory letters in response to development applications?
   4b) Is there not an aim to achieve 110ltr per person per day, rather than 132.6ltr?
   4c) There is no mention of rainwater harvesting – this could considerably reduce domestic water consumption by up to 1/3, just by replacing mains water with rainwater for flushing toilets and washing machines. What is the Affinity Water position on rainwater harvesting?

Please do not hesitate to contact us for any further consultations.

Best wishes

Chloë Fiddy
Climate Change Project Officer

Uttlesford District Council
London Road
Saffron Walden
Essex CB11 4ER

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E: cfiddy@uttlesford.gov.uk

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twitter.com/UttlesfordDC

Broxted Parish Council

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

Seems about right

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

No issues with these

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

regional.

If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

No - risks significant damage to rivers

In general what do you think of the plans we have set out for managing the impacts of drought?

They do not involve (or maybe just don't mention) any plan to reduce leaks from your pipes. Also as a long-term solution you should try to avoid having development (housing estates etc) take place in areas where water supply cannot be enough. You should be a statutory consultee on housing development so that local planning authorities must take water supply and drainage into account. If you cannot be a statutory consultee, there is nothing to stop you contacting local planning authorities to give your views on major and minor planning applications. This would help to reduce the number of households on new developments which discover that they have inadequate water pressure. By then it is too late to modify building plans. There are also communities which find, as a result of local developments, that they become short of water on a regular basis. Such problems should be foreseeable and should be included as part of your consultation and communication with local planning authorities. This would reduce the need for drought permit options which can only be a temporary solution.

CHALFONT St. PETER PARISH COUNCIL

Council Offices, Gravel Hill, Chalfont St Peter, Bucks, SL9 9QX
Tel & Fax: 01753 891582 email: clerk@chalfontstpeter-pc.gov.uk
Website: www.chalfontstpeter-pc.gov.uk

Clerk: Mrs Debbie Evans

Subject Field: Affinity Water
Drought Plan Consultation
Defra
Water Resources
water.resources@defra.gov.uk

By e-mail

21st July 2021

Dear Affinity Water Consultation,

Re: Affinity Water new Draft Drought Plan for public Consultation (deadline ends 30th July 21)

I am writing on behalf of the Chalfont St Peter Parish Council Amenities and Planning Committee.

Following our recent meeting on Monday the 12th of July 2021 and in response to your letter from 4th June 2021 our Councillors had the opportunity to review Affinity Water new Draft Drought Plan paper for public consultation and have made the following comments in response:

9. The Committee welcomed the Action Plan.
10. A Draught Prevention Plan should also be considered;
11. Better Communication and general public education including in schools for example should/ could be pursued explaining smarter and efficient water usage and how to use less water;
12. It would be beneficial to monitor current water resources available vs. average consumption;
13. It should be considered the impact of additional extraction and rivers drying out on the ecosystem (loss of wild life, food chain imbalance/ insect life/ natural habitats);
14. It should be considered looking into Climate Change and Sustainability Impact on water resources;
15. Water meters are essential and should be put in all new houses.
16. Our Committee is concerned that HS2 works will impact on the supply and quality of the water supply in our area.
    We believe the Environment Agency should make those reports/ studies on HS2 works impact on local water available to the public.

If you have any queries or questions please don't hesitate to contact us on:
Chalfont St Peter Parish Council
Ana Santos, Admin and Planning Officer
T. [redacted]
Email: ppo@chalfontstpeter-pc.gov.uk

Yours Faithfully,

Ana Santos
Admin & Planning Officer
On behalf of the Amenities and Planning Committee
Chalfont St Peter Parish Council

CC A&P Committee - Chalfont St Peter Parish Council

Colney Heath Parish Council
Affinity Water Drought Plan Response

Summary

CHPC support the general process but raise concerns about:-

Need for an upper Colne drought management plan to maintain minimum water levels and flows to protect the remaining flora and fauna.

Impact on Colney Heath Common due to low river levels.

- More frequent loss of water flow river Colne in the summer.
- Drying up of deep pools in hottest summers which from observations have been critical in supporting wildlife during drought.
- Loss or reduction in distribution of species within the area.
    - Water Voles (could be due to predatory species - mink)
    - Kingfisher
    - Native crayfish
    - Flora (4 species) as recorded in Colne consultation report November 1997 (Environment Agency)
    - Could be others spp. but do have data.
- Need to up to date monitoring.

Need for multi-agency response to protect and maintain river flows.

- **Maintenance of drainage network** to avoid rainwater being diverted into sewer network.
- **Planning and design policies** to protect existing water courses and flows into the river network.
- **E.g. Land at Roundhouse Farm** - blocked drainage ditches by poor maintenance and development over the network. Restrictions in the use soakaways due to close proximity to pumping stations, so all rainwater is to be diverted into the sewer network thus reducing river flows.
- **Number water extraction points** within or near the parish significantly reducing ground water levels Roestock and Church Lane Colney Heath, Bishops Raise Hatfield.
- **Demand on the water supply due to increased development** along the A414 (50,000 new homes) over the next 25 years all the groundwater comes from the same aquifer.

Colney Heath Parish Council
Affinity Water Drought Plan Response

Current state

Colney Parish Council understands that chalk streams do dry up in some summers, but situation on the upper Colne has been more frequent and more serve over the last 25 or so years. The more frequent hotter summer appears to be having a significant negative impact in the upper Colne area. But as the information is well out of date the actual current state is not fully known.

The parish council has over many years has raised the issue of water flows in Colne and the harm to wildlife in the area (letter from CHPC dated January 1998).

We note that schemes (Alleviation of low flow) have been implemented elsewhere in Colne Valley, but they are all either downstream or in feeder rivers to the Colne.

Impact on Colney Heath Common

- More frequent loss of water flow river Colne in the summer.
- Drying up of deep pools in hottest summers which from observations have been critical in supporting wildlife during drought.
- Loss or reduction in distribution of species within the area.
    - Water Voles (could be due to predatory species - mink)
    - Kingfisher
    - Native crayfish
- The Colne consultation report November 1997 (Environment Agency) records notable species
    - marsh foxtail *Alopecurus geniculatus* (declining Hertfordshire),
    - opposite leaved pondweed *Groenlandia densa* and
    - cyperus sedge *Carex pseudocyperus* both uncommon in Hertfordshire all recorded at Colney Heath.

- Rigid hornwort Ceratopgyllum demersum is uncommon in Hertfordshire but has been recorded sparingly from upper Colne.

Could be others spp. but do have data.

No up-to-date information, the most recent studies are now at least 25 years out of date, so up to date surveys and monitoring will be required.

Future

Colney Heath parish council supports the need for a drought management plan but would request the need for it to be multi agency approach.

The drought plan together with other agencies needs to protect water supplies, manage water extraction in the area while maintaining water flows into the upper river. The protection and maintenance of existing water courses will play a significant part but planning policy within the area will also have significant role.

Colney Heath Parish Council
Affinity Water Drought Plan Response

Draft Drought Management Plan 2021 Affinity Water -

We recognise the environmental pressures that these precious chalk catchments face, and we are committed to continuing to work with partnership organisations to protect water ecosystems, improve river habitats for wildlife and enhance biodiversity at our sites and throughout our regions.

Working in partnership with the Environment Agency, our Revitalising Chalk Rivers Programme6 (which includes the Rivers Ver, Lea, Mimram, Misbourne, Gade and Beane), has been expanded in the current five-year planning period (AMP7) to include the Upper Chess, Bulbourne, Colne, Ivel, Cam, Brett and Dour. The programme has thus far reduced groundwater abstraction and implemented river restoration works to improve over 120km of chalk streams.

The parish council notes the inclusion the Colne current five-year plan and hopes this will include the upper Colne area surrounding Colney Heath parish.

Need for multi-agency response – protecting and maintaining flows in upper Colne.

Maintenance of drainage network to avoid rainwater being diverted into sewer network.

Many of the existing drainage ditches both highway (HCC and Highways England) and agricultural are currently poorly maintained making them unsuitable for surface water drainage resulting in some sites alternative drainage method being required.

Planning and design policies to protect existing water courses and flows into the river network.

> Large areas within Colney Heath are Drinking Water protection zones therefore restricting the use of soakaways in new developments. If no suitable drainage ditches are available, then the surface water is diverted into the sewer network. Many of drainage ditches in the area are in a poor state of maintenance which was highlighted in a recent planning inquiry on Smallford Works site when HCC deemed the local ditches were unsuitable for surface water. The diversion of surface water away from drainage ditches then into the local river or aquifer in dry weather is making the situation worst by bypassing the upper River Colne.
>
> The upper Colne area around Colney Heath is near the source of the river so has a significant impact on water flows downstream, it must be also noted that area also has significantly lower rainfall than other parts of Colne Valley (map 2. 2)

Land at Roundhouse Farm (Bullens Green Lane) Planning application - Blocked drainage ditches by poor maintenance and development over the existing ditch network resulted them being unsuitable for surface water drainage so alternatives had to be considered. The restrictions in the use soakaways due to close proximity to Roestock pumping station and its source protection zone resulted all rainwater from the site will be diverted into the sewer network rather than support the river flow. While this is small area if repeated across the wider area would have a significant impact on river flows.

These factors are all significantly impacting upon summer river flows.

Number water extraction points within or near the parish significantly reducing ground water levels - Roestock and Church Lane Colney Heath, Bishops Raise Hatfield.

Increased reliance of Colney Heath pumping stations due to Bromate plume in St Albans-Hatfield area with Bishops Rise, Hatfield pumping station being used to purge the aquifer of contamination.

Risks to water supply and then river flows resulting from Bromate plume in the St Albans Hatfield area. The parish council are concerned that if the new area at Ellenbrook is given planning consent for mineral extraction the risks to the water supply are fully understood. If it was to spread additional contamination into the aquifer would then increase the demand on the Colney Heath pumping stations which in turn would impact negatively on river flow rates.

