Newnham
Nately Scures & Water End
Parish Council

Loddon Catchment Implementation Plan: Draft for Comment

Newnham Parish Council is aware that the Whitewater Valley Preservation Society (WVPS) is preparing a detailed response and we support fully their comments.

We would particularly like to draw your attention to the following points.

1. Abstraction and effluent discharge are clearly interconnected and result in modifications to the flow and the chemical composition of rivers, consequently they have an impact on the ecosystem. Climate change, including changes in rainfall and longer growing seasons, is having an impact on the health of our rivers and other water bodies. Higher spring and autumn temperatures have caused trees to produce and retain leaves for longer each year lengthening the transpiration season. Overall, less water is reaching the aquifers and rivers.

2. With reduced water flow in rivers but no reduction, more likely an increase due to further housing development, in sewage effluent discharges, it is inevitable that discharges from Sewage Treatment Works (STWs) will make an increasing contribution to downstream river flows. We understand that the Loddon already exceeds the Water Framework Directive (WFD) level by a factor of 3. It is obvious that without an improvement in performance of the Chineham STW the concentration of phosphates in the Loddon will continue to grow and we believe the watchdog of an an environmentally responsible society (the role of the Environment Agency) should ensure that measures are taken to reduce the phosphate level in the lower reaches of the Loddon. It should not complacently accept an increase, even if this does not cause the water quality to fall into a lower WFD quality band or to claim that a reduction in phosphate in Chineham STW effluent would incur unacceptable costs which would have to be passed on to customers.

3. From the Water Cycle Study (WCS) we understand that the Environment Agency's licence for the Chineham STW sets the level of phosphate in the effluent at 1 mg/l. A short search on the web identified the following site:

www.idswater.com/Common/Paper/Paper_195/Achieving Low Effluent Total Phosphorus Concentrations1.htm

which concludes:

> *Full-scale operating data reported in the literature and provided by North American STWs required to meet stringent effluent total phosphorus limits suggests that achieving..... 0.10 mg/l or less is possible.*

The introduction states that in the 1960s:
The Canada-US Agreement on Great Lakes Water Quality mandated that all Waste Water Treatment Plants …..achieve an effluent concentration of 1mg/l or less..... By 1991, many WWTPs in Ontario had total phosphorus limits between 0.3 and 0.5 mg/l embodied in their Certificates of Approval..... In the 1990s..... design objectives of 0.10 mg/l total phosphorus were embodied into some some Certificates of Approval for WWTPs in Ontario.

We understand that similar levels of 0.10 mg/l are also being achieved by STWs which discharge into environmentally sensitive water bodies in Switzerland.

4. We are also very concerned about the level of oestrogen and the metabolites of medications used by local communities which must be entering our rivers from local STWs. Without accurate data on oestrogen and medication metabolites concentrations and their effect on micro- and macro-invertebrates and aquatic vertebrates, a plan to remedy the potential problems cannot be prepared and therefore the CIP would be defective. These materials will increasingly contaminate our rivers unless removed. Reference to literature and the Engineering Sciences Department, University of Oxford confirmed that:

A survey of data for Sewage Treatment Works (STW) revealed that the spread of removals of oestradiol (E2) is 75-99%. Oestrone (E1) can also be removed by up to 99%, but on occasion poorer removal is seen - down to 10%. However oestrone is easily hydrolysed to oestradiol. E1 and E2 are the "natural" female hormones, though men also excrete small quantities of them.

The active ingredient of the birth control pill, ethinyloestradiol (EE2) is known to be somewhat more difficult to break down in STWs, and certainly we have found it to be longer lived in our laboratory tests. EE2 is not a compound that occurs in nature, so this accounts for its greater stability. However, depending on circumstances this can also be removed by up to 99%.

It is therefore imperative that an action plan to obtain accurate data on the level of these materials and to take any appropriate action is included in the CIP.

5. We are very concerned that the EA appears to be saying that the Upper Loddon has been modified by abstraction and sewage effluent discharge and for these combined reasons it is now classified as a Highly Modified Water Body (HMWB). We infer that the EA is now reasoning that 'the present phosphate level, which is 3 times the WFD requirement, is acceptable.' Is this why the EA 'signed-off' the very controversial Basingstoke Water Cycle Study? If so, we would regard it as a shameful action.

6. If a low priority has been given to the Upper Loddon's Poor Ecological Status because the river has been 'physically modified by human activity', then we cannot agree. From its source to its confluence with the Blackwater, the Loddon is over 24 kilometres in length if all the meandering is considered. Whilst about 4 kilometres in Basingstoke town could be classified as 'physically altered' and 'substantially changed in character', the remaining approximately 20 kilometres are largely in a natural state.

7. We do not accept that it is sufficient for the CIP, as indicated in Appendix VI (page 34) Basingstoke/Swallowfield, for the EA 'To ensure future development does not contribute to a deterioration in the class of water body'. In our view this is lacking in ambition, it is totally irresponsible and unacceptable to take this approach towards managing one of Hampshire's only two north flowing Chalk Rivers.

8. In Appendix VI from page 34 where you identify Local Authorities under external partners, we believe that Parish Councils should at least be given the opportunity to become involved.

Roger Booth
Chairman
Newnham Parish Council
27th January 2012