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RESPONSE TO THE ANGLIAN WATER CONSULTATION (Phase 3)
of the ***Cambridge Waste Water Treatment Plant Relocation Project***

This paper sets out the Cam Valley Forum's response to the further consultation material issued by Anglian Water in Feb 2022. We have previously responded in Phase 2, explaining many of our misgivings about the whole proposal.

We have been pleased to see that some of the points raised then by us have been addressed. We commend the present intention to raise the standard of effluent water discharged and acknowledge as important the clear care that has gone on to minimise environmental harms in construction, etc. The zero carbon focus is welcomed. But some issues have been left unaddressed and we raise these again. Please could you rethink some of the underlying assumptions that we still question?

The Cam Valley Forum's concerns are that Anglian Water should still address the genuine sustainability and full ecological impacts of its operations. This requires better recognising the presently unsustainable nature of many aspects of the operation of our local water companies and at the same time better address the opportunities for biodiversity, landscape improvement and human well-being which are so important.

Our Registration details are above and we would be pleased to be kept informed by e-mail. Once again please view our comments in the light of the fact that the Cam Valley Forum is an active member of Water Resources East, of our local (CABA) water catchment partnership, CamEO, and of our networking with other conservation and sustainability organisations locally. If this project eventually does ahead, our principal concern is that the new works is built with deeper considerations some of which you still seem not to recognise.

Specifically we comment on:-

1. **Issues of Trust in relation to the development**
2. **The groundwater and climate crises in relation to water recycling.**
3. **Water Quality issues**
4. **CSOs**
5. **Other Issues**
   - Urbanisation: Green belt losses
   - New Parks and open spaces?
   - North Cambridge site and higher density of housing
   - Effluent water temperature.

1. Issues of Trust:

Cam Valley Forum wants to be a partner in achieving the right kind of change. Trust is therefore a key issue.

We are admiring of the present much larger Cambridge STW in Cowley Road. It has spare capacity. It could be better (both in treatment and elements like zero carbon) but the site sale was, in our understanding, an opportunistic move to benefit from the land sale there for housing development. The rights and wrongs of that decision is not our concern, but the future welfare of the river most definitely is.

We would point out here (see also 4. Water Quality Issues: below) that it is the upstream WWTPs appended to all the villages of the Upper Cam (in Essex) and on the Granta and Rhee (in South Cambs) that are presently the poorest in performance. Their effluent water treatment quality is poor and is therefore a greater urgency for remediation than Cowley Road.

On the face of it what is promised in the PEIR Water Resources Paper is certainly what we would want to see happening in the future. e.g. In 1.4 *"The proposed waste water treatment plant (WWTP) will operate in accordance with water quality requirements to be agreed with the Environment Agency. Consent conditions for the proposed WWTP, advised by the Environment Agency, require a reduced concentration in final treated effluent discharges of phosphorus, ammonia, total suspended solids and biological oxygen demand (BOD), when compared to the consented limits at the existing Cambridge WWTP. This means that when the proposed WWTP starts to operate, water quality in the River Cam will improve."* and in 1.5 *"The proposed WWTP will incorporate improved storm water management, resulting in reduced frequency of storm flows to the River Cam."*

Such things are impressive to us, but at the same time our present experience of both Anglian Water's past performance, present performance and the Environment Agency targets for environmental measures being kept to and achieved have too often been unimpressive or wanting. The reason for this was seemingly that the combination of profit seeking by Anglian Water, on the one hand, and an Environment Agency, on the other, that has been weakened by successive governments wanting development at all costs, has been bad. The result has unquestionably weakened protection of the environment. This is just bad governance and is largely the cause of local hostility to the present changes. Cambridge and the River Cam deserves better.

We note now, in the PEIR Water Resources Paper, that Sections 1.15 and 1.16 (ostensibly addressing **water quality**) on pages 6 and 7 are missing. What were they? Where are they? They are now blank. Is this a typographic error or was something redacted? The Section1.17 (which follows) is indeed truthful, but it must be acknowledged that this information (from the 2016 EA surveys) was sat on, in our local catchment (CamEO) meetings, for more than a year before it was shared with those concerned in that river group. Trust is thus still an issue for our members.