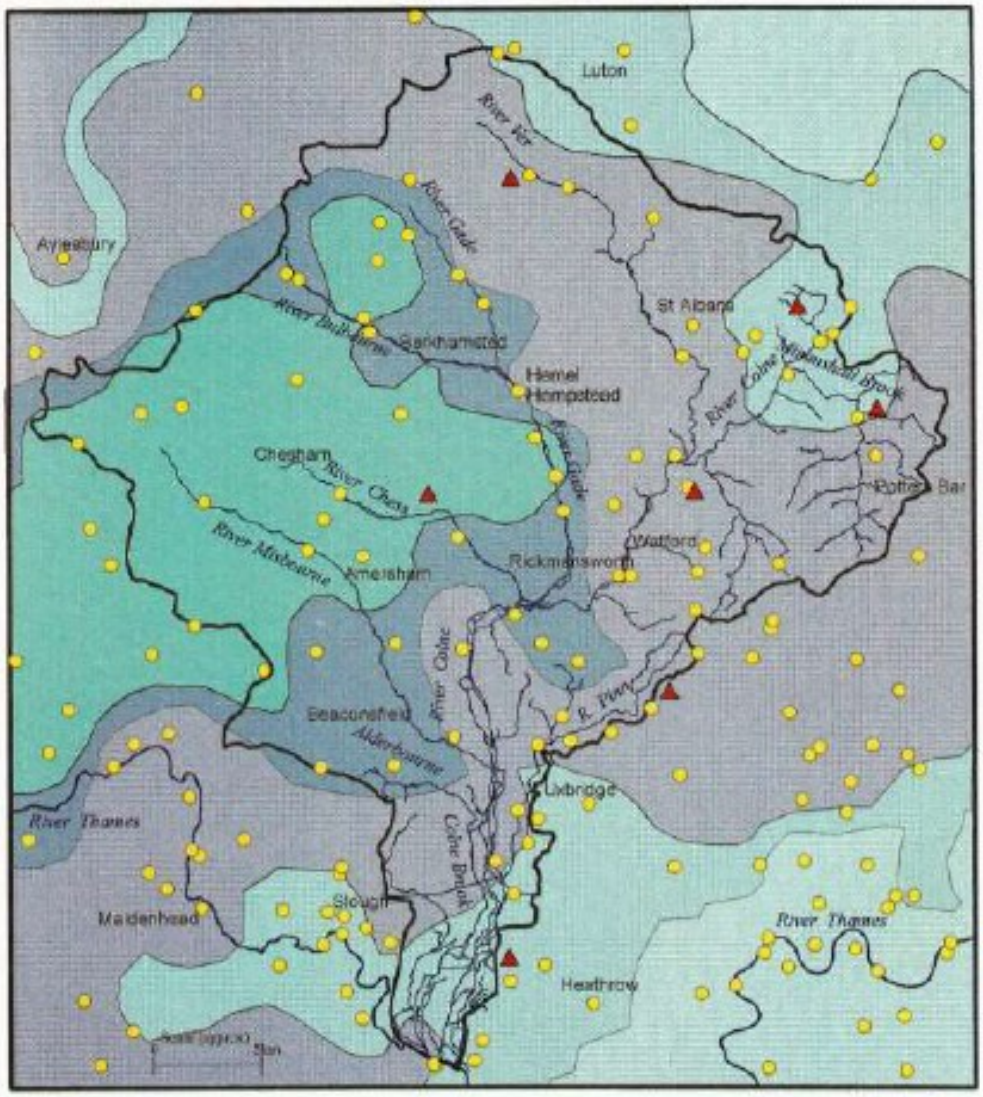
The parish council notes that number of pumping stations downstream including Oxhey have been closed and would question if this adding to the burden on the upstream pumping stations.

Demand on the water supply due to increased development along the A414 (50,000 new homes) over the next 25 years all the groundwater comes from the same aquifer.

The resulting demand for water needs to be considered in advance rather than resolving problems the harm caused at a later stage.

While its not drought plan issue any management plan will be to consider a flood management on dwellings surrounding Colney Heath Common.

Map 2.2 **Rainfall**



Ref. (3)

DRAFT reply to Environment Agency
LEAP.

10/1/98

Miss Aberline Nix
LEAP Officer
The Environment Agency
Apollo Court
2 Bishop Square
St Albans Road West
HATFIELD AL10 9EX

January 1998

Dear Miss Nix

COLNE LOCAL ENVIRONMENT AGENCY PLAN

Colney Heath Parish Council wish to make the following comments on the consultation report.

Issue 11
Greater priority should be given to the alleviation of low flow problems on the Colne north of the M25.
There is great public concern that the Colne has been dry at Coursers Road ,Colney Heath for two summers, and flow has still not returned even though it is well into winter. During November an EA officer was called to investigate deaths in the fish population on Colney Heath Common. As no pollution was found we assume that this was due to the river not flowing and remaining pools becoming deoxygenated by rotting leaves

Fortunately the river has continued to flow under the Church Lane bridge, being fed from springs on the Common [approximately level with the Village Hall]. We feel that these flow rates have been maintained because the Tyttenhanger pumping station, adjacent to the Common, and Roestock pumping station, about 200m to the north east, have been inactive for many months due to the Cryptosporidium problems. If this had not been the case we believe that the population of White Clawed Crayfish predominantly found downstream of the Church Lane bridge could have been adversely affected.

We believe that the two pumping stations will become operational soon and are concerned that when extraction is resumed the river may dry up completely during the summer months. We therefore request that an ALF for this section of the Colne be given the highest priority

Issue 7
Apart from the Parish Councils opposition to the siting of a St Albans incinerator on planning and traffic grounds, the Council also opposes the principle of incineration because the large capital costs force LAs into long term contracts to dispose of waste in this way which then make it uneconomical to consider alternatives such as digestion or separation.

Issue 9
The Council are concerned about the lack of action from the Agency and LAs with regard to removal of illegally tipped waste in the Colne floodplain. In particular, a large amount of soil, dumped alongside the river, east of Coursers Road, has been allowed to remain for several years, undermining public confidence in the effectiveness of the Agency enforcement policy, confirming to potential tippers that no action will be taken.

Issue 13
The Council hopes that any additional flood warning stations which would benefit the residents of Colney Heath will receive high priority. We also hope that a suitable flood alleviation scheme that can take account of the status of the Common as a nature reserve can be found.

Issue 17
It is a matter of concern to the Council that the deep pool directly downstream of Church Lane which was formerly maintained by the narrowness of the old bridge is now being degraded. The pool is important for its population of large [breeding size] fish and it also contained a good colony of native crayfish. We are worried that this colony may now be in decline because the pool is becoming shallower each year. We therefore strongly support the 'possible actions' listed and hope that the pool will an early project for restoration.

Issue 1
Parish residents are very concerned about this issue, surrounded as they are by past, current and future gravel extraction sites. Many residents remember what went into local tips in the days when there was less regulation and express considerable fear about contamination of water. The Council therefore, supports proposed action that would reduce the risk of leachate.

Yours sincerely

Caroline Pluck
Clerk to the Council.

Great Missenden Parish Council

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

We Great Missenden Parish Council, having considered the Draft Drought Plan you sent us for consultation on 9 June 2021 have agreed [unanimously] on the following response: * We applaud your recognition that this is a issue that needs to be addressed and the structured way in which you have done so. * We hope that both we and the public will be kept informed of your success in keeping to this plan in future years.

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

* We are, in general, supportive of the introduction of fully metered supply provided that steps are taken to protect those in social deprivation and/or with needs for above average usage.

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

* We share your particular concern for the chalk streams in Buckinghamshire, and particularly for the Misbourne that runs through our parish. This we value both for its wildlife and for its amenity value. * We have further concerns related to the affects on water tables and flows that the excavations for HS2 are reputed to be about to have that may render caution and care for these streams more important.

If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

* We are aware that Affinity does at time draw water from the aquifer related to this stream , and would agree that at times this is pragmatically reasonable. However we would like to see clearer criteria set for ceasing all such extraction at times when the streams are under stress, and measures planned for alternative sources of water and/or ameliorative measures.

In general what do you think of the plans we have set out for managing the impacts of drought?

* We are concerned that in your proposed plans, increased capital expenditure and particularly enhanced activity to reduce leakage appear to be measures brought in reactively when a drought situation is well advanced rather than forward-looking proactive steps – “mending the roof while the sun shines” – as is most clearly highlighted in the graph in section 2.3 of your Non Technical Summary, which only shows “enhanced leakage activity” in the spring of the fifth year after the first of three dry winters! *We are of the view that any modest increase in charges that might arise from such a change of focus would be both publicly acceptable and justified. * We find it concerning that, although you report with reasonable pride the reductions you have made and plan to make to leakage, there seems to be no statement of what proportion of water supply is so lost. Thus we and the public have no way of assessing the appropriateness of these efforts.

Hatfield Town Council

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

Hatfield Town Council Summary response to Affinity Drought Consultation Summary • Hatfield Town Council has major reservations about the Drought Management Plan 2022 in that it fails to make any reference to the threat to our water supplies in Hatfield from the bromate / bromide plume, underground in Hatfield which is the biggest groundwater contamination disaster in Europe, causing [redacted] Pumping station to close in 2000 . • The plan also fails to make reference to the fact that the scavenging operation at [redacted] has failed to reduce the threat from the contamination and there is also not an agreed way forward to deal with the contamination. • The current operation at [redacted] is using an exceptionally high volume of water, circa 9 million litres per day, which is in excess of the volume of water used each day by Hatfield residents. This remedial action is on behalf of the whole of Hertfordshire preventing [redacted] being further contaminated. There appears to be no plan to curb this during drought. The plan makes no reference as to how this wastage can be minimised in the event of a period of drought conditions for Hatfield. • We believe The Environment Agency and Affinity should collaborate with an independent hydrogeology advisor urgently, to adopt the better remedial plan, as described in The Environment Agency "St. Leonard Court", review of remediation of the bromate plume - published in 2019 to save water, and protect future water sources.

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

Please see our full response emailed to you.

In general what do you think of the plans we have set out for managing the impacts of drought?

Please see our full response emailed today.

Hatfield Town Council

Affinity Consultation on the Drought Management Plan 2022

To: Affinity Water Limited
Tamblin Way
Hatfield
Hertfordshire AL10 9EZ

26th July 2021

Hatfield Town Council Response

1. This document has been prepared by HTC **on behalf of Hatfield Residents** and is in response to the Affinity Water Drought Management Plan Consultation.

   Affinity Water Ltd have asked Hertfordshire residents to complete a consultation; on a future drought condition and management that may occur in their areas. This is following unusual dry conditions in the winter months where the aquifers have not been replenished by rainwater.

   Affinity Water Have your say | Homepage (engagementhq.com)

2. Hatfield residents are extremely concerned that the plan fails to make any reference to the **known bromate /bromide contamination in the chalk** aquifer in Hertfordshire namely affecting Hatfield's water supply, and sources.

   Drought management is of special interest to residents in Hatfield being a focal point of historic contamination of the chalk aquifer in Hertfordshire. This was the result of the bromate & bromide pollution emanating from dumped chemical in sumps at Steetly chemical works in Sandridge. The plume spread underground from Sandridge in the chalk aquifer under Hatfield and nearby areas (Essendon, and Ware and Hoddesdon) between 1970 and 2000.

   It was detected by Affinity Water at [redacted] water pumping station (PWS) in 2000. The W.H.O introduced a standard in 2000 that no more than 10µg/l of bromate is now permitted in drinking water.

