# *Let it Flow!*

## *Proposals from the Cam Valley Forum for an Integrated Water Resource Management Plan for the Cam Valley*

### SUMMARY AND RECOMMENDATIONS

1. Healthy water and wetland habitats, rich in fish, birds, plants and other wildlife, are what the Cam Valley Forum wants for the River Cam and its tributary rivers, streams and ditches. This is an iconic river that people need to be able to continue to enjoy in many ways. We wish to work with all our partners in Water Resources East to restore and enhance the Cam and its tributaries while also responding appropriately to the pressures of increasing population, economic growth, intensive land management, and climate change.

2. The River Cam and its tributaries derive much of their flow from a Chalk aquifer. Under *natural* conditions, water from Chalk aquifers, with its constant year-round temperature, stable chemistry, and reliable supply through periods of low rainfall, supports Chalk-stream habitats that are internationally rare. However, conditions in the Cam Valley have been far from 'natural' for many decades and our Chalk streams have suffered as a result:

   - **Groundwater abstraction, especially for public water supplies, deprives the Cam of about half its average natural flow**. Too often, summer flows are greatly reduced and, after successive winters of below-average rainfall, daily abstraction for public supplies can exceed river flows. If abstraction lowers the water table under stream beds, water flows back down into the ground below them and they dry out.

   - **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.

   - **The impacts of low flows are exacerbated by habitat modifications**. River modifications, such as 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. Watercourses are often overgrown and excessively-shaded.

3. It is not realistic to expect an already over-abstracted Chalk aquifer to meet future demands for water as a result of growth and climate change. Taking more groundwater will further reduce the natural supply to Chalk streams and make them even more vulnerable to drying out in the summer. Augmentation schemes that pump groundwater from new boreholes to keep spring heads running are not the answer; they tackle symptoms not causes and, by taking more water from the aquifer, may make things worse.

4. We seek a different approach involving many more options. These would include: substantially reducing groundwater abstraction from the Chalk aquifer; investing in alternative sources of surface water to replace groundwater; treating sewage to high standards so that it can be reused for public water supplies and to recharge the aquifer; building rainwater harvesting and recycling systems into all new development, where possible; and resolutely driving down demand for water in homes and businesses.

5. Realising our vision for the Cam Valley requires an 'Integrated Water Resource Management Plan'. This is needed to bring about:

   (a) **Substantial reductions in groundwater abstraction from the aquifer that feeds our Chalk streams**. Where the water environment is being damaged, licences need to be amended or terminated to deliver real cuts in actual abstraction, not just paper savings in licensed amounts.

   (b) **Investment in new sources of public supplies**. Proposed strategic north-south transfers of water should be extended to benefit the Cam Valley too. Locally, high river flows should be captured in a new reservoir in the lower Cam Valley, once they have flowed through it in as natural a way as possible, and be redistributed as necessary.

   (c) **Investment in water reuse and aquifer recharge schemes**. Sewage treatment works need to be upgraded to deliver better treated water to be reused for public supplies and to recharge the aquifer and/or support irrigation.

   (d) **Investment in the harvesting of rainwater and recycling of greywater**. Our local planning authorities need to ensure that schemes to harvest and recycle water become commonplace and help to make Cambridge a 'Water Sensitive City'.

   (e) **A step-change in attitudes to water use through metering, leakage control and demand management**. Cambridge should become the 'No. 1' water-saving city and the Anglian Region the 'No. 1' water saving region in England.

   (f) **Significant reductions in water pollution and investment in work to enhance habitats and natural processes**. Action is also needed to: reduce pollution from land, businesses and homes; and to rectify the impacts of past river modifications, which have reduced connectivity between reaches (e.g. weirs) and between rivers and their floodplains.

   (g) **Improved resilience, not only for public water supplies but also for the environment.** An increasing population, economic growth, intensive land management, and climate change, will all bring new pressures to bear on the Cam Valley's limited and precious water resources. We all have a moral obligation to protect our river environments for future generations to enjoy.

6. We set out below our 12 initial **recommendations**. We ask Water Resources East to include them in its own *Statement of Ambition* and, subject to investigations, analysis and debate, in its final *Integrated Water Resource Management Plan* for the whole Anglian Region.

