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Rebecca Pow MP, Parliamentary Under Secretary of State  
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Dear Minister,

**PROTECTING AND RESTORING CHALK STREAMS IN THE CAM VALLEY**

I am most grateful to you and your advisers for meeting me with representatives of the Cam Valley Forum, Water Resources East and Cambridge Water on 15 June. It is good to hear your commitment to tackling the pressing issue of water shortages.

East Anglia has the least rainfall in the UK, and within that my constituency of South Cambridgeshire has the most rapidly growing population, putting greater pressure on natural resources. Water shortages and the low water level are now so acute that in the summer months the chalk streams routinely run dry, the River Cam regularly dries up in its upper reaches and village ponds across the constituency are empty. I grew up in the village of Fowlmere, which is named after its bird marshes that have been there for a thousand years. It is now an RSPB Reserve, but the fresh water springs now often stop, leaving baked mud which is completely inhospitable to water birds. This drying up of our natural water features is detrimental to quality of life and extremely damaging for wildlife. It has become an issue of major local public and political concern.

These problems do not arise as a result of drought years, but are now chronic. They are not problems caused by lack of rainfall - average annual rainfall has been constant here for the last 120 years - but by abstraction. It is water abstraction from the chalk aquifer that needs to be reduced to raise water tables and enable springs to flow naturally throughout the year, every year, whatever the weather. That 14 augmentation boreholes have been put in place since the 1990s to support flows in some 30 streams illustrates the scale and long-standing nature of the problem. All of us share a concern to tackle the impacts of water abstraction from the chalk aquifer on the water environment in the Cam Valley. With housebuilding due to accelerate sharply in South Cambridgeshire, the pressures on our water resources are going to get even more intense.

It is clear that we will need to find alternative sources of water to replace direct abstraction from the aquifer. That could include building a reservoir to capture and store winter flows downstream of Cambridge, tapping in to water transfers from elsewhere, and improving the quality of treated wastewater, so that it can be used to recharge the aquifer, or to replace water abstracted by others (e.g. for irrigation). I am pleased that Water Resources East is considering all these options as part of its current planning work. We look to the government to support what is potentially a major infrastructure investment.

The challenge remains of how to meet the needs of public water supply and the environment *now* and in the next few years before any new water infrastructure can be delivered. We have immediate concerns about continued high domestic consumption this summer but this may not be exceptional. Every time the



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chalk aquifer fails to recharge over the winter (as it has failed to do in 24 of the last 59 years) my constituents are going to worry about the impact on their local watercourses.

I urge you to take a strong lead and recommend setting up a 'DEFRA Chalk Streams Task Force' to develop and oversee the implementation of a 'Chalk Streams Strategy'. The objective of the Strategy should be to ensure that chalk streams flow naturally. This initiative would provide a focus for collaborative action to restore and protect chalk streams across England. The Task Force would support the regional water planning bodies, statutory agencies, and voluntary bodies in removing barriers to action to reduce damaging abstraction from chalk aquifers, restore natural flows, find alternative water sources, and tackle pollution and habitat modifications. It would help ensure that we meet our international commitments to safeguard these globally rare and fragile environmental assets. The Cam Valley should be viewed as a test catchment, perhaps one of several, in which new approaches could be trialled.

I offer in the attached paper an initial agenda for action for the Task Force. The Cam Valley Forum and Water Resources East have worked up eight specific actions to kick-start work to restore and protect chalk streams in the Cam Valley and elsewhere in England, detailed in the attached document. They are detailed and implementable actions, but at high level they are:

1. Actively promoting water efficiency
2. Promoting shifts in land use and management to safeguard the water environment
3. Supporting collaborative integrated water management planning through regional groups, including the development of new strategic supply options such as reservoirs.
4. Going further and faster on metering
5. Going further and faster to reduce leakage
6. Amending Water Company Service Levels
7. Amending Water Company Drought Trigger Levels
8. Integrating the Drought Response Framework into Water Company Drought Plans

All these have been discussed with the water industry, and I think you would find them supportive. The first three are more urgent 'quick wins'. Points 4-8, if they cannot be delivered earlier, will require changes in the water company Price Review process. Action on points 6-8 will enable better management of a possible drought this summer.

