



## South Wiltshire Core Strategy: River Avon SAC Phosphate Management Plan

### Introduction

Core Policy 20 of the South Wiltshire Core Strategy Proposed Submission Document proposes that developers engaged in the delivery of strategic housing and other construction projects should contribute funds to the undertaking and implementation of a Phosphate Management Plan (PMP) designed to improve water quality in the (Hampshire) River Avon Special Area of Conservation (SAC).

This paper presents the rationale for the proposed PMP and its implementation.

### Background

The need for the contributions to the PMP has arisen from an assessment of the proposed Core Strategy under the terms of the Habitats Regulations.

The Habitats Regulations (formally the Conservation (Natural Habitats &c.) Regulations 1994 (as amended)) transpose into national law the EC Habitats Directive. The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance<sup>1</sup>. Sites which support these important species and habitats are designated as Natura 2000 sites, and these include SACs.

Amongst other provisions, the Habitats Regulations require that proposed construction projects, development plans and programmes should be subject to a Habitats Regulations Assessment (HRA), in order to determine whether or not the implementation of the project, plan or programme would have an adverse effect on any Natura 2000 site, either individually or in combination with any other projects, plans or programmes. The HRA must be made in light of the Conservation Objectives applicable to a specific SAC and the factors responsible for maintaining its overall integrity.

Habitats Regulations 48 and 50 require that the precautionary principle be applied: a project, plan or programme should only be permitted once it has been demonstrated that there will be no adverse effect on any Natura 2000 site, unless there is imperative reason of overriding public interest.

Given that SACs which could be affected by the proposed Core Strategy are present in South Wiltshire, HRA is a legal requirement.

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<sup>1</sup> Joint Nature Conservation Committee: <http://www.jncc.gov.uk/default.aspx?page=1374>

## HRA of the South Wiltshire Core Strategy

The HRA of the proposed Core Strategy<sup>2</sup> included consideration of the potential effects of the proposed policies on Natura 2000 sites in South Wiltshire. One of the issues considered was the effect of increased nutrient loads, and particularly of phosphates discharged from sewage treatment works to the River Avon SAC as a result of the new housing and other development proposed in the Core Strategy.

The River Avon SAC is designated as a Natura 2000 site by virtue of its supporting the internationally rare plain and submountainous river habitat characterised by floating water crowfoot (*Ranunculus*) and starwort (*Callitriche*) vegetation; and the species brook lamprey (*Lampetra fluviatilis*), Atlantic salmon (*Salmo salar*), sea lamprey (*Patromyzon marinus*), bullhead (*Cottus gobio*), and Desmoulin's whorl snail (*Vertigo moulinsiana*). The River Avon system, which includes its major tributaries (the Upper Avon, Wylye, Nadder, Bourne and Dockens Water) and parts of the floodplain, is one of the most important chalk river systems in the UK. The system has over 180 species of river plant, one of the most diverse fish populations, and a wide range of river invertebrates. In addition, the river is important for its populations of water vole (*Arvicola terrestris*) and otter (*Lutra lutra*), which are UK Biodiversity Action Plan listed species and are in danger of extinction in large areas of the UK. Habitats associated with the river include swamp, wet woodland and wet grassland.

The lower reaches of the River Avon and its floodplain, one of the largest expanses of unimproved floodplain grazing marsh in Britain, comprises a complex mosaic of wetland habitats including fens, mires, wet grassland, wet woodland and unimproved floodplain grassland, supporting populations of breeding and over-wintering wetland birds and rare wetland plants and insects.

Phosphate concentrations in the River Avon SAC are currently in excess of the standards (formulated and agreed by the Environment Agency and Natural England) embedded within the Conservation Objectives for the SAC. Because current phosphate levels exceed these targets set out in the Conservation Objectives, the integrity of the SAC is considered to be threatened. In response, and in accordance with other requirements of the Habitats Regulations, the Environment Agency has already undertaken a review of discharges from sewage treatment works (STW), which are recognised as one of the main contributors of phosphate to surface waters. As a result of this review, the Environment Agency required phosphate discharges from 17 sewage treatment plants to be reduced by the application of new phosphate stripping technology. This upgrade work is ongoing and will be completed by Wessex Water in March 2010. The works will reduce phosphate discharge from the STWs to a level which is considered by the Environment Agency to be the lowest that is reasonably achievable based on existing technology.

However, the STW improvements will not, according to EA predictive modelling, be sufficient to reduce phosphate concentrations to below the agreed standards across the majority of the SAC. The improved discharges, when combined with inputs from other sources, still significantly contribute to an adverse effect on the integrity of the SAC. In order to conclude that these discharges are no longer contributing to an adverse effect on SAC integrity, an additional Site Action Plan (SAP) is required to ultimately reduce levels of phosphate to below the targets in the Conservation Objectives. This requirement is supported by the provisions of Article 6.1 of the Habitats Directive. The provisions of the SAP should be based on sound science and should contain measures which are proven to be successful, or in which there is reasonable confidence as to their efficacy. There should be a reasonable prospect of reducing phosphate levels in the river and ultimately achieving favourable conservation status of all site interest features. To meet this requirement, the Environment Agency

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<sup>2</sup> South Wiltshire Core Strategy Proposed Submission Draft, July 2009: Habitats Regulations Assessment Report, Nicholas Pearson Associates, July 2009

and Natural England are already developing a SAP - which has been given the name 'Phosphate Management Plan' - for the River Avon SAC.