## 1. The opportunity

**Recommendation 1:** The Regional Plan must:

   (a) Prioritise action to address unsustainable groundwater abstraction and thereby restore flows so that Chalk streams can once again provide a full range of benefits for people.

   (b) Set a new benchmark for ensuring 'no further deterioration' in both groundwater and surface water that is far removed from the current unsatisfactory *status quo*.

(c) Deliver practical solutions to improve the 'resilience' of the *water environment*, not just of *public water supplies*, in the face of current and future pressures from population growth, intensive land management, built development and future climate change.

## 2. The River Cam catchment

**Recommendation 2:** Water Resources East should develop the Regional Plan in close liaison with:

(a) Water Resources South East for the area covered by the Thames Region.
(b) All the water companies operating in and around the Anglian Region.
(c) The Environment Agency in both its Anglian and Thames Regions.
(d) Natural England and Defra in relation to both water and land management.

## 3. The challenges

**Recommendation 3:** The Regional Plan must recognise that the ability of the Cam Valley's rivers, streams and wetlands, and their wildlife, to cope with reduced summer flows and droughts has been greatly weakened by the impacts of groundwater abstraction on baseline flows. The changes experienced are due not so much to climate change or periodic droughts but to over-abstraction over many decades, leading people wrongly to view low flows as the norm.

**Recommendation 4:** The Regional Plan must seek to remedy the full range of impacts caused by over-abstraction and the accompanying and growing pressures from population growth, intensive land management, built development and future climate change. It must recognise that the groundwater augmentation schemes tried to date are inadequate and that new approaches are needed to restore natural flows and develop alternative sources of public water supplies.

## 4. The solutions

**Recommendation 5:** The Regional Plan should seek the urgent review and amendment or termination as necessary of all groundwater abstraction licences affecting the Cam Valley based on today's understanding of current rainfall and aquifer levels and environmental needs for water. This must include real cuts in actual current abstraction, not just paper savings in licensed amounts. The necessary funds will need to be made available to support this process.

**Recommendation 6:** The Regional Plan should: assess the opportunities that proposed north-south water transfers may offer to provide alternative sources of supply for the Cam Valley, to replace abstractions from the Chalk; and assess how the approach set out by the *Chalk-streams First* coalition for the south Chiltern abstractions managed by Affinity Water could be applied to, and implemented in, the Cam Valley as an alternative or in combination with new transfers.

**Recommendation 7:** Water Resources East should evaluate the feasibility and cost of treating wastewater to high standards, at all sewage treatment works in the Cam Valley, so that it can be used for public water supply, to recharge the Chalk aquifer directly, and/or to irrigate crops in locations where the contribution of treated effluent to summer river flows is not critical.

**Recommendation 8:** The Regional Plan should ask local authorities to require all new housing and business developments, where possible, to harvest, store and re-use rainfall, to include greywater recycling schemes, and to incorporate sustainable urban drainage systems (SUDS), building on the good practice demonstrated in the Eddington development in Cambridge.

**Recommendation 9:** The Regional Plan should set more demanding targets for leakage control by the water companies (e.g. a 50% reduction on current levels by 2025, 75% by 2035 and 90% by 2040) and prioritise the renewal of pipe networks outside Chalk areas where leakage will not contribute to the recharge of Chalk groundwater and will represent a net loss to the aquifer.

**Recommendation 10:** The Regional Plan should set more demanding targets for metering programmes (e.g. to meter at least 90% of supplies by 2025, and equip 50% of households and businesses with smart meters by then, with 100% coverage for both being the target by 2030).

**Recommendation 11:** The Regional Plan should seek to bring about an enduring step-change in attitudes to water use by securing support for ambitious programmes of demand management along the lines of that adopted in Cape Town. The aim should be to make Cambridge the 'No. 1' water-saving city, and the Anglian Region the 'No. 1' water saving region, in England.

**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 washers 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.

Please refer any queries to Dr Alan Woods (Editor)
info@camvalleyforum.uk
https://camvalleyforum.uk

Published by Cam Valley Forum May 2020