I commend these ideas to you and look forward to your response.

Yours Sincerely,

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# EIGHT PROPOSALS TO PROTECT CHALK STREAMS

Cam Valley Forum and Water Resources East, June 2020

## 1. Actively promoting water efficiency

**Issue:** Demanding targets need to be set for reducing the consumption of water by households, businesses and other public water supply users and for reducing 'Distribution Input'. These should be used to promote changes in attitudes, drive innovation in the development of water-efficient (not just energy efficient) appliances, and drive investment in rainwater harvesting and greywater recycling schemes.

**Example:** The most recent targets set by local water companies to reduce average daily water use per person are:

- [Cambridge Water](#): From 145 litres/person/day to 137 litres by 2025 and 129 litres by 2045.
- [Affinity Water](#): From 152 litres/person/day to 129 litres by 2025 and 110-120 litres by 2045.
- [Anglian Water](#): From 137 litres/person/day to 130 litres by 2025 and 120 litres by 2045.

The National Framework for Water Resources sets a planning target for regional groups such as Water Resources East of 110 litres/person/day. We recognise that achieving this target is not completely in the gift of the water companies, and it only covers household consumption, which accounts for just over half of the public water supply (the other half split roughly equal between leakage and non-household consumption). We therefore propose setting additional targets for reducing 'Distribution Input', which is the total amount of treated water used for the public water supply. This target is much more relevant to the objective of leaving more water in the environment for nature.

We look forward to the Government's response to the [Consultation on measures to reduce personal water use](#) (July 2019). This provides an opportunity to set new policies that can bring about a step change in water efficiency through, for example, tighter building regulations for new houses of 100 litres/person/day or lower, mandatory water efficiency labelling, and minimum product standards for taps, showers, toilets and white goods.

The tighter building regulations should apply nationally but we would also like to see Local Authorities in 'water-stressed' areas being able to mandate even tighter standards for new developments. South Cambridgeshire District Council is an exemplar by already setting a target of 110 litres/person/day for new developments (building on experience from the Eddington development in Cambridge). Evidence gathered by Anglian Water in their 'Innovation Shop Window' in nearby Newmarket shows that it is entirely possible to move to 80 litres/person/day, and we would like to see our Local Authorities being given the power to mandate targets such as this, without fear that the Planning Inspectorate will overturn the decision. We have a 'golden opportunity' to set new, world-leading water efficiency standards for new homes built as part of the Oxford to Cambridge Growth Arc, and would welcome the Government's support for this.

Another approach would be to set a 'water neutral' objective for all development in the OxCam Arc, whereby the additional demand for water from growth is first minimised then offset by water efficiency programmes in local social housing, schools, hospitals and other public buildings.

**Recommendation:** The Government should set new, demanding targets on personal water consumption and Distribution Input in announcing its conclusions on last year's consultation on measures to reduce personal water use. It should also develop a mechanism to enable Local Authorities to set even more ambitious reduction targets in areas of water stress. The Oxford to Cambridge Growth Arc could be used as a national pilot to assess the impact of this approach and to test the concept of 'water neutrality'.

**Action:** The necessary step-change can be initiated by making an announcement on the outcome of the consultation and any additional steps; this should then be followed through in guidance to Local Authorities, new demanding technical standards for water-using appliances, and communication campaigns.

## **2. Promoting shifts in land use and management to safeguard the water environment**

**Issue:** The Cam Valley's Chalk streams – internationally rare habitats – have suffered long term declines in flow and quality due to over-abstraction from the Chalk aquifer, inadequate wastewater treatment, intensive land use, and habitat modifications. Alongside action to reduce current levels of abstraction, action is also needed to tackle pollution and restore natural channels and river processes.