   [redacted] Water Pumping station recorded over 300µg/l of bromate in the groundwater. This led to [redacted] being closed except for remedial work (scavenging) of the contaminant. Re-direction of the water for Hatfield now comes from [redacted] PWS and local rivers. Later it was found that [redacted] PWS was also contaminated and put on a start - stop basis.

   Groundwater abstraction accounts for 60% - 80% of the water used for drinking purpose while the rest of the water comes from rivers and reservoirs.

   The lack of water in these aquifers, will fire various drought trigger points from 1 to 4, during drought conditions, the latter being the most severe. The first point is to appeal to the public to reduce water, activate network of intra-company transfer of supplies, the last point to reduce pressure and cut-off supplies.

   As there is a predominant reliance on groundwater abstraction in Hertfordshire to provide our drinking water, one would have assumed that any threat to the water supply would be of major concern to Affinity Water. Our concern is that on scanning this document – Drought Management Plan 2022- it appears to ignore the problem of contamination in the chalk aquifer and does not even mention the chemical bromate or bromide causing it. We are aware that this Hertfordshire case is serious- and considered the worst contamination of a chalk aquifer in Europe by Public Health England and EA .

3. Current issues with local water supplies that should be addressed in the Drought Management Plan

a) Wastage at [redacted] pumping station
It is clear that the [redacted] PWS is only used for remedial work and scavenging the bromate from the plume. It was closed as a public water supply in 2000, and has been pumping 9 **million litres/day** of waste water into the drains from 2007. It has two purposes; to remove bromate from the aquifer and deflect the plume from the [redacted]

For more information on the plume: Hatfield quarries and the plume – Ellenbrook Area Residents Association (ellenbrookresidents.org)

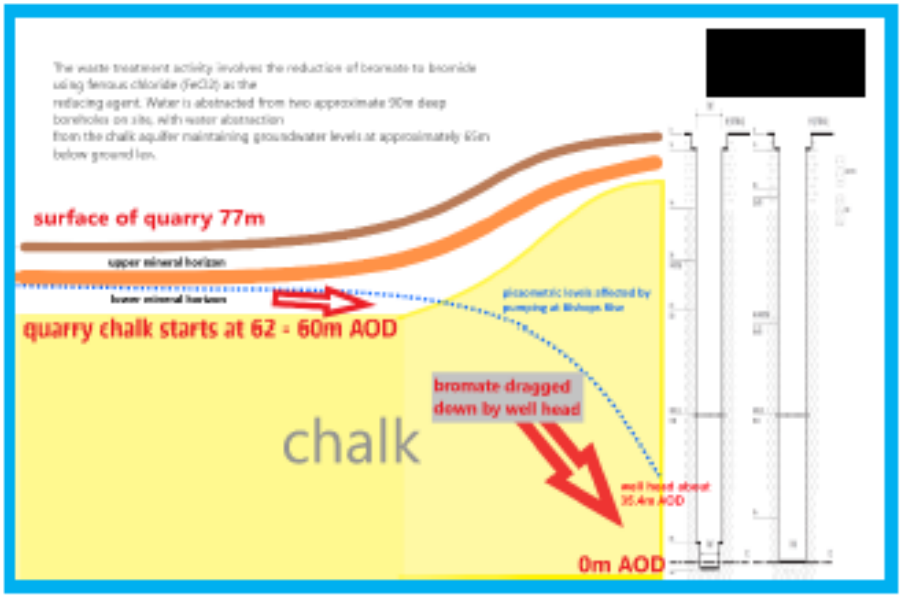
b) Remedial plan to release [redacted] from scavenging operation.

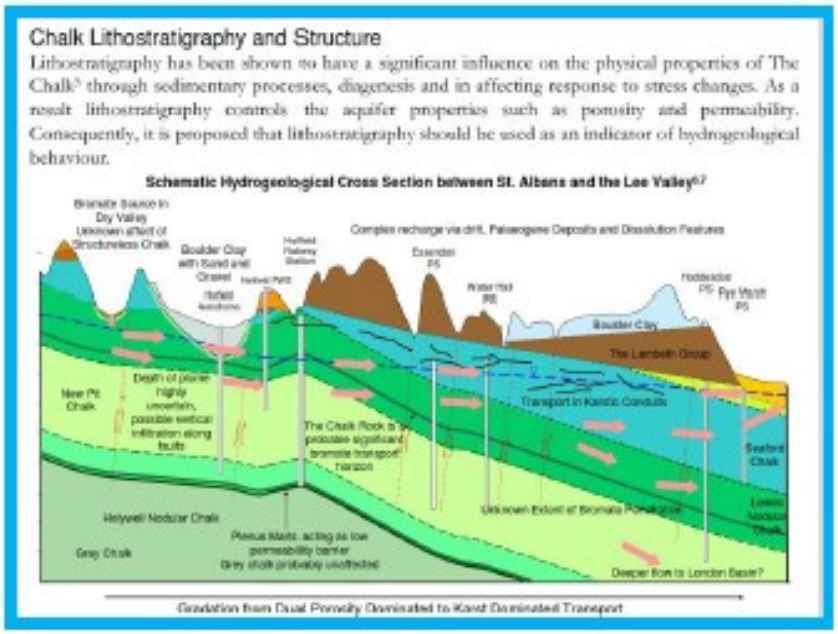
Although [redacted] has been pumping out bromate and treating it for 14 years it has not made much impression on bromate reducing it to 300 µg/l (micrograms in 1 litre of water).

We believe for the sake of our future water supplies that Affinity Water should work with the Environment Agency to achieve an effective remedial plan, hopefully to remove the bromate from localised Hatfield chalk aquifer – or hot spots in the plume.
This may release [redacted] from its scavenging duties in the future and allow it to go back to supplying Hatfield with water.

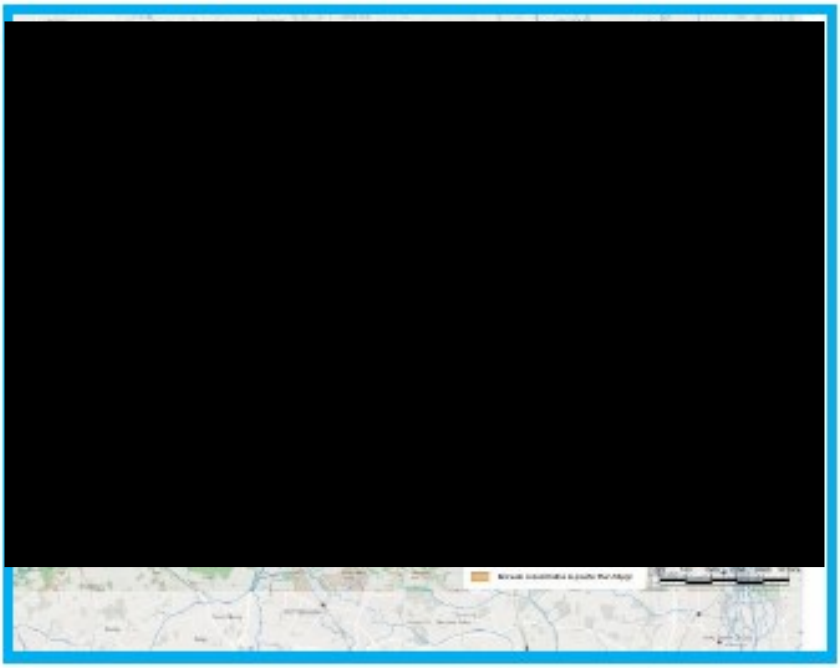
4. Position of the bromate in the aquifer

The depth of the plume at various locations is not clear, but borehole data suggests it is no more than 20m below the ground surface before it reaches Hatfield. It is mainly trapped in the primeval gravel and some in the chalk. The drawdown effect from [redacted] will certainly drag the contamination down to the well head through the chalk aquifer and therefore spread it vertically.
The contamination that escapes [redacted] draw will be 66.35m below Hatfield. It can be proved that the flow through the aquifer due to chalk adits and fissures will be faster therefore reaching [redacted] PWS and [redacted] towards the [redacted] much more quickly.





Note the flow from left to right – West to East – to Hoddesdon



The threat to our water supplies is that the plume is only [redacted] miles from [redacted] and [redacted] mile from [redacted] If the carcinogenic bromate levels exceed 10 µg/l then the water supply cannot be taken from these wells.

- [redacted] contribute about 8 mega- litres/day.
- [redacted] ½ mega- litres/day (but controlled by [redacted] pumping)
- [redacted] scavenging 9 mega- litres/day (not public water supply).
- [redacted] PWS on [redacted] near [redacted] (clean supply) but [redacted] miles away.
- Other sources including rivers & reservoirs, all treated at [redacted]

The remedial plan & maps can be viewed at: EAs Remedial Plan – Ellenbrook Area Residents Association (ellenbrookresidents.org)

5. Threat of Quarries

The original source of the bromate contamination came from the Steetley chemical factory in Sandridge. It caused a plume to travel in an easterly direction reaching and closing [redacted] PWS in 2000. Some of the intense parts of the plume can be mapped and shown to be prevalent under the existing quarries and proposed quarries.

The Brett Quarry (proposed)

The proposed Brett quarry is situated on a Protection Zone 2 groundwater aquifer. This PZ2 aquifer feeds the remaining [redacted] PWS actively supplying Hatfield with drinking water. The Applicant will remove sand & gravel from the [redacted] or lower mineral aquifer, where contamination may be present.
Sand and gravel would be worked "wet", that is, extraction in the lower aquifer groundwater. Water from this operation was originally going to be stored in a massive lagoon to the East of the site, however this idea was deemed unsafe due to cross-contamination, silting up, and flooding.

Despite the proposed quarry being rejected by Hertfordshire County Council, Brett are still pursuing the quarry application and as at July 2021 they are planning to appeal the HCC decision and alongside the appeal are also proposing a new application on the same site with minor variations.

With the threat of drought becoming heightened, EARA are concerned at Affinity Water's apparent lack of concern at the potential threat of quarrying on a site so close to public water supplies.

The following points are comments and objections made by industry experts during the recent quarry planning application.

Comments from Doctor Rivett: objecting to the quarry application on behalf of Hatfield Town Council and EARA

"1) The most significant groundwater-related problems stem from the proposed excavation of the lower mineral horizon (LMH) gravels located below the protective boulder clay, immediately overlying the Chalk aquifer groundwater resource.
This activity jeopardises:

- protection of the Chalk groundwater, the sole public drinking water supply to most in Herts;

- optimal remediation of the >20 km bromate groundwater plume, Europe's largest plume.