2. The prevailing groundwater and climate crises and water recycling.

During the development period for this project (pre-2018 to the present) there has been a fundamental local political change *in the perceptions of our Cambridgeshire water supply sustainability*. This is pertinent to Anglian Water as locally Cambridge Water supplies drinking water and Anglian Water, alone, treats waste water. At present you do not even mention the related water industry operators, in partnership with you. As members of Water Resources East we are continually surprised that there is so little joined up ecological thinking in our locality. e.g. Low stream flows do exacerbate pollution hugely.

Climate change is a real issue for all developments like yours: both drought and much greater rainfall events need to be built in to a sewage treatment works' capacity. If you do not honour the precautionary principle you may end up investing in a failed enterprise.

Cambridge Water Company's ground water dependency is admittedly not your greatest concern. *Their problem*, which is entirely relevant to your present design, is that both the human drinking water supply and the continued existence of our local Chalk streams both draw on the same limited - and arguably fast diminishing - groundwater resource. <u>They are already running an unsustainable business model</u>. Southern Britain has overdrawn on Natural Capital. There is ample evidence for this if you talk to the Environment Agency (or consider the recent Stantec Report that is guiding the Greater Cambridge partnership). The EA are calling now for a 60-70% reduction in ground water abstraction on the present levels of demand. This is to address the needs for adequate river and stream flow, most of which are greatly depleted and polluted Chalk Streams. Groundwater abstraction is at present limited by licences (that have never been revised downwards) and do bear on the sustainability of groundwater sources for the ecosystems they serve. There is also, added to this, a very real national and indeed global, climate emergency and an accelerating local demand for population increase. The non-resilience of the Chalk aquifer is made worse by these collected factors. There is huge popular demand for this to be recognised.

Why, given the water stressed status of our area, can you not commit to, rather than merely be 'exploring options' for recycling water not only to the River Cam but also to the public supply to support this need for domestic water? *This is a fundamental operational question which we feel you continue to ignore.* We have asked you not to duck that challenge. We are demanding that 'Chalk streams come first'. The EA and Natural England are supporting this. Why not therefore prioritise the need for more domestic water supplies? Now that plans for a Fenland Reservoir are being considered what is the point of pumping water back to Cambridge in pipe networks (for the Cambridge Water Company) from well beyond Ely when locally treated water from the WWTP of a higher standard could be employed directly? Could this be explained? We can see that the River can remediate to some degree your poor discharges if the river has adequate flow, but why not greater ambition? Has this been thought through? It might eventually be demanded of you by the Environment Agency. If Anglian Water started to treat domestic waste water supplies in Cambridge where would you do it? Is it in the plan?

3. **Water Quality issues**

The rivers Rhee, Cam and Granta are all classified by the Environment Agency as having 'poor' status for phosphorus, in the soluble fraction orthophosphate (SRP). Recent river water analyses by Cam Valley Forum (2021-22), focusing on the Rhee / Cam watercourse from Wendy to Waterbeach, concur with the findings from EA's regulatory testing, and confirm unacceptably high levels.

Whilst we recognise that sources from agriculture, some industries, private sewage systems, and road wash-off, may contribute to the phosphate present in the rivers, sewage treatments works are significant sources, especially so in the Cam catchment.

In a separate study conducted by Cam Valley Forum, it has been shown that concentrations of orthophosphate in a watercourse rise markedly just below the outfall of an STW. Recent evidential cases to show this at Ashdon STW, Shudy Camps STW and Bourn STW (for the latter, see https://camvalleyforum.uk/wp-content/uploads/2022/04/22-04-08-Interim-Report-on-phosphate-monitoring-in-the-upper-Bourn-Brook-and-its-tributaries-spring-2022.pdf). Large increases are not found just downstream of STWs on the lower Rhee – e.g. Haslingfield STW – because the amounts in the final effluent are diluted by the river flow. Nevertheless, in the lower Rhee, the concentration of orthophosphate in the river will increase after addition of the effluent; similarly this will happen at every STW discharging into the river.

River flows matter to us hugely. In recent years we have seen very low summer flows which exacerbate the effects of all pollutants including phosphorus. In August 2019, for instance, we calculated that 40% of the river flow at Cambridge was effluent from STW sources. Eutrophication causes excessive weed growth and damages wildlife diversity.

Compared to the SWTs further upstream, the discharge rate of final effluent from the present Cowley Road Cambridge Water Recycling Centre is huge. During low summer flows, in particular, the effluent is not highly diluted by the river flow. In fact, it may at times be diluted only by a factor of around 2.5. The existing WRC may be more efficient at removing phosphorus from the effluent than a rural STW but the impact of the effluent on the environment cannot be underestimated. We believe that it is imperative to ensure that the consent at the new WRC is reduced from the current 1 mg/l Total Phosphorus to at least 0.25 mg/l, as will be required by AMP7.