**Example:** The impacts of low flows are exacerbated by pollution. Sources of pollutants include farmland (e.g. nutrients, pesticides, sediment and animal waste), urban highways and drains (e.g. hydrocarbons and silt), and sewage treatment works (especially nutrients). Inputs from sewage works are constant year-round but their impact, especially in the upper river stretches, is magnified when there is less flow available to dilute them. Habitat modifications further disrupt natural processes. Over-deepening, straightening and field drainage have disconnected rivers from their floodplains, and reduced habitat quality. River bed gravels, essential for spawning fish, have been removed by dredging or buried by sediment. Weirs interfere with flows and obstruct fish. Watercourses are often overgrown and over-shaded.

Water Resources East, in collaboration with Cambridgeshire County Council, Cambridge Water, the Cam Valley Forum and local landowners, is developing a project in the headwaters of the River Granta and River Bourn to understand the impact of various changes in land use and management on the Chalk landscape on water availability, water quality and the opportunity for natural flood management. A key part of this work is to understand the additional aquifer recharge benefits which could be gained from land use change, increasing the resilience of the Chalk system to pressures such as growth and climate change.

**Recommendation:** Given the strong partnerships already developed, and the significant outcomes that this project seeks to deliver, the Government should follow the progress of this important project with interest and consider funding opportunities to further support its progress, with a view to it becoming one of the national Environmental Land Management Scheme pilots later in 2021.

**Action:** The Task Force should support the project team through funding and advice, with a view to making it an exemplar of good practice in protecting and restoring Chalk streams through changes in land use and management.

### **3. Supporting collaborative integrated water management planning through regional groups**

**Issue:** Water Resources East is one of five regional planning groups now operating in England under the umbrella of the National Framework for Water Resources. Its overarching strategy for the region is to:

- Work with all water users in Eastern England to identify ways in which they can become as water efficient as they can be.
- Promote the need for additional storage of water within the landscape, increasing resilience for all water users and seeking to identify multi-sector opportunities to link water scarcity with flood risk management solutions. This could include the development of new strategic water supply reservoirs, including one, for example, to the north of Cambridge.
- Transfer water from areas of surplus to areas of deficit, increasing connectivity using both open water channels as well as pipelines.
- Link land and water management more effectively, increasing resilience and restoring and enhancing the natural systems and resources on which all abstractors depend.
- Understand where abstraction is having a detrimental impact on the environment, and develop options which restore and enhance it whilst ensuring sustainable economic development, for example around agriculture and food production.
- Actively explore other potential sources of water for our region, for example desalination and water re-use.
- Contribute to low carbon strategies and plans, helping the region to meet a net zero ambition.

**Example:** Water Resources East is widely regarded as the exemplar for multi-sector collaborative planning and, uniquely among the other regional groups, is now an independent not-for-profit organisation. This independence from any particular sector or regulator brings a unique opportunity in the world of water to develop partnerships and projects which will go further and faster to deliver environmental improvements, increasing levels of resilience and ensuring that water is not a barrier to economic development. Water Resources East operates as a membership organisation and currently has almost 90 members from NGOs, local interest groups, water companies, power companies, Local Authorities, Local Enterprise Partnerships, the agricultural sector, universities and businesses.

**Recommendation:** The Government should closely follow the work of Water Resources East, and actively seek opportunities to support its work through advice and funding for project work, particularly in areas of water-related environmental stress such as Cambridgeshire.

**Action:** The Task Force should liaise closely with Water Resources East and support it in tackling diverse challenges and opportunities in a region that is the driest in England.

#### **4. Going further and faster on metering**

**Issue:** Water companies are unable to promote compulsory metering unless they operate in an area designated as being in 'serious water stress'. The criteria for defining these areas do not take sufficient account of the needs of the water environment, particularly in areas dependent on Chalk aquifers.

**Example:** The Environment Agency advises the Secretary of State on the designation of 'Areas of serious water stress' under the Water Industry (Prescribed Condition) Regulations 1999. The Agency assesses whether the environment can cope with current levels of abstraction given rainfall levels and aquifer recharge. In water-stressed areas, water companies may pursue compulsory metering if it is cost effective.