The quarrying activity fails to recognise the importance of the LMH gravel aquifer for wider protection of water supplies. Critically the proposed quarry, with 4 million tonne backfill, will permanently reduce the capacity of the [redacted] gravels to store and slow down the bromate plume causing increased bromate risks to downstream public water supplies and reduced remediation performance of [redacted]

Dr Michael Rivett FGS (**Contaminant Hydrogeologist;** Director, GroundH2O Plus Ltd)

Affinity Water objection – raising concerns about public water supplies

"Please treat this letter as an objection to this application, pending resolution of the detailed controls necessary to ensure that the proposed quarrying activities pursuant to the proposed permission do not affect the mobilisation of the existing plume of bromate contamination, and thereby render the water currently abstracted by Affinity Water at our [redacted] Chalk groundwater sources unfit for public water supply purposes."

"Our [redacted] sources are to the south of the existing location of the plume and are outside of its area of influence. There is a risk that quarrying activity could direct the plume towards the south impacting on existing public water supplies at [redacted] They are important

and long standing public water supply sources, and it is essential that an appropriate regime is in place to avoid the proposed quarrying activities impacting on the protection of the supply sources from the bromate plume. It is therefore critical that this matter is fully resolved before any permission is granted."

Julie Smith, Affinity Water, Head of Legal Services, 13th August 2018

Further comments from Doctor Rivett regarding the agreement reached between Affinity Water and Brett:

"6. Operating agreement between the developer and water utility – a note. It is noted that Affinity Water have been able to reach an operating agreement with the developers that appropriately allows them to be confident that operations can be agreed with the developers that will allow safeguard of public water supply. Whilst this is welcomed and does provide much needed assurance to the water utility and in turn their customer base, it is noted that the elements of control agreed under this operating agreement that have allowed Affinity Water to remove their original objections to the proposal are unfortunately not now transparent to the planning process and wider stakeholders involved. It is presumed likely that these agreements are substantially related to control of groundwater contamination risks and hence directly relevant to the concerns raised above. It would hence be reasonable to recommend, for transparency and benefit of all stakeholders, that the operating agreement relevant to the protection of public water supply (and controlled waters) is made available to allow critical evaluation of its effectiveness in achieving that protection and assuring safety of the planned quarry development."

Cemex Quarries

Affinity Water: comments on the planning extension to the Cemex quarry operation

"Surface runoff could end up in the lagoons that connect to the lower gravels/chalk, which may potentially deteriorate the water quality of the chalk aquifer. This activity may also change the groundwater level gradient and direct the plume [redacted] where our [redacted] abstractions are located."

Application reference PL/0963/18 for the extraction of sand and gravel at land adjoining Coopers Green Lane
June 2019

The existing Cemex quarries have been extended for the next 10 years. Affinity Water (quoted as above) raised concerns that surface water could end up in a lagoon. This could be similar to the picture below. Clearly Affinity Water have significant concerns about the impact of quarrying in the local area and the potential threat on the water supply at [redacted]

Cemex silt lake 2021

Environment Agency: comments on the planning extension to the Cemex quarry operation

"The planning application states that 'no mineral will be extracted from the lower gravels." Based on that affirmation, the submitted information demonstrates that it will be possible to fulfil these points and manage the risks posed to controlled waters by this development"

Land Adjoining Coopers Green Lane, Coopers Green Lane, Hatfield, Hertfordshire.
EA Feb 2020

Contamination (bromate / bromide) remedial plan

The following is an extract from an Environment Agency document discussing the options to reduce the contamination from St Leonards Court.

ST LEONARD'S COURT decision document part 1 Environment Agency July 2019.

91. Report F1 says it is unlikely, and the Agency agrees, that a sole location up gradient and preferable to [redacted] *will be found.*

92. However, additional scavenge pumping location(s) may be beneficial in significantly reducing the contaminant mass within the aquifer, reducing the overall time period for remediation and hence reducing overall cost. Furthermore, scavenge pumping up gradient of [redacted] *may reduce contaminant concentrations sufficiently that treatment to potable quality can be undertaken at, or in the vicinity of* [redacted] *at an earlier stage than would otherwise be feasible.*

The extract clearly states that additional scavenge pumping stations may be beneficial to reduce the contamination before it reaches [redacted] pumping station.

In order to protect our precious local supplies and to take the opportunity to speed up the reinstatement of [redacted] as a local supplier of drinking water we propose **that an independent group supported by EA and Affinity Water be appointed to investigate better remedial methods for safeguarding water for the population of Hatfield as described by the Environment Agency. A webinar by this group for HCC and Welhat Council and ourselves is now also relevant given the new application to HCC by Brett for a quarry .**

Summary

- HTC has major reservations about the Drought Management Plan 2022 in that it fails to make any reference to the threat to our water supplies in Hatfield from the bromate / bromide plume which is the biggest groundwater contamination disaster in Europe.
- The plan also fails to make reference to the fact that the scavenging operation at [redacted] has failed to reduce the threat from the contamination and there is also not an agreed way forward to deal with the contamination.
- The current operation at [redacted] is wasting a huge volume of water, circa 9 million litres per day, which is in excess of the volume of water used each day by Hatfield residents. Despite this the plan makes no reference as to how this wastage can be minimised in the event of a period of drought conditions.

For reference please see

https://ellenbrookresidents.org/2021/07/08/groundwater-contamination-by-dr-mike-rivett/

Little Hadham Parish Council

Thank you for sending this to our clerk of Little Hadham Parish Council. It has been shared with all the other members of the council. All seemed in agreement with the plan, some were interested in your ongoing work in conserving and protecting our rivers- here in the village it is the River Ashe which unfortunately is dry for much of the year, why I am not sure. We would be interested to hear how your plans for drought progress and also anything you can inform us about our part of the river. Please use our clerks email - clerklittlehadham@gmail.com for further communication.

Best wishes

Cllr Carolyn Westlake

Canal & River Trust

DEFRA
Water Company Drought Plan
3rd Floor
2 Marsham Street
London, SW1P 4DF

06 August 2021

Dear Sir/Madam,

AFFINITY WATER'S DRAFT DROUGHT PLAN CONSULTATION

The Canal & River Trust (the Trust) is the guardian of 2,000 miles of historic waterways across England and Wales. We are among the largest charities in the UK, maintaining the nation's third largest collection of listed structures, as well as museums, archives, navigations and hundreds of important wildlife sites.

We believe that our canals and rivers are a national treasure and a local haven for people and wildlife. It is our job to care for this wonderful legacy – holding it in trust for the nation in perpetuity and giving people a greater role in the running of their local waterways.

Thank you for the opportunity to review the Affinity Water draft Drought Plan 2022. We have no specific comments, however welcome the opportunity to work closely with Affinity Water to support the Drought Plan implementation when it occurs.

Yours faithfully,

Dr Adam Comerford
National Hydrology Manager

Canal & River Trust
Canal Lane Hatton Warwick CV35 7JL
T 0303 040 4040 E canalrivertrust.org.uk/contact-us

30 July 2021

Dear Sir/Madam,

Re: Horticultural Trades Association submission to Affinity Water Drought Plan consultation

Thank you for the opportunity to contribute to this consultation. The Horticultural Trades Association (HTA) represents the UK garden industry, including garden centres, DIY stores, commercial plant growers, domestic landscapers and manufacturers. The total ornamental horticulture industry is worth £24bn industry, with 560,000 supported in the UK.

In our response we note that the pressures of population and economic growth, and climate change are set to put pressure on water supplies in the coming years. It's vitally important that we act now to ensure adequate access to water supplies for the country. Our industry is ready to play a part in this and has begun work towards reducing mains water use through the HTA's Sustainability Roadmap (hta.org.uk/sustainability). As part of our Roadmap, we set out our goals for the industry on water use. These are:

- an aggregate **40% increase** in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers.
- an aggregate **25% increase** in the proportion of HTA members using water efficiency measures such as reservoirs and automated irrigation systems.

With these points in mind, we would make three key points in response to the consultation:

1. That the devastating impact of a ban on 'watering outdoor plants on commercial premises' on our members be recognised in the plan, and that an exemption for horticultural businesses be introduced in non-essential use bans.
2. That the temporary provision for 'watering newly bought plants for the first 28 days after the ban is introduced' be nuanced so that irrigation of plants and trees being introduced to green infrastructure projects can continue, and that longer term environmental benefit is not lost.
3. That Affinity Water (and other water companies) work with us to accelerate the introduction of measures and best practice that will reduce our members' reliance on mains water. This includes support for water capture infrastructure projects, such as more self-sufficient water systems like reservoirs and efficient irrigation systems.

We and our members already take water efficiency measures, including selling drought resistant plans, but we stand ready to support greater domestic water efficiency through disseminating information to gardeners on responsible watering in their gardens.

Thank you once again for the opportunity to respond, and we hope to work with Affinity Water and other water companies as a responsible partner in ensuring water resilience for the UK in the coming years.

Yours faithfully,

James Clark
Director of Policy and Communications

HTA Response to Affinity Water's drought plan

Background
The Horticultural Trades Association (HTA) represents the UK garden industry, including garden centres, DIY stores, commercial plant growers, domestic landscapers and manufacturers. In our response we note that the pressures of population and economic growth, and climate change are set to put pressure on water supplies in the coming years.

In 2017, research from Oxford Economics demonstrated that the ornamental horticulture and landscaping industry supported contributions of £24.2 billion to the UK's GDP and 560,000 jobs – around 1% of the UK's workforce.

It's vitally important that we act now to ensure adequate access to water supplies for the country. Our industry is ready to play a part in this, and has begun work towards reducing mains water use through the HTA's Sustainability Roadmap (hta.org.uk/sustainability). As part of our Roadmap, we set out our goals for the industry on water use. These are:

- an aggregate 40% increase in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers.
- an aggregate 25% increase in the proportion of HTA members using water efficiency measures such as reservoirs and automated irrigation systems.

Many members already sell and promote drought-resistant plants and have communication plans in place to consumers to improve water efficiency. However, we want to work with water companies in improving these communications.

The industry underpins many of the goals of the Government's 25-Year Environment Plan, including heightened levels of biodiversity and carbon sequestration, and since the first covid lockdown easing there are now 3 million new gardeners, making 30 million gardeners in the UK in total, relying on horticultural businesses.

The horticulture industry also supplies the green infrastructure that will increasingly present nature-based solutions to the effects of climate change, for instance in urban tree planting and greening projects and sustainable urban drainage systems. This is just one way that horticulture underpins the Government's 25-year Environment Plan.

The ornamental horticulture industry and water use
Water Resources South East, of which Affinity Water is part, has high concentrations of horticulture businesses in its catchment, particularly over 40 commercial plant and

tree growers and 245 garden centres; this means that significant employment in the area is provided by horticulture.

Specifically within Affinity Water's supply, there are 9 grower businesses who have a collective annual turnover of over £38 million. There are also many garden retailers who would sit under the same catchment; however, we understand that there would be exemptions on the ban for plants that are for sale.

These grower businesses supply plants to garden retailers and domestic and amenity landscapers, both locally and across the country. If plants grown in the southeast were to fail due to a lack of water, the consequences would be felt nationwide and the whole ornamental horticulture industry would be at risk.