In light of the above background information, and given that the proposed new development outlined in the Core Strategy will lead to increased throughput at sewage treatment works, and therefore increased phosphate discharge, the HRA was not able to conclude that the proposed new development would not have an adverse effect on the River Avon SAC. Therefore, some form of mitigation would be required to enable the proposed development to go ahead in compliance with the Habitats Regulations.

However, the HRA acknowledged that the phosphate contributions from the proposed new development cannot be mitigated directly, because, as noted above, and based on advice from the Environment Agency, best available technology for phosphate stripping is already in place (or will shortly be in place) at all major STWs. Therefore, any mitigation must be applied indirectly; i.e. it will need to address sources of phosphate contribution other than the STWs.

As a result of the considerations described above, Core Strategy Policy 20 identifies the need for all proposed developments listed in the Core Strategy to contribute financially to the undertaking and implementation of a PMP. The purpose of the PMP is to reduce phosphate concentrations in the River Avon SAC by addressing non-STW sources. As noted above, the PMP is already under development by the Environment Agency and Natural England, and is subject to funding from various sources. Developer contributions associated with Core Strategy construction projects will be one source of funding. This arrangement acknowledges the additional phosphate contributions that will result from the new development, but seeks to offset these contributions by addressing other sources. As noted in the HRA, these other sources include farmyards, farmland runoff, river bed sediments, small STW and other domestic point sources, aquaculture, roads and diffuse urban runoff.

The developer contributions to the PMP will facilitate the Core Strategy's compliance with the Habitats Regulations.

### **Coordination and Implementation of the PMP**

The PMP will be implemented by a group including Natural England, the Environment Agency and Wessex Water (with Wiltshire Council also having a role in relation to developer contributions). Measures aimed at reducing phosphate concentrations in the River Avon SAC are already being undertaken by these partners and will be included in the PMP once formulated:

- Catchment-sensitive farming (CSF) initiative, which aims to advise farmers on effective land management and pollution reduction;
- Agri-environment schemes, which promote environmentally sustainable farming;
- Soils for Profit scheme (SFP) , which focuses on how good environmental management can have financial benefits; and
- Main STW upgrade works (as described above).

In addition, several research projects are underway which may eventually lead to specific schemes to be adopted within the PMP; for example:

- Studies on phosphate source apportionment;
- Research on septic tank contributions;
- Review of phosphate stripping technologies; and
- River Avon Demonstration Test Catchment project.

Wiltshire Council will ensure that the part of the PMP budget originating from developer contributions will be focused on projects that:

- Specifically address phosphate reduction in the River Avon SAC;
- Are based on sound science and will contain measures which are either proven or considered reasonably likely to be successful; and
- Have the ultimate aim of achieving the Conservation Objectives of the SAC.

The initial focus will be on measures in sub-catchments upstream of STWs where additional phosphate loading will result from new development. Preliminary consideration of the types of project which may be funded includes:

- Capital grants to mitigate phosphorous transport to the river (e.g. from farm tracks / yards or highway drainage systems), which may include construction of sediment traps or filter fences, re-surfacing of tracks, and improvements to highway run-off management to help accommodate increased traffic;
- Improvement of septic tank infrastructure, and advice campaigns on their management; and
- Improvements to river profile and channel structure where this will enhance flow diversity and velocities, improving sediment (and phosphorous) transport through the river system.

As noted above, Natural England and the Environment Agency are already undertaking research work to better understand the relative importance of non-STW sources of phosphate in the River Avon system; it is envisaged that the results of this work will continually improve the efficient targeting of funds. However, there is already a high level of confidence that specific locations in the catchment where actions are required can be identified.

### **Developer contributions to the PMP**

Determining the level of developer contribution required by Core Strategy Policy 20 is not straightforward. Because best available technology is already considered to be in place at STWs, developer contributions for phosphate mitigation cannot be applied directly at the STWs. Instead, it has been determined that offset mitigation is necessary, to address sources of phosphate other than STWs. Due to the generally diffuse nature of these sources the cost of mitigation is very difficult to determine; thus the level of developer contribution would be difficult to calculate on a scientifically justifiable basis. It is therefore considered that a pragmatic and fair solution is to set the developer contribution at £200 per dwelling, in the case of residential development. For other forms of development, a figure would be derived based upon wastewater production as compared with the dwelling case.

Developer contributions will be payable in association with all strategic developments identified in the Core Strategy and will be managed via Section 106 agreements. Once implemented, the Community Infrastructure Levy (CIL) may provide a more appropriate framework. The amount of the charge will be determined when Planning Permission is granted and the charge will be payable upon commencement of development (as defined by the 1990 Town and Country Planning Act).

The fund will be administered by Wiltshire Council, who will also administer its allocation within the PMP.

### **Reporting**

Annual reports describing allocation of the contributions and projects undertaken will be prepared by Wiltshire Council.