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RESPONSE TO CAMBRIDGE WATER'S DRAFT DROUGHT MANAGEMENT PLAN

1. We welcome the opportunity to comment on [Cambridge 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 calling on Cambridge Water, Affinity Water and Anglian Water to work much more closely *together* to develop a *whole-catchment* approach to tackle the environmental impacts of over - abstraction from the Chalk aquifer in the Cam Valley. In 2019 the three companies abstracted some 105 MI/day from the aquifer (Cambridge taking 64%, Affinity 22% and Anglian 14%). In that year the Environment Agency also abstracted a further 15 MI/day from the aquifer to augment Chalk streams adversely impacted by these abstractions. 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.
3. In our recent comments on [Affinity Water's Draft Drought Management Plan](#) we commended their references to the company's environmental responsibilities and the 81 specific references to 'Chalk'. Affinity Water made a welcome commitment on 27/09/20 to restore Chalk streams on the south slopes of the Chilterns (www.Cambridgewater.co.uk/news/action-to-restore-chalk-streams) and confirmed in correspondence with us on 16/10/20 that *'our commitment applies to all chalk rivers not just those in the Chilterns.'* We encourage Cambridge Water to reflect this commitment, and the company's global responsibility to care for and restore the Chalk streams affected by its activities, in all its policies, plans and relevant actions, including its Drought Management Plan.
4. Cambridge Water, in sharp contrast to Affinity Water, mentions 'Chalk' only once in its draft Plan. The inclusion of 'may' in *'We also acknowledge that not all existing abstractions are sustainable over the long term and **may** already impact river flows'* and *'we are investigating any abstractions that **may** impact the environment through the Water Industry National Environment Programme'* suggests a reluctance to acknowledge - or even institutional blindness to - the environmental problem. We urge Cambridge Water to build into its own plan the environmental understanding and commitment to change shown by Affinity Water. Cambridge Water needs to reset its thinking.
5. 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.

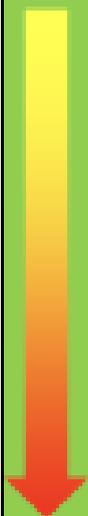
Strategic priorities

6. As strategic priorities for abstraction that affects Chalk streams, we call on Cambridge 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 Affinity Water plans in its Central supply area, 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 Cambridge Water's supply zone) via surface water transfers from Anglian Water.
 - **Reduce** water wastage through investment in leakage control, compulsory metering, and demand management in all its forms.
7. These obligations should be viewed as essential elements in Cambridge 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.

Performance standards and drought management

8. Cambridge Water's performance commitments should similarly reflect local environmental needs. The final plan will need to be reconfigured to reflect the formal designation on 01/07/21 of the company's supply zone as an 'area of serious water stress'. Customers should accordingly no longer expect to have unlimited supplies of water all year-round, for all purposes, without limitation. Yet Cambridge 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. The three water companies 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. Current standards are not more than once in 10 years for Affinity Water and not more than once in 20 years for Cambridge Water. These are inappropriate.
9. Cambridge 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.
10. The draft plan now includes several environmental indicators in its 'Drought triggers and actions' (see below). While these references are welcome, they do not appear to make any material difference to the timing of the introduction of any restrictions on water use; this appears still to be based solely on the availability of water supplies. Much greater weight should be placed on reducing the environmental impact of the Company's abstractions during droughts by doing more, sooner, and more often, to cut consumption. Hence, for example:
 - Level 1 actions should become part of 'business as usual' (which should also include an annual Temporary Use Ban from 1 May to 31 August).
 - Level 2 actions should be implemented when the Environment Agency declares 'Prolonged Dry Weather' status.

- Level 3 actions should be implemented when the Environment Agency determines that river flows in the Cam are ‘notably low’.

Severity of the drought	Trigger Level	Demand Side Actions	Supply Side Actions	Drought Indicator(s)
	Above level 1	Business as usual	Business as usual	Monthly monitoring
	Level 1	Enhanced Communications with stakeholders and internally	Optimise abstractions and source availability	Recharge deficit >55mm; or EA ‘Prolonged Dry Weather (PDW) status
		Demand management: Additional promotion of water efficiency	Review planned outages	>3 RWL at indicator sites below Average
		Demand management: Enhanced leakage reduction	Reduce abstractions at environmental sensitive locations	River flows in CAM ‘be- low normal’
	Level 2	Further Communications: Appeals for restraint	HOFs in place	Recharge deficit >120mm
		Prepare to implement TUB	Enhanced environmental monitoring at sensitive sites	River Flows in CAM ‘notably low’ (EA) Sustained demands above 108MI/d
		Implement TUB	Optimise licenced abstractions	Recharge deficit >180mm & 3 or more indicator sites reach RWL1
	Level 3	Prepare for Restrictions on non-essential use (Ordinary Drought Order) NEUB application	Supply side option A (minor Env impact)	3 or more indicator sites reach RWL2
		Apply for NEUB	Supply side Option B (Moderate Env. Impact drought permit)	3 or more indicator sites reach RWL3
		Implement NEUB	Supply side Option C (Moderate Env. Impact drought permit)	Recharge deficit >260mm & 3 or more indicator sites reach RWL4
		All possible actions to avoid emergency drought orders	All possible actions to avoid major environmental impacts	3 or more indicator sites reach RWL5
	Emergency Plan invoked			

Drought indicators and management actions. Source: Cambridge Water draft [Drought management plan](#).

Learning from overseas experience

11. 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.
12. 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 Cambridge Water in developing its policies and plans.

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%), Cambridge 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.'*

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*.