In research presented at the 2021 Waterwise conference, HTA showed that UK garden centres and ornamentals growers accounted for around 20 million cubic metres of water per year compared with a total 5.3 billion cubic metres abstracted for public water supply. The business survey which informed the research found that the impact were mains and/or abstracted water were not available during peak operating periods would affect the survival of the business for 50% of commercial growers and 45% of garden centres; for almost all the others the scenario would have a 'serious negative impact'.

Our industry also plays a vital role in the design, planting and maintenance of green infrastructure. Examples of projects include the Government's Tree Action Plan commitment to planting 30,000 ha of trees per year, and the Queen's Green Canopy, a project to encourage people to plant trees for the Queen's Platinum Jubilee. UK production nurseries are key to meeting these targets. These projects are often years in the planning; however, these timeframes are small compared with the years and decades of environmental benefit they provide in terms of reducing urban heat island effects, shading benefits, and reducing the impact of heavy rains and flash flooding on urban drainage systems. However, in order for these planting schemes to succeed it is vital that plants be irrigated as they root in to their situations.

Our response to points in the proposed drought plan
In broad terms we welcome and support the principles of the plan. As noted, continuity of water supply plays a vital role to the employment and economic contribution our industry makes in the Affinity Water area, and nationwide. Our industry has innovated solutions for domestic gardeners to reduce their reliance on mains water and hosepipes for watering in the form of water butts and drip irrigation systems, and stands ready to help educate consumers around responsible water use in gardening.

We note that under non-essential use bans a there is a provision to ban 'watering outdoor plants on commercial premises'. The wording of this is ambiguous in the context of our industry and could be interpreted as a ban on irrigating commercial crops which would lead to huge commercial losses; essentially horticultural businesses would be treated in the same way as pubs looking to water a hanging basket. Such a ban would risk inflicting huge and lasting damage on our industry. The loss of what amounts to a cash crop would push a huge proportion of our member businesses into insolvency and would reduce the UK's capacity to produce plants and trees needed for tree the planting and urban greening goals envisaged in Defra's 25

Year Environment Plan. We would ask that an exemption be built into the plan for horticultural businesses, recognising the disproportionately serious impact water restrictions would have on our sector, especially in peak production periods.

We also note that under non-essential use bans the plan provides for 'watering in newly bought plants for the first 28 days after the ban is introduced'. In the coming green infrastructure projects such as tree planting and urban greening work have huge potential to provide nature-based solutions to the effects of climate change. The benefits on human health are also significant; according to the Office for National Statistics air pollution by UK vegetation averted 1,900 deaths per year in 2015 alone, and in 2018, saved over £1.2 billion in avoided healthcare costs

These ecosystem services pay back over many years and decades. However, a critical point in their implementation is in the period after planting when these trees and plants need to take root and establish themselves. Without adequate irrigation (which can be managed in a responsible way), these plants and trees will die, and the projects fail. We note that you propose an exemption to non-essential use bans for 'water-using activities which protect human health and safety'. We suggest that this be extended to activities which protect or benefit the environment and the UK's natural capital, and that exemptions based on a case-by-case review of the irrigation needs of green infrastructure projects be provided for in the plan.

Future opportunities for collaboration

As noted in our covering letter, our industry is already working towards greater water resilience and on reducing its reliance on mains water; we recognise the vital national interest in conserving the nation's water supplies. Our Sustainability Roadmap includes a target for an aggregate 40% increase in the proportion of water that comes from non-mains and re-used water sources such as rainwater or runoff capture among growers and retailers. In the research presented at Waterwise's 2021 conference, we reported that 32% of commercial growers and 50% of garden centres do not currently use rainwater harvesting systems but would like to; almost all the others are already using such systems. We believe there are solutions for businesses to rely less on mains water in this way, and feel it is a mutual interest of water companies. We therefore welcome engagement with water companies to achieve this goal.

We are working to raise awareness and share best practice and guidance between our member businesses and would like a dialogue with water companies on how this can be accelerated. Similarly, we would like to ensure that our members are able to promptly identify, and access regional or national funds or incentives designed to accelerate investment in water resilience measures and in infrastructure which utilises water in the most efficient way – such as reservoirs on site for growers and retailers and the latest water saving technology. In many cases this will not be a case of new funds or incentives specifically for horticulture businesses, but merely of ensuring that horticulture businesses are aware of and are included in eligibility criteria for such support. This would ensure that the horticulture industry can continue to provide so many environmental, and health and well-being benefits in the most sustainable way. We would welcome collaboration with Affinity Water and other bodies to this end.

Lastly, better data and information on our industry's water use and needs are vitally important to achieving greater water resilience in horticulture. We would like to

collaborate with the water industry in developing better data in the industry's national and regional water needs and the related economic dependencies on water supplies. This will enable us to identify and prioritise areas in which there are particular areas of commercial or environmental impact relating to water use in horticulture, and for us to work together to play a part in preventing future difficulties rather than reacting when problems occur.

In summary, we feel that it is in both the horticulture industry's and water sector's interest to ensure that essential products such as plants and trees, and the many benefits they provide to society and the economy, and most importantly to the environment, are not threatened by a lack of water.

We welcome future engagement with the water sector and look forward to collaborating together.

The Cam Valley Forum is an unincorporated association, registered with HMRC as a charity.
info@camvalleyforum.uk
https://camvalleyforum.uk

Chairman: Stephen Tomkins
Secretary: Alan Woods
Treasurer: Bruce Huett

30 July 2021

RESPONSE TO AFFINITY WATER'S DRAFT DROUGHT MANAGEMENT PLAN

1. We welcome the opportunity to comment on Affinity Water's Draft Drought Management Plan. The Forum is an association of local individuals with diverse environmental, recreational, academic and business interests, concerned directly or indirectly with the River Cam. Our mission is to defend the health and wellbeing of the Cam for its wildlife and environment and for people; safeguard its historical and cultural importance; and seek, through a reasoned and evidence-based approach, changes in policy and practice to enhance the water environment of the entire catchment.

Taking account of environmental needs

2. We are pleased to see references to the company's environmental responsibilities and the 81 specific references to 'Chalk' in the draft plan. However, we are concerned that the plan focuses almost exclusively on the company's activities to the south of the Chilterns; Affinity Water needs to give similar attention to the environmental impacts of its abstraction from the Chalk aquifer below the 'Cam, Rhee and Granta operational catchment' (the 'Cam' here). In 2019 this accounted for 22% of the 105 Ml/day abstracted from the aquifer (Cambridge Water taking 64% and Anglian Water 14%). In that year the Environment Agency also abstracted an additional 15 Ml/day from the aquifer to augment Chalk streams adversely impacted by these water company abstractions.

3. The long-standing impacts of over-abstraction on Chalk streams in the Cam catchment are proven and increasingly recognised by public bodies (see **Annex 1** for Cam examples). In the 'Achieving a Green Future' letter to water companies of 21/08/20, Defra and the regulators stated: '*Restoring England's internationally important chalk stream habitats is a government priority. Many suffer from low flows, poor water quality and habitat loss and we need your help to tackle these pressures.*' The Government's draft Strategic Priorities for Ofwat of 22/07/21 include: '*We expect companies to support environmental protection and enhancement of priority habitats such as chalk streams*.' These directions apply to *all* Chalk streams, not just to some of them.

4. Following Affinity Water's welcome commitment on 27/09/20 to restore Chalk streams on the south slopes of the Chilterns (www.affinitywater.co.uk/news/action-to-restore-chalk-streams) we asked the company whether this also applied to those on the north slopes. The welcome response from Jake Rigg on 16/10/20 was: '*I can confirm that our commitment applies to all chalk rivers not just those in the Chilterns*.' We encourage Affinity Water to reflect this commitment, and its global responsibility to care for and restore the Chalk streams affected by its activities, fully in all its policies, plans and relevant actions, including its Drought Management Plan.

Strategic priorities

5. As strategic priorities for abstraction that affects Chalk streams, we call on Affinity Water to:
   - **Reduce** abstraction from the Chalk aquifer in the Cam catchment *at source*, so that springs and headwaters run freely throughout the year, every year, whatever the weather.
   - **Reconfigure** the company's water supply systems by applying a 'Chalk-streams first' solution to the Cam, as it plans to do for the south Chilterns, supported by water transfers.
   - **Cap** Chalk aquifer abstraction at current levels, regardless of licence entitlements, and meet all immediate increases in public demand (new development is adding particular pressures in our local supply zones) via surface water transfers from Anglian Water.
   - **Reduce** water wastage through investment in leakage control, compulsory metering, and demand management in all its forms.

6. These obligations should be viewed as essential elements in Affinity Water's plans, not as bolt-ons. The company will have no business to operate if it fails to care for the natural capital assets on which its corporate survival depends - aquifers and rivers. The company needs to recognise and promote these as economic assets in their own right. Monies spent on substantial and needed improvements in their ecological health would then be reflected in an increase in asset value.

7. Affinity Water's performance commitments should similarly reflect local environmental needs. Customers in 'areas of serious water stress' - now including the whole Cam catchment - should no longer expect to have unlimited supplies of water all year-round, for all purposes, without limitation. Yet Affinity Water is still working to standards for the use of Temporary Use Bans and Non-Essential Use Bans that would be more appropriate for Scotland. Affinity Water should impose a Temporary Use Ban *every year* from 1 May to 31 August, to signal to the public that water is scarce and needs to be used wisely, rather than aiming to do this in no more than one year in 10.

8. Affinity Water's drought trigger levels should similarly reflect *environmental impacts*, not simply the availability of licensed quantities. The Environment Agency's approach to drought management should be fully integrated into the company's plans. Avoiding and alleviating environmental stress should be treated as being just as important as avoiding any impacts on public supplies. More robust action to restrict usage could then be taken much earlier than is possible now, with a better chance of avoiding the environmental damage caused by low or non-existent flows.

9. We also call on Affinity Water, Cambridge Water and Anglian Water to work much more closely *together* to develop a *whole-catchment* approach to tackling the environmental impacts of over -abstraction from the Cam Chalk aquifer. The companies share a common resource yet lack a common approach; they need to collaborate in finding effective short-term and long-term solutions. These need to be brought together, within the regional planning framework provided by Water Resources East, and built into their individual Water Resources Management Plans.

Learning from overseas experience

10. Water tends to be taken for granted in the UK. Many people will be surprised that no less than 15 water supply zones in the south east and midlands have now been designated as 'areas of serious water stress'. Other countries are much more aware of the scarcity and fragility of their water supplies. They have developed innovative approaches to water management of which there appears to be little awareness here, but these are no less applicable to the challenges we face. **Annex 2** sets out examples from South Africa, where restrictions on water use that are in place at all times can be progressively ratcheted up when dam water levels fall below key thresholds.