A recent assessment ([Water-stressed areas](#) 2013) shows that the Cambridge Water supply area is under only 'Moderate' stress, so the option of compulsory metering is not available. This appears to be perverse, given that the option is available to Affinity Water (who supply the southern part of the Cam Valley) and in light of the Environment Agency's own assessment of the reductions in abstraction from the Chalk aquifer needed to restore natural flows and achieve good ecological status under the Water Framework Directive.

The Environment Agency's methodology applies more stringent thresholds for defining water-stressed areas to rivers designated under the Habitats Directive as Special Areas of Conservation. One way to strengthen the protection of Chalk streams in the Cam Valley, and to enable Cambridge Water to initiate compulsory metering, would be to apply the same thresholds to *all* Chalk stream catchments in the UK.

The *Let it Flow!* report suggests aiming to meter at least 90% of supplies by 2025 and to equip 100% of households with smart meters by 2030. This level of ambition is far ahead of the current target for Cambridge Water of 90% by 2045 and of targets expressed in volume terms by the other companies.

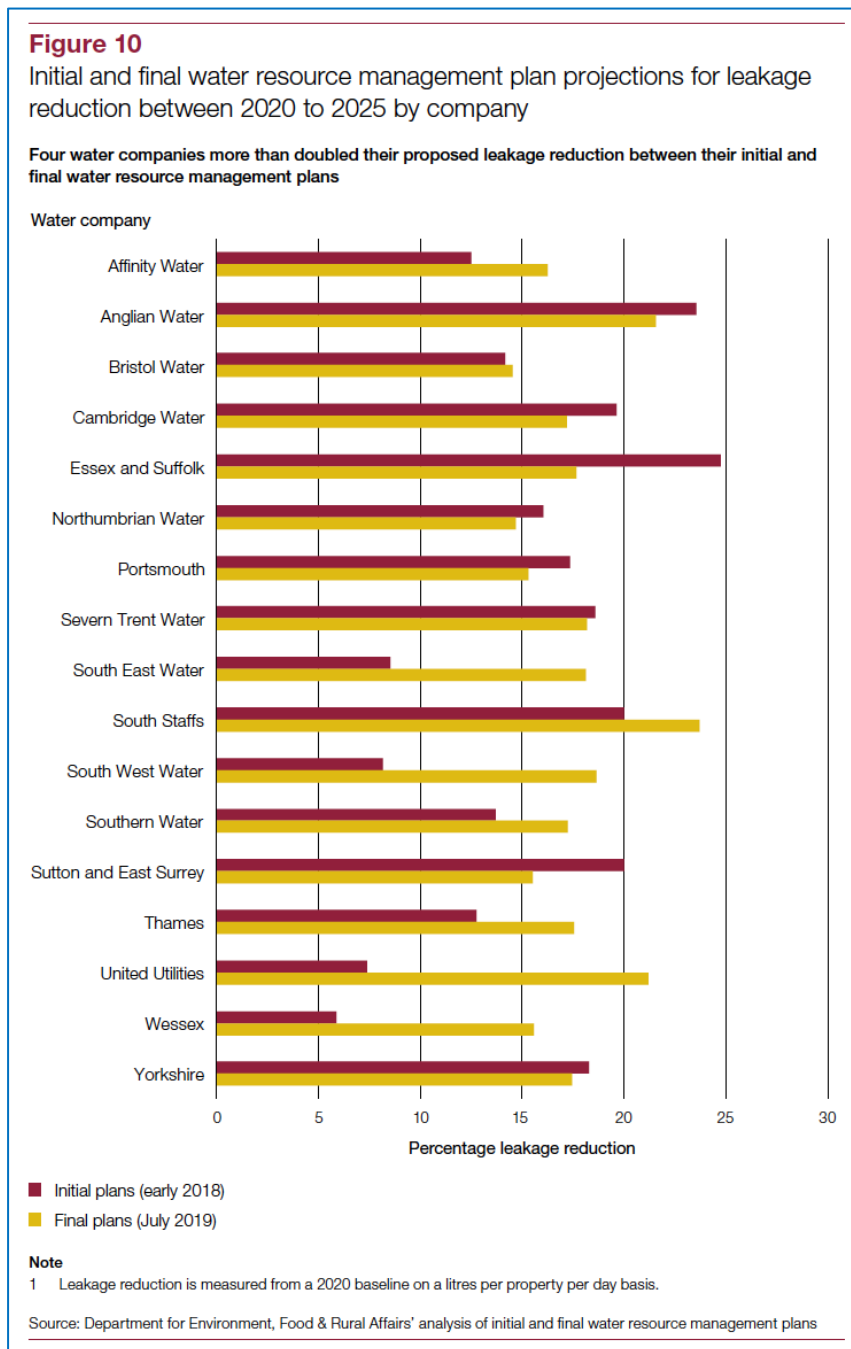
**Recommendation:** The Environment Agency should be required to review and adjust the criteria that it uses to define 'Areas of serious water stress' (e.g. by applying the criteria applied to Habitats Directive (Special Area of Conservation) catchments, to all Chalk stream catchments).

