



Chalk Streams First response to Affinity Water WRMP draft consultation: February 2023

Abstraction reductions

Chalk Streams First (CSF) welcomes and supports the circa 150 MI/d abstraction reductions indicated for chalk stream tributaries of the Colne and Lea in Affinity Water's WRMP. This would be sufficient to almost fully re-naturalise the flows in the Colne and Lea chalk stream tributaries, the primary goal of the CSF coalition, as well as some of the chalk stream tributaries of the Ouse, where there is now an ongoing investigation into a CSF-type scheme to relieve low flows in the River Ivel.

CSF fully supports the use of the GUC transfer scheme to help underwrite the delivery of approx. 50 MI/d abstraction reductions indicated to be in place by the early 2030s. Timeliness is key, as these chalk streams have suffered from unnaturally low flows for far too long.

However, the majority of the proposed reductions are not scheduled until after 2040 and are framed as being dependent upon a large strategic resource option such as either the Abingdon Reservoir or the Severn to Thames transfer, with the supply network first identified by CSF as facilitating the scheme – "Supply-2040" – now pushed back and re-named "Supply-2050". In our initial proposal we had asked for that network to be brought forward to become "Supply-2030".

The CSF group sees either or both of these large strategic schemes as potentially important components of resilient future water-supplies, but would be extremely and justifiably disappointed if the full realisation of CSF and Supply 2030/40/50 become contingent on these schemes. This would push the ecological recovery of the chalk streams decades down the line. CSF could and should be a self-contained and timely solution and should not be made dependent on distant future schemes.

The contingency / delay appears to be based on an estimate of 17% flow recovery from chalk stream abstraction reduction at very low flows, Q95 - Q100, meaning the strategic resource is necessary to underwrite the abstraction reductions. The 17% figure derives from a triangulated process of analysis conducted by Affinity Water and consultants, summarised in Technical Appendix 5.6 "Deployable Output Benefits from Abstraction Reduction".

CSF has commissioned an independent investigation – <https://chalkstreams.org/flow-recovery-following-abstraction-reduction/> – into flow recovery from abstraction reductions. Our analysis suggests that average flow recoveries at the relevant percentiles are considerably higher than 17%. For example, our analysis of measured flow recoveries and our CSF modelling indicate that in the region of 50% to 60% of upper catchment reductions would translate into increased deployable output in downstream reservoirs at the average percentiles through the duration of 1921 and 33/34 droughts.

The delay in implementing the reductions is therefore unnecessarily precautionary.

Groundwater Insurance Scheme

However, CSF accepts that there is uncertainty over flow recovery at the relevant flow percentiles and therefore proposes urgent investigation into the viability of a groundwater insurance scheme for the Colne and Lea catchments, modelled on the West Berkshire Groundwater Scheme. Preliminary CSF modelling of such a scheme suggests that it could be used to more than offset the replacement supplies for all the abstraction reductions, and potentially yield a 55-60 MI/d of deployable output increase for London, with minimal impact on the re-naturalised chalk stream flows.

Solving the chalk stream abstraction crisis with only a small net loss to deployable output was the heart of the original Chalk Streams First proposal. Whilst underwriting the uncertainty of flow recovery (via the GUC etc.) is a sensible, precautionary approach, it would be also seem the most precautionary way forward to plan so that better-than-expected flow recoveries – ie in line with CSF predictions – should they manifest themselves, can be used to create additional deployable output.

CSF notes that groundwater schemes form a relatively small component of the WRSE draft plans and speculates that this may be because of ideological objections within various groups and agencies to the concept of “managed” aquifers and “augmented flows”. CSF feels that these objections would be out of place in the context of aquifers that are effectively intensely managed anyway. And although flow support in the year of an extreme drought would be a byproduct of a groundwater scheme, the idea is not fundamentally about flow support. It is about enabling the long-term re-naturalisation of flows through a pragmatic measure to ensure short-term public supply resilience in extreme droughts.

A groundwater insurance scheme, like the West Berkshire Groundwater Scheme, in the Chilterns would keep the CSF concept self-contained, would allow speedy delivery of chalk stream flow-recovery, and also, because it would underwrite any uncertainty, could well create a drought water resource in its own right, and free up the net gains from any of the other strategic resource options in the future.

Lower river deficits

In addition to the planned 150 MI/d reductions indicated for the chalk stream tributaries, there are signalled deficits of 79 MI/d for the Lower Colne.

In CSF’s response to the WRSE draft plan we have highlighted the need urgently to prioritise the deficits / proposed reductions within each WRMP, water resource region and nationally. The sheer scale of environmental destination abstraction reductions is causing concern in the hydro-geological community (Rob Soley “Enormous Cuts to Groundwater Abstraction in England are Unwise” CIWEM magazine February 2023) and without enough clarity on the prioritisation methodology or the forum in which prioritisation decisions can be made, positions are more likely to become entrenched and the debate more adversarial than collaborative.

The lower reaches of large rivers like the Colne are highly modified, impounded waterways where the ecology is no longer rheophilic. Without ruling out the possibility for future abstraction reductions in these sorts of settings, the ecological case for re-naturalising flows in the iconic chalk stream tributaries is demonstrably more urgent. The lower reaches, which are also much supported by discharges, will benefit considerably from abstraction reductions in the tributaries.

It is very important that we plan and deliver abstraction reductions in the most cost-effective and well ordered manner, so that they deliver genuine ecological gains in the reaches of our rivers where the greatest gains are possible and most urgent. The upper reaches of chalk streams, denuded of flow, but with potentially bio-diverse, rheophilic ecologies should be top priority and the delivery of abstraction reductions in the tributaries should not be compromised by signalled deficits in the lower, highly modified reaches of the larger catchment.

Demand Management

CSF welcomes the emphasis on leak reduction and water efficiency and supports the Affinity Water scheduled roll-out of smart metering. However, this is staggered over 15 + years. As cited in the WRSE draft plan, consumption data indicate that smart metering quickly leads to consumption within the target of 110 litres per person per day. With all chalk stream regions now designated as water stressed, there is no reason not to quickly roll out smart metering in all the areas where abstraction reduction is ecologically urgent. Therefore, CSF urges that this programme is front-loaded in such a way that the results of the early roll-out can be quickly and accurately monitored. There should be enough flexibility in the planning to accelerate the roll out if the metering is shown to be as cost-effective as data thus far suggests it will be.

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On behalf of the Chalk Streams First coalition.