11. We have recently called on Ofwat to examine all such options and consider what role they could play in promoting environmentally-sustainable water use in the UK. The South African measures include many more practical and fiscal tools, incentives and penalties to control discretionary use than are available in the UK. Importantly the measures safeguard access to affordable water for the poor for all essential needs, so that no-one's health suffers, and that should be the case here too. We commend these approaches equally to Affinity Water in developing its policies and plans.

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ANNEX 1: CHALK STREAM CONCERNS IN THE CAM CATCHMENT AND THE NEED TO ACT

Environmental concerns

- 27 of the 29 water bodies in the Cam catchment depend exclusively on water from the Chalk aquifer.

- Three water companies together abstract some 105 Ml of water per day from the aquifer (42 Olympic swimming pools' worth): Cambridge Water (64%), Affinity Water (22%) and Anglian Water (14%).

- The devastating effects of over-abstraction on the extent and health of our watercourses and wetlands are set out in our 2020 report *Let it Flow!*. For example:
  - The complete loss or frequent drying of watercourses (e.g. the Wilbraham Rivers, Wardington Brook, Fowlmere, Granta).

- Loss and degradation of wetlands (e.g. Teversham/Fulbourn SSSIs reduced from 400 to 90 hectares since 1951).
- Countless local extinctions of wetland plant species, invertebrates, and fish species.

- The problem was recognised in some areas in the 1980s:
  - Some 14 augmentation schemes now support some 30 headwater streams.
  - These schemes abstracted a further 15 Ml/day from the aquifer in 2019.
  - The augmentation schemes 'rob Peter to pay Paul' and are not always effective.

- Climate change is not the cause of these long-standing problems (total annual rainfall has been more or less constant over the last century) but may well intensify them in the coming years.

- The ecological impacts of over-abstraction have been exacerbated by:
  - Point source pollution from the 37 Anglian Water sewage works and 69 other overflows, and the 39 private discharges (septic tanks, etc) that discharge into our streams.
  - Adding to the burden of treated wastewater, overflows in 2020 discharged raw sewage to Chalk streams at 19 locations, on 273 occasions, for 1,405 hours, in total.
  - Rural diffuse pollution (sediment, nitrate, phosphate, agrochemicals, etc).
  - Urban diffuse pollution (hydrocarbons, sediment, microplastics, etc).
  - Channel modifications, over many decades, and ongoing management.
  - Invasive non-native species (e.g. Floating Pennywort, Himalayan Balsam, Signal Crayfish).

Endorsement of the problem and the need for action

- Environment Agency (in correspondence): '*Our groundwater model suggests reductions in overall abstraction in the Cam catchment of 60-70% would be necessary to meet environmental flow targets, and hence contribute towards achieving good ecological status under the Water Framework Directive*.'

- Stantec *Integrated Water Management Study - Strategic Spatial Options Review* for the Greater Cambridge Shared Planning Authority: '*There is no capacity to increase groundwater abstraction from the Chalk aquifer. Future water demand and supply will need to be balanced in other ways*', including '*major new regional water supply reservoirs, transfer schemes and land use change*.'

- Cambridgeshire & Peterborough Commission on Climate: Initial recommendation: '*To provide for the investment to allow intercompany trading and water infrastructure improvements by 2025 to enhance water supply, including eliminating Cambridge's dependence on the groundwater aquifer*.'

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ANNEX 2: MANAGING DEMAND IN AREAS OF WATER STRESS - SOUTH AFRICAN EXPERIENCE

The following extracts come from section 4 of the Cam Valley Forum Report Let it Flow! of May 2020.

4.5.15 A more resolute approach is needed: demanding baseline savings at all times and further reductions as groundwater levels fall below key 'trigger' points. Experience from another water-stressed city, Cape Town, is relevant here. At one point towards the end of its 2015-18 drought, the city was expected to run out of water and sought to limit water use to 50 litres per person per day.

4.5.16 Under a new Water Strategy (Cape Town Government 2019), demand is now managed through baseline regulations (Cape Town Government 2020a). These restrictions are progressively tightened as necessary (Table 3). Level 1, which currently applies, has a target of 120 litres per person per day. For much of 2019 the target was 105 litres (Level 3). The restrictions target the use of hosepipes, sprinklers in gardens and sports fields, swimming pools, car washes, and water features. Water pressure is halved at level 3 and reduced still further under emergency measures.

4.5.17 The restrictions are widely promoted and highly visible. Water levels in the six key supply reservoirs are published weekly (Cape Town Government 2020b). There are also progressive tariffs linked to the targets for water use at each Level; increasingly higher charges apply as consumption rises. In the UK, any

suggestion that the price of water should rise appears to be anathema to politicians. This is short-sighted; the UK could usefully learn from other countries that see tariffs as an important tool to encourage wise use of water and discourage profligacy.

4.5.18 Other actions taken during the drought to save water (Parks *et al* 2019) included:

(a) **Installing water management devices in supply pipes to enforce daily limits** on water use; once the limit has been reached, the water is reduced to a trickle until the following day.
(b) **Reducing water pressure in municipal pipes**, not only saving water but also decreasing losses through existing leaks and the frequency of further leaks.
(c) **Publishing maps of water use** showing which households in affluent areas were achieving reduced daily water consumption targets
(d) **Equipping over 350 schools with smart water meters** to encourage and monitor water savings.
(e) **Introducing mobile applications**, for example to 'gamify' the experience of water saving.
(f) **Establishing business forums to encourage voluntary water savings** and sharing of good practice, and imposing strict limits on agricultural quotas for water.

Recommendation 12: For the Cam Valley, a comprehensive demand management plan should include:

(a) Defining a minimum baseline of mandatory restrictions on household and business use of water to be applied at all times.
(b) Defining further restrictions to be imposed as a matter of course at least in the four months from May to August every year (e.g. a ban on household use of sprinklers and hosepipes, including high-pressure hoses used to clean driveways and patios).
(c) Agreeing groundwater level 'trigger' points at which progressively more demanding restrictions on household and business use of water will apply.
(d) Rolling out smart water meters in homes, schools, businesses, hospitals and public buildings to enable continuous tracking of water use and encourage savings supported by effective training and incentives for building managers to reduce consumption.
(e) Actively reducing water pressure as groundwater 'trigger' points are reached.
(f) Installing water management devices in pipes supplying those customers whose use of water regularly exceeds guideline targets.
(g) Working with voluntary groups and the media to communicate the importance of water and water-saving messages to households and businesses.
(h) Learning from other countries about the costs and benefits of introducing progressive tariffs, linked to water supply 'trigger' points, to discourage profligate use of water.

Restriction measures	**Restriction Level**				
	Water wise	**Level 1**	**Level 2**	**Level 3**	**Emergency response**
Watering: hosepipe / sprinklers	Allowed (before 0900 or after 1800)	1 hour (Tuesdays and Saturdays)	1 hour (Saturdays)	Not allowed	Not allowed
Watering: drippers/drip line/soaker hose or bucket / watering can	Allowed	Allowed	Allowed	1 hour (Tuesdays and Saturdays)	Not allowed
Sports fields / parks (sprinklers)	Allowed	1 hour (Tuesdays and Fridays)	1 hour (Tuesdays)	1 hour (Tuesdays)	By exemption only

Swimming pools	Allowed subject to conditions (e.g. must have a cover)	Allowed subject to conditions	- Topping up allowed subject to conditions - No filling / refilling	- Topping up allowed subject to conditions - No filling / refilling	No topping up No filling
Car washing (privately)	Allowed	Bucket or high pressure/ low volume cleaner	Bucket only	Not allowed	Not allowed
Informal car washes	Allowed	Bucket or high pressure/ low volume cleaner	Bucket only	Bucket only	Not allowed
Commercial car washes	Allowed	Allowed	Allowed	Allowed	Not allowed
Water features	Allowed	Allowed	Not allowed	Not allowed	Not allowed
Other	(e.g. no hosing down of paved areas with potable water)	-	-	-	Additional emergency restrictions may be determined
Targeted water pressure (bar)	>2.4	>2.4	>2.4	>1.2	>0.5
Dam level trigger points	>80%	70%-80%	60%-70%	45%-60%	<45%
Water use target per person per day		120		105	100-70-50

Table 3: Cape Town restrictions on use of municipal drinking water.
Source: From a Table in Think water (Cape Town Government 2020a).

References:

- Cape Town Government 2019. *Our Shared Water Future: Cape Town's Water Strategy*.
- Cape Town Government 2020a. *Think water*.
- Cape Town Government 2020b. *Dam levels*.
- Parks R, Mclaren M, Toumi R & Rivett U 2019. Experiences and lessons in managing water from Cape Town. *Grantham Institute Briefing paper No. 29*.

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Affinity Water - Draft Drought Plan for Public Consultation

Thank you for the improvements that have been made since the previous consultation one year ago. We would like to question the Environmental Protection changes that have been suggested for the Central Region.

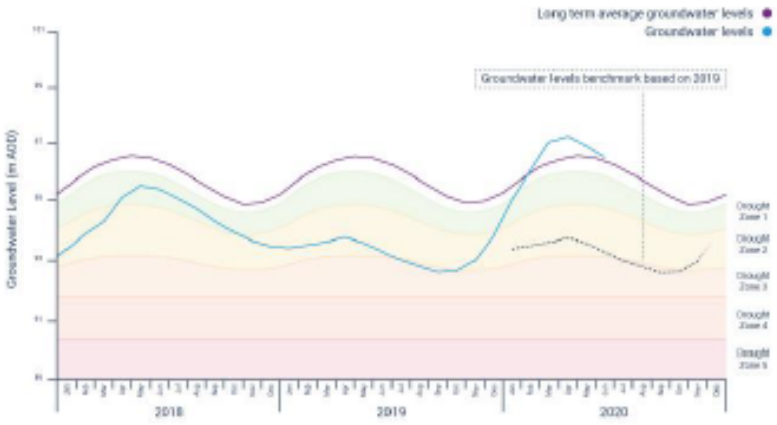
Welcome Improvements

As a stakeholder who cares about chalk streams and a Society who recognises early action from members of the public might allow even a small marginal benefit, we are delighted to see plans for earlier communication. The mantra of 'Educating, Informing and Taking Action' should make for better understanding which has been lacking in the past.

The review of drought permits to a much shorter list is helpful. The Ver is one of the first and worst to suffer in times of drought, so the removal of drought permit options in the Ver catchment is doubly appreciated.

More Adjustment Required to Protect the Environment

The chalk streams of the Colne and Lea catchments suffered very badly in the 2017 to 2019 period. In June 2019 groundwater at Lilley Bottom fell below the then trigger 3 level (new trigger 2) and by August there was barely a stetch of normal flow across the region.