**Action:** It may be possible to implement the recommendation through a Ministerial Direction to the Environment Agency and/or an adjustment to the relevant Regulations. Alternatively, the Minister may be able to act immediately to designate all Chalk stream catchments as 'water-stressed areas'. Relevant water companies could then plan for action on compulsory metering in the PR24 Price Review.

## 5. Going further and faster to reduce leakage

**Issue:** The econometric models used by OFWAT currently take inadequate account of environmental impacts and as a result act to rein back the ambitions of water companies to tackle leakage.

**Example:** The Table below, from the recent National Audit Office report on [Water supply and demand management](#), shows that Cambridge Water, Essex & Suffolk Water, and Anglian Water all proposed to do more to reduce leakage than was eventually permitted by OFWAT. This suggests that OFWAT’s process wrongly places more weight on cost considerations than on environmental needs. In [Resilience in the round](#) (2017), OFWAT encourages water companies to consider the broader environmental impact of their business plans and incorporate the Natural Capital approach into their work on resilience. Yet, at least on leakage, OFWAT does not appear to have adopted this approach itself in making its final determinations.



Source: Figure 10, [Water supply and demand management](#) (NAO 2020)

OFWAT should be encouraging greater ambition from the water companies in tackling leakage, not less. The *Let it Flow!* report suggests aiming to reduce leakage by 50% on 2020 levels by 2025. This level of ambition is far ahead of the current target of 15% for both Cambridge Water and Affinity Water.

**Recommendation:** OFWAT should be required to review and adjust the models that it uses to assess 'best value' so that they take greater account of environmental needs. The outcome should be that water companies can set far more demanding targets to reduce leakage in the next few years.

**Action:** It may be possible to implement the recommendation through a Ministerial Direction to OFWAT. The Government should start on this now, so that a new approach is in place for the PR24 Price Review.



## **6. Amending Water Company Service Levels**

**Issue:** Water company levels of service, set without reference to environmental impacts, risk causing environmental damage if religiously adhered to during dry periods.

**Example:** The [Cambridge Water Final Drought Plan](#) (2018) sets the following levels of service:

- The need for a major publicity campaign requesting voluntary savings of water not more than once in 10 years.
- A temporary use ban (TUB), previously known as a hosepipe ban, on average not more than once in every 20 years.
- A non-essential use ban (NEUB) not more than once in every 50 years.
- The risk of rota cuts or use of standpipes on average less than once in 100 years.

**Recommendation:** The need for all such restrictions on use in any specific public water supply area should take full account of environmental considerations.

**Action:** The Government should use the Cambridge Water area to study how to amend service levels to ensure that they are environment-led and fully incorporate environmental impact. The Task Force should oversee this work and deliver outcomes for inclusion in the PR24 Price Review process (see also 7 and 8 below).

## 7. Amending Water Company Drought Trigger Levels

**Issue:** The triggers that lead to water companies introducing publicity campaigns, TUBs and NEUBs in dry periods do not reflect the risk of environmental damage by continuing to abstract. Too little action may be taken too late to restrict water use and thereby avoid watercourses drying out through lack of flow.