We would like to see better. Using the drivers of the Urban Wastewater Treatment Directive (UWWTD) and the Water Framework Directive (WFD) as the starting point, we want the design for the new WRC to seize the opportunity to further improve the quality of the treated effluent discharged to the River Cam. Thus, we expect Anglian Water seriously to consider further investment in phosphate reduction to an aspirational 0.2 mg/l Total Phosphorus (Greater Cambridge Local Plan Consultation: Response from the Cam Valley Forum, 13 December 2021). This is essential for Chalk Stream recovery. We need to see as soon as possible, marked reductions in phosphorus discharging from STWs higher in the catchment. This is the urgency. The existing high concentrations of phosphorus in the Cam upstream of the new WRC site should not be seen as an excuse for failing to reduce the phosphorus outflow at the design stage for the new WWTP site to the lowest level possible. We

are pleased to see the changes projected though for phosphorus we do not believe that your proposed limit of 0.4 mg/litre P is sufficiently low, and must be addressed.

4. CSOs

The importance of just this issue, at least politically, has grown since February. To our eyes the existing Cowley Road site seems better served to minimise raw sewage getting into the Cam (see the AW odour report - CACC17A_06_draft (cambridge.gov.uk). "Storm flows received at the works (those above 3x dry weather flow) are removed via storm weirs located downstream of the screens and diverted into **2 open circular storm tanks** via enclosed pipework. Once the incoming flow rate into the works subsides the storm water within the tanks is returned to the works for treatment. The storm tanks are fitted with scrapers which are designed to prevent the accumulation of potentially odorous sediment on the base of the tanks after emptying. In extreme rainfall events the storm tanks fill and overspill (via enclosed pipework) into a **large (approximately 100m x 140m) storm lagoon which is designed to store storm effluent which then soaks into the ground.** Once the effluent has soaked away a residual sediment layer is left on the base of the lagoon which (according to site operators) typically results in a notable odour in the immediate area for between 10 and 14 days. Site operators believe that the **lagoon is typically filled once per year on average**". In (PEIR Water Resources Paper) 1.22 you say that this presently occurs as infrequently as once in ten years.

You then say later on page 21 "The impact of increased treated flows on CSO discharges has not been modelled. However, improved through flow of storm water to storm tanks might be expected to reduce CSO discharge frequency. This could also have a beneficial impact on river water quality." Does this mean that you are or are not building in the capacity that Cowley Road has? It is not clear on page 22 what precisely you are aiming to achieve. However, any performance with respect to CSOs should be as good as present Cowley Road performance or it will not be good enough.

5. Other Issues

(a) Urbanisation: Green belt losses.
We regret the heavier urbanisation of Cambridge City and Green Belt losses. Such changes will inevitable damage the natural environment. Such decisions are not for Anglian Water but you can and should state that the best way of remediating water is to work with nature (e,g. Ingoldisthorpe). This is harder the more urbanised we become.

(b) New Parks and open spaces.
Anglian Water cannot provide meaningful increase on the new site of good open space. It will be badly affected by odour as is the Milton Country Park (which is already at capacity). Claiming this is really 'greenwash'.

(c) North Cambridge site and higher density of housing.
This higher density living is again unwelcomed by many CVF members. The mitigation might be increased recreational access to the River, but the river is

already highly overloaded with activities in that vicinity. There are already conflicts on the congested tow-path (dogs, walkers, cyclists, rowers and anglers, etc)

(d) Effluent temperature

The three or four degree (^{o} C) temperature increase of effluent water (In PEIR Water Resources Paper) page 22 is important to keep down. However, our own examination of the EA Water Quality Archive regulatory data reveals that the effluent temperature (you quote 9^{o} C - 19^{o} C in 2021) was actually 10^{o} C - 26^{o} C in 2019. You are right that high BOD from inadequate water treatment plus warming of water is lethal to many fish. Anglian Water has, in the past, been reluctant to accept responsibility for some pollution incidents (e.g. only admitting culpability for a fish kill incident on the lower Cam in 2013 after the Cambridge Fish Preservation and Angling Society took Anglian Water to Court and won). Could effluent be cooled in hot summers? Fish kills are bad press.

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