1. Moving the goalposts

PLEASE REVIEW AND ADJUST THE TRIGGER LEVELS TO BRING IN MEASURES MORE FAVOURABLE TO THE ENVIRONMENT AT AN EARLIER POINT.

It appears that the new trigger levels have been adjusted so that in the future, with similar groundwater levels at Lilley Bottom to 2019, the new trigger level 2 won't even be reached. Recalling the dried-up chalk stream reaches, including the Ver through St Albans, it seems that TUBs won't even be on the agenda until conditions are worse than in 2019. In other words, the new trigger levels have moved in the wrong direction. The state of the river and public furore demonstrated then that more mandatory control (TUBs) was needed at an earlier point. Our members and others were calling for action - even protesting - for a hosepipe ban and other measures, all summer long.

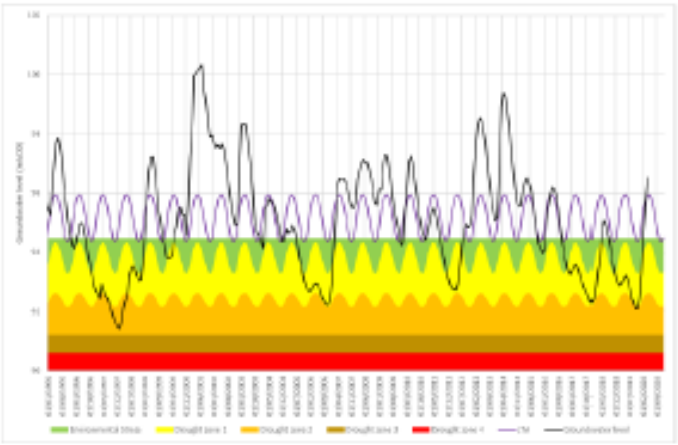


Figure 3: Lilley Bottom hydrograph with drought trigger levels

2. Trigger Level 2. A more accurate description

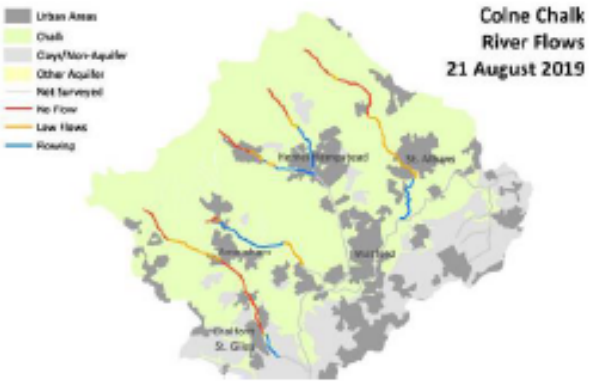
PLEASE ADJUST THE TRIGGER 2 NARRATIVE TO HELP REMIND ALL PARTIES OF THE ENVIRONMENTAL CRISIS OUR CHALK STREAMS WOULD BE FACING.

"Drought Trigger 2:…The impacts would be felt in the environment with flows in chalk streams noticeably declining, and upper reaches remaining dry."

The gravity of the environmental situation narrative for trigger level 2 is also very understated, some might say misleading. We've been at this point in recent times, so a more exact form of words to portray the circumstances should readily come to mind and would be a telling reminder to a wide audience.

Looking at the new trigger charts, the groundwater at Lilley Bottom will be lower than summer 2019 and therefore the rivers in a parlous state and the environmental situation very grave indeed. The mention of dry middle reaches, dead and dying large brown trout and numerous chalk stream fish rescues would better describe the likely scenario. Marginal ponds and wetlands will be gone too. (We well remember Emma Howard Boyd, Chair of the EA, visiting electrofishing on the Mimram in 2019, the EA's team also took fish from the Ver and the Misbourne among others.)

Flows in the chalk fed rivers – August 2019



John Pritchard
Chairman, Ver Valley Society

29 July 2021

Ellenbrook Residents Association

Consultation on the Drought Management Plan 2022

Affinity Water Limited
Tamblin Way
Hatfield
Hertfordshire AL10 9EZ

26th July 2021

1. This document has been prepared by the Ellenbrook Area Residents Association committee and is in response to the Affinity Water Drought Management Plan Consultation.

   Affinity Water Ltd have asked Hertfordshire residents to complete a consultation; on a future drought condition and management that may occur in their areas. This is following unusual dry conditions in the winter months where the aquifers have not been replenished by rainwater.

   Affinity Water Have your say | Homepage (engagementhq.com)

2. Ellenbrook Area residents are extremely concerned that the plan fails to make any reference to the known bromate / bromide contamination in the chalk aquifer.

   Drought management is of special interest to residents in Hatfield being a focal point of historic contamination of the chalk aquifer in Hertfordshire. This was the result of the bromate & bromide pollution emanating from dumped chemical in sumps at Steetly chemical works in Sandridge. The plume spread underground from Sandridge in the chalk aquifer under Hatfield and nearby areas (Essendon, and Ware and Hoddesdon) between 1970 and 2000.

   It was detected by Affinity Water at [redacted] PWS) in 2000. The W.H.O introduced a standard that no more than 10µg/l of bromate is permitted in drinking water.

   [redacted] accounted for over 300µg/l of bromate in the groundwater. This led to [redacted] being closed except for remedial work (scavenging) of the contaminant. Re-direction of the water for Hatfield now comes from [redacted]. Later it was found that [redacted] PWS was also contaminated and put on a start - stop basis.

   Groundwater abstraction accounts for 60% - 80% of the water used for drinking purpose while the rest of the water comes from rivers and reservoirs.

   The lack of water in these aquifers will fire various drought trigger points from 1 to 4, the latter being the most severe. The first point is to appeal to the public to reduce water, activate network of intra-company transfer of supplies, the last point to reduce pressure and cut-off supplies.

   As there is a huge reliance on groundwater abstraction to provide our drinking water, one would have assumed that any threat to the water supply would be of major concern to Affinity Water. Our concern is that on scanning this document – Drought Management Plan 2022- it appears to ignore the problem of contamination in the chalk aquifer and does not even mention the chemical bromate or bromide causing it.

3. Current issues with local water supplies that should be addressed in the Drought Management Plan

   a) Wastage at [redacted] pumping station

   It is clear that the [redacted] PWS is only used for remedial work and scavenging the bromate from the plume. It was closed as a public water supply in 2000, and has been pumping **9 million litres/day** of waste water into the drains from 2007. It has two purposes; to remove bromate from the aquifer and deflect the plume from the [redacted] PWS.

   For more information on the plume: Hatfield quarries and the plume – Ellenbrook Area Residents Association (ellenbrookresidents.org)

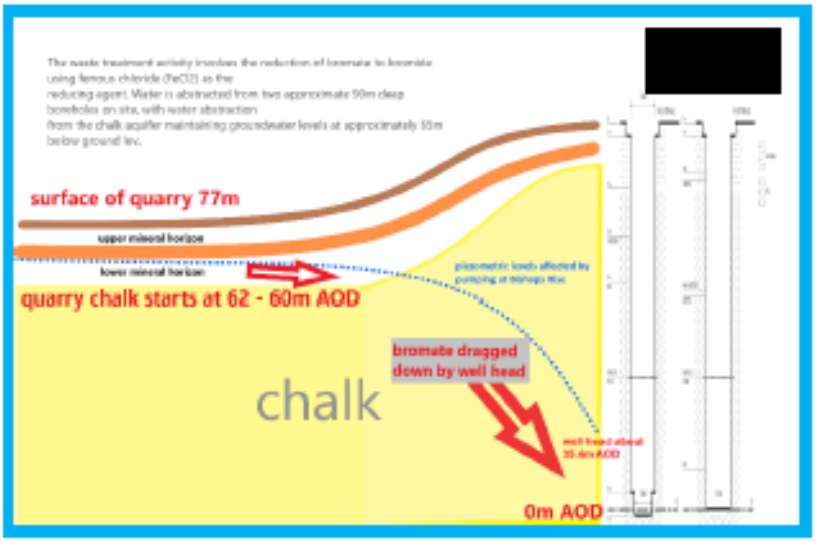
b) Remedial plan to release [redacted] from scavenging operation.

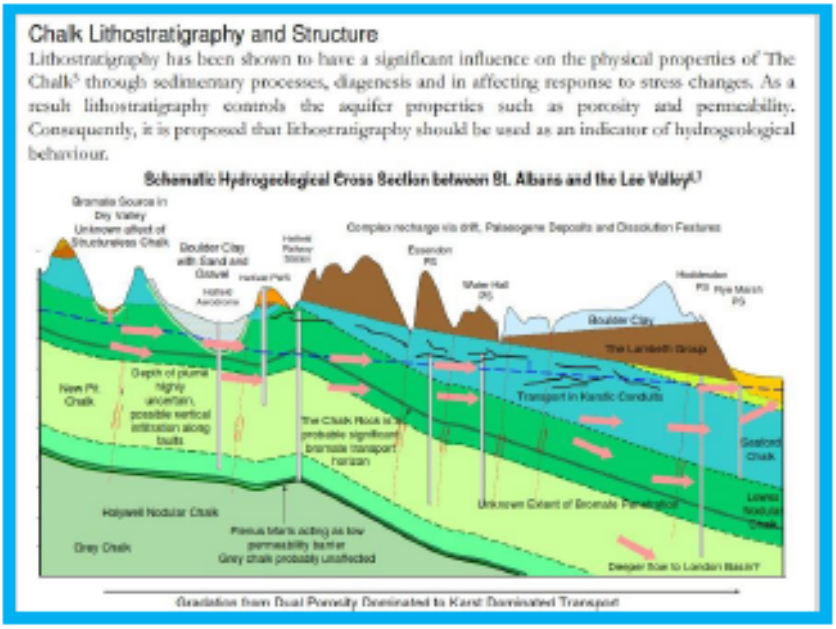
Although [redacted] has been pumping out bromate and treating it for 14 years it has not made much impression on bromate reducing it to 300 µg/l (micrograms in 1 litre of water).

We believe for the sake of our future water supplies that Affinity Water should work with the Environment Agency to achieve an effective remedial plan, hopefully to remove the bromate from localised [redacted] chalk aquifer – or hot spots in the plume.
This may release [redacted] from its scavenging duties in the future and allow it to go back to supplying Hatfield with water.

4. Position of the bromate in the aquifer

The depth of the plume at various locations is not clear, but borehole data suggests it is no more than 20m below the ground surface before it reaches Hatfield. It is mainly trapped in the primeval gravel and some in the chalk. The drawdown effect from [redacted] will certainly drag the contamination down to the well head through the chalk aquifer and therefore spread it vertically.
The contamination that escapes [redacted] draw will be 66.35m below Hatfield. It can be proved that the flow through the aquifer due to chalk adits and fissures will be faster therefore reaching [redacted] PWS and [redacted] towards the East much more quickly.