**Example:** The [Cambridge Water Final Drought Plan](#) (2018) explains that data on the recharge deficits and borehole levels determine when different restrictions should be implemented during a drought. The Table below shows what actions should be triggered when. ‘Rest Water Levels’ 1-5 reflect increasing divergence from the water level in a borehole that has not been recently pumped or affected by nearby pumping.

Drought Option Ref.	Trigger Level or preceding actions		Demand Control	Resulting Action
	Recharge Deficit	Groundwater		
Action Initiation	Initiation – rest level at any 3 of 6 indicator sites falls below average RWL. At this point recharge deficit calculation initiated			
D1	>55mm deficit			Extra promotion of water efficiency
D2	>55mm deficit			Enhanced leakage reduction
D3	>120mm deficit			Appeals for restraint. Review environmental monitoring and prepare for additional needs
D4	>180mm deficit	3 or more indicator sites reach RWL1		Prepare to implement temporary ban on water use. Implement additional environmental monitoring
S1		3 or more indicator sites reach RWL2	<b>Hosepipe ban in place</b>	Initiate Supply side options: recommissioning of Fleam Dyke 12, Croydon, Kingston. Prepare monitoring plans for supply options
S2		3 or more indicator sites reach RWL3		Commission Fleam Dyke 12 PS
S3		3 or more indicator sites reach RWL4		Commission Croydon & Kingston PS
S4		3 or more indicator sites reach RWL5		Initiate St Ives PS recommissioning
D5	>260mm deficit	3 or more indicator sites reach RWL5		

Source: Table 4, [Cambridge Water Final Drought Plan](#) (Cambridge Water 2018)

For example, the relationship between Recharge deficits, Rest Water Levels *and the flow levels needed to support healthy Chalk streams* should be assessed and used to inform replacement schemes. The practical effect, purely to illustrate the point, might be to produce a new scheme where, for example:

- 'D1' is applied when there is a 20 mm deficit, not 55 mm.
- 'D4' is applied when there is a 90 mm deficit, not 180 mm.
- 'S1' is applied when only 1 indicator site reaches RWL1, not 3 sites meeting RWL2.
- 'D5' is applied when only 1 indicator site reaches RWL3, not 3 sites meeting RWL5.

**Recommendation:** The triggers that lead to water companies introducing publicity campaigns, TUBs and NEUBs should be adjusted, to reflect the risk of environmental impacts. Action to restrict borehole abstraction should then be taken sooner, more often, than it is now.

**Action:** The Government should use the Cambridge Water area to assess how to amend water company drought trigger levels to reflect the risk of environmental impacts. The Task Force should oversee this work and deliver outcomes for inclusion in the PR24 Price Review process (see also 6 above and 8 below).

## **8. Integrating the Drought Response Framework into Water Company Drought Plans**

**Issue:** Water Company Drought Management Plans are not aligned with the Drought Response Framework of the Environment Agency.

**Example:** The Environment Agency's document [Drought response: our framework for England](#) (2017) sets out the following 'Stages of drought management', with actions for the Agency and water companies. Examples of the actions specified for water companies at each stage are set out below:

### ***Prolonged dry weather stage (yellow)***

- *using enhanced water efficiency messages*

### ***Drought stage (amber)***

- *impose restrictions on non-essential domestic and commercial water use*
- *apply for and use drought permits and orders to protect public water supply*

### ***Severe drought stage (red)***

- *impose emergency restrictions on domestic and commercial water uses*
- *continuing to apply for and use of drought permits and orders to protect public water supply*

The [Cambridge Water Final Drought Plan](#), despite being published in 2018, after the publication of the Environment Agency's Framework, makes no reference to this Framework at all.

**Recommendation:** Water Company Drought Management Plans should be aligned with the Drought Response Framework of the Environment Agency. This will facilitate a coordinated, joined-up approach.

**Action:** The Government should use the Cambridge Water area to assess how to align Water Company Drought Management Plans with the Drought Response Framework of the Environment Agency. The Task Force should oversee this work and deliver outcomes for inclusion in the PR24 Price Review process (see also 6 and 7 above).