Note the flow from left to right – West to East – to Hoddesdon

The threat to our water supplies is that the plume is only [redacted] miles from [redacted] and [redacted] mile from [redacted] If the carcinogenic bromate levels exceed 10 µg/l then the water supply cannot be taken from these wells.

- [redacted] contribute about 8 mega- litres/day.
- [redacted] 3 ½ mega- litres/day (but controlled by [redacted] pumping)
- [redacted] scavenging 9 mega- litres/day (not public water supply).
- [redacted] PWS on [redacted] (clean supply) but 5.6 miles away.
- Other sources including rivers & reservoirs, all treated at [redacted]

The remedial plan & maps can be viewed at: EAs Remedial Plan – Ellenbrook Area Residents Association (ellenbrookresidents.org)

5. Threat of Quarries

The original source of the bromate contamination came from the Steetley chemical factory in Sandridge. It caused a plume to travel in an easterly direction reaching and closing [redacted] PWS in 2000. Some of the intense parts of the plume can be mapped and shown to be prevalent under the existing quarries and proposed quarries.

5.1 The Brett Quarry (proposed)

The proposed Brett quarry is situated on a Protection Zone 2 groundwater aquifer. This PZ2 aquifer feeds the remaining [redacted] PWS actively supplying Hatfield with drinking water.
The Applicant will remove sand & gravel from the [redacted] or lower mineral aquifer, where contamination may be present.
Sand and gravel would be worked "wet", that is, extraction in the lower aquifer groundwater. Water from this operation was originally going to be stored in a massive lagoon to the East of the site, however this idea was deemed unsafe due to cross-contamination, silting up, and flooding.

Despite the proposed quarry being rejected by Hertfordshire County Council, Brett are still pursuing the quarry application and as at July 2021 they are planning to appeal the HCC decision and alongside the appeal are also proposing a new application on the same site with minor variations.

With the threat of drought becoming heightened, EARA are concerned at Affinity Water's apparent lack of concern at the potential threat of quarrying on a site so close to public water supplies.

The following points are comments and objections made by industry experts during the recent quarry planning application.

Comments from Doctor Rivett: objecting to the quarry application on behalf of Hatfield Town Council and EARA

"1) The most significant groundwater-related problems stem from the proposed excavation of the lower mineral horizon (LMH) gravels located below the protective boulder clay, immediately overlying the Chalk aquifer groundwater resource.
This activity jeopardises:

- protection of the Chalk groundwater, the sole public drinking water supply to most in Herts;

- optimal remediation of the >20 km bromate groundwater plume, Europe's largest plume.

The quarrying activity fails to recognise the importance of the [redacted] gravel aquifer for wider protection of water supplies. Critically the proposed quarry, with 4 million tonne backfill, will permanently reduce the capacity of the [redacted] gravels to store and slow down the bromate plume causing increased bromate risks to downstream public water supplies and reduced remediation performance of [redacted]"

Dr Michael Rivett FGS **(Contaminant Hydrogeologist;** Director, GroundH2O Plus Ltd)

https://ellenbrookresidents.org/2021/07/08/groundwater-contamination-by-dr-mike-rivett/

Affinity Water objection – raising concerns about public water supplies

"Please treat this letter as an objection to this application, pending resolution of the detailed controls necessary to ensure that the proposed quarrying activities pursuant to the proposed permission do not affect the mobilisation of the existing plume of bromate contamination, and thereby render the water currently abstracted by Affinity Water at our [redacted] sources unfit for public water supply purposes."

"Our [redacted] sources are to the [redacted] of the existing location of the plume and are outside of its area of influence. There is a risk that quarrying activity could direct the plume towards the [redacted] impacting on existing public water supplies at [redacted] They are important and long standing public water supply sources, and it is essential that an appropriate regime is in place to avoid the proposed quarrying activities impacting on the protection of the supply sources from the bromate plume. It is therefore critical that this matter is fully resolved before any permission is granted."

Julie Smith, Affinity Water, Head of Legal Services, 13th August 2018

Further comments from Doctor Rivett regarding the agreement reached between Affinity Water and Brett:

*"**6. Operating agreement between the developer and water utility – a note.** It is noted that Affinity Water have been able to reach an operating agreement with the developers that appropriately allows them to be confident that operations can be agreed with the developers that will allow safeguard of public water supply. Whilst this is welcomed and does provide much needed assurance to the water utility and in turn their customer base, it is noted that the elements of control agreed under this operating agreement that have allowed Affinity Water to remove their original objections to the proposal are unfortunately not now transparent to the planning process and wider stakeholders involved. It is presumed likely that these agreements are substantially related to control of groundwater contamination risks and hence directly relevant to the concerns raised above. It would hence be reasonable to recommend, for transparency and benefit of all stakeholders, that the operating agreement relevant to the protection of public water supply (and controlled waters) is made available to allow critical evaluation of its effectiveness in achieving that protection and assuring safety of the planned quarry development."*

5.2 Cemex Quarries

Affinity Water: comments on the planning extension to the Cemex quarry operation

Cemex silt lake 2021

Environment Agency: comments on the planning extension to the Cemex quarry operation

"The planning application states that 'no mineral will be extracted from the lower gravels." Based on that affirmation, the submitted information demonstrates that it will be possible to fulfil these points and manage the risks posed to controlled waters by this development"

Land Adjoining Coopers Green Lane, Coopers Green Lane, Hatfield, Hertfordshire.
EA Feb 2020

Contamination (bromate / bromide) remedial plan

The following is an extract from an Environment Agency document discussing the options to reduce the contamination from St Leonards Court.

ST LEONARD'S COURT decision document part 1 Environment Agency July 2019.

91. Report F1 says it is unlikely, and the Agency agrees, that a sole location up gradient and preferable to [redacted] *will be found.*

92. However, additional scavenge pumping location(s) may be beneficial in significantly reducing the contaminant mass within the aquifer, reducing the overall time period for remediation and hence reducing overall cost. Furthermore, scavenge pumping up gradient of [redacted] *may reduce contaminant concentrations sufficiently that treatment to potable quality can be undertaken at, or in the vicinity of* [redacted]*at an earlier stage than would otherwise be feasible.*

The extract clearly states that additional scavenge pumping stations may be beneficial to reduce the contamination before it reaches [redacted] pumping station.

In order to protect our precious local supplies and to take the opportunity to speed up the reinstatement of [redacted] as a local supplier of drinking water we propose **that an independent group supported by EA and Affinity Water be appointed to investigate better remedial methods for safeguarding water for the population of Hatfield as described by the Environment Agency. A webinar by this group for HCC and Welhat Council and ourselves is now also relevant given the new application to HCC by Brett for a quarry .**

In order to protect our precious local supplies and to take the opportunity to speed up the reinstatement of [redacted] as a local supplier of drinking water we propose that an independent group supported by EA and Affinity Water be appointed to investigate the remedial methods as described by the Environment Agency.

7. Summary

- Ellenbrook Area Residents Association has major reservations about the Drought Management Plan 2022 in that it fails to make any reference to the threat to our water supplies from the bromate / bromide plume which is the biggest groundwater contamination disaster in Europe.
- The plan also fails to make reference to the fact that the scavenging operation at [redacted] has failed to reduce the threat from the contamination and there is also not an agreed way forward to deal with the contamination.
- The current operation at [redacted] is wasting a huge volume of water, circa 9 million litres per day, which is in excess of the volume of water used each day by Hatfield residents. Despite this the plan makes no reference as to how this wastage can be minimised in the event of a period of drought conditions.

Ellenbrook Area Residents Association

Info@ellenbrookresidents.org

Individual respondent 1

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

na

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

Insufficient communication

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

Regional is fine

If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

Yes

In general what do you think of the plans we have set out for managing the impacts of drought?

They seriously underestimate the likelihood of drought measures - The 1 in 100 year, and >1 in 100 year measures have been required more than once in my lifetime so clearly the frequency estimates are completely out.

Individual respondent 2

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

Yes, as far as I can see this is good. So long as snail mail is used for older customers alongside digital methods

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We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

I would say wildlife ponds should be topped up, especially as the over use of water in Herts is so damaging to our wild rivers and streams

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Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

Locally targeted strategies, although resource heavy, have the potential to be more accurate in their impact

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If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

Our rivers have to be protected. I would rather the whole population stopped washing and stunk to high heaven than the rivers be irreparably damaged!

In general what do you think of the plans we have set out for managing the impacts of drought?

Overall good

Individual respondent 3

We want to ask you about our plans around communication. Have we got it right in terms of the timing, frequency and methods of communication? Have we set out appropriate measures to engage with vulnerable and hard to reach customers?

Yes

We have set out our plans for temporary restrictions (TUBs and NEUBs) and explain our proposals for how we would communicate to our customers if we need to implement restrictions – what do you think of these? We have also set out the exceptions we would plan to allow if we needed to implement restrictions, have we got it right?

Yes

Droughts develop differently across the region and can impact companies differently depending on their water resources (see news article on water company drought collaboration). Would you support a regional approach to applying temporary restrictions, or should they be implemented using a more targeted and/or localised approach?

In general should be localised. If however an aquifer or river source is shared between companies then the approach should be for joint action. So 'regional' should mean the region of a combined water source, not say the whole of East Anglia

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If we need to use any of our drought permit options, we would take steps to ensure any environmental impacts of these are minimised. One such mitigation option is the use of river support or augmentation, when we would use groundwater to top up river flows in certain locations. Do you support the use of river support as a drought permit mitigation option?

Absolutely not. In 2020 the Cam in Newport was completely dry for the first time I have witnessed in the 28 years I have lived here. But at Audley End House the Cam water was gushing over the ornamental waterfall, I assume pumped in from the aquifer at the Uttlesford Bridge works. It gives a false impression that there is no problem and would negate the message about saving water. Also its affect seemed ineffective as not much further downstream at Gt Chesterford the Cam was still almost dry In general it seems perverse to pump the aquifers even lower just to look after short sections of a river when that will delay the recovery of upstream sections reliant purely on natural flow.

In general what do you think of the plans we have set out for managing the impacts of drought?

The elephant in the room is ignored, as it was in a previous consultation on water use. Which is that water levels have been falling for a long time. The reason is endless house building. It is obvious to all that the problem is huge extraction for water supply, and that the housing growth being forced on dry areas cannot be supplied without making matters worse. There has been no long term downward trend in rainfall. I understand that as a statutory provider Affinity you are required to supply regardless of ability, but despite being a statutory consultee on all of them you say absolutely nothing. You should be stating the reality against every application. Doing an updated drought plan is welcome but we need to address the source of the problem. Which is house building without consideration of the environmental damage, which in my village is serious on both levels and water quality. There is insufficient flow to dilute the agricultural run off or the poor quality output from the Anglian Water works, which is overloaded and has as far as I know, had no upgrade since construction in the 1970's.

Affinity Water