Wealden District (Incorporating Part of the South Downs National Park)

Submission Core Strategy Supporting Document

Waste Water Position Statement
Hailsham North and Hailsham South Waste Water Treatment Works
(August 2011)
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Introduction

1.1 This Paper supplements the Habitat Assessment concerning the Hydrological Impact of the Core Strategy on the Pevensey Levels, and provides additional explanation of the calculations concerning waste water capacity in Hailsham North and South Waste Water Treatment Works contained within the Submission Core Strategy, Background Paper 1 to the Submission Core Strategy entitled Development of the Core Strategy and the Infrastructure Delivery Plan. This paper also explains the options that are being explored to create additional waste water capacity, and the issues related to the delivery of such options.

The Principles of the Habitats Directive

2.1 The Habitats Directive requires that any plan not directly connected with or necessary to the management of a European Site but likely to give rise to a significant effect, either individually or in combination with other plans or projects, be subject to appropriate assessment (AA). National authorities are advised that the plan should only be adopted after it is ascertained that it will not adversely affect the integrity of the site concerned.

2.2 The Directive further stipulates that if a negative assessment has taken place, and in the absence of alternative solutions, the plan may be adopted if there are imperative reasons of overriding public interest with compensatory measures to ensure the overall coherence of Natura 2000 is protected.

2.3 There are four key stages of AA as defined in the European Commission guidance Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43 EEC (November 2001).

Stage One: Screening

Examination of the likely effects of the plan, alone and in combination with other projects or plans, upon a Natura 2000 site and consideration whether it can be concluded that these effects will not be significant.

Stage Two: Appropriate Assessment

If it is considered that the plan will have a likely significant effect on a Natura 2000 site it is necessary to undertake an appropriate assessment to determine the implications for the site, alone or in combination with other projects or plans, in view of the site’s conservation objectives. If the plan has an adverse effect on the integrity of the European site then mitigation will need to be considered.

Stage Three: Assessment of Alternative Solutions
Where a plan is considered to have an adverse effect on the integrity of a European site, and it is not possible to mitigate against those effects, then it is necessary to assess alternative ways of implementing the plan.

Stage Four: Assessment where no Alternative Solutions Exist and where Adverse Impacts Remain

In exceptional circumstances, where an alternative solution has not been found the plan may commence in light of ‘imperative reasons of overriding public interest (IROPI)’ or, in certain circumstances, where there are human health or safety considerations or important environmental benefits. In such cases compensatory measures must be put in place to offset the negative impacts.

2.4 The European Commission publication, Managing Natura 2000 Sites – The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC (2000) provides guidance on the terminology used in the Habitats Directive to ensure that, in legal terms, the provisions of the Habitats Directive are met. In terms of screening the phrase ‘likely significant effect’ has been defined. It is stated that, “The notion of what is ‘significant’ needs to be interpreted objectively. At the same time, the significance should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking into particular account the site’s conservation objectives.” In addition, it is necessary to consider the ‘likely’ significant effect, which involves the precautionary principle.

Pevensey Levels and the Habitats Directive

3.1 Development (requiring mains sewerage) within Hailsham, Hellingly, Polegate, Willingdon, Upper Dicker, Chiddingly, Muddles Green, Lower Dicker, Magham Down and Jevington, and any development in excess of infill in Stone Cross, is served by either Hailsham South or Hailsham North Waste Water Treatment works.

3.2 Hailsham South and Hailsham North Waste Water Treatment Works (WwTW) discharge treated effluent into the Pevensey Levels. The Pevensey Levels is a designated Ramsar site and a candidate Special Area of Conservation (as of February 2011). The Government requires that Ramsar sites be treated in the same manner as Europa sites, as defined by the Habitats Directive, and therefore the AA of the Core Strategy, by virtue of an increase in waste water being connected to Hailsham North and Hailsham South WwTW, was undertaken in relation to the Core Strategy. Subsequently the Pevensey Levels was designated candidate Special Area of Conservation

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1 IROPI is discussed in the European Commission paper Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC

2 The precautionary principle is defined as “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”. (1992 Rio Declaration on Environment and Development)
(SAC), and under the Habitats Directive is required to be considered, as a matter of European law. The Habitats Regulation Assessment (HRA) of the Pevensey Levels undertaken for the Core Strategy identifies that any discharge in addition to that consented would need to be avoided in order to comply with the Habitats Directive.

Waste water and consents

4.1 Hailsham North and Hailsham South WwTW discharge treated waste water into the Pevensey Levels, under consent of the Environment Agency. The relevant consent in relation to this issue is called the Environmental Permit, which is expressed in terms of Dry Weather Flow (DWF) (cubic metres per day (m$^3$/d)). DWF is measured by Southern Water, and certified flow data is provided to the Environment Agency on a yearly basis. In addition, there are other consenting conditions in relation to the load of treated waste water discharged including total phosphorous, suspended solids, biological oxygen demand (BOD) and other elements. The receiving waters are also subject to consideration under the Water Framework Directive (WFD).

4.2 The conservation features for both the Ramsar site and the candidate SAC relate to the water quality of the Pevensey Levels. The situation relating to the North WwTW is that good status for phosphorus (under the Water Framework Directive) is being met at the receiving waterbody associated with the discharge location, with a phosphorous consent currently set at Best Available Technology (BAT) of 1mg/l to meet European Standards. A similar situation is found at the South Hailsham WwTW, however the waterbody receiving effluent from the WwTW is not achieving good status for phosphorous. The current discharge consent allows an increase in flows to the WwTW but no more load.

4.3 It is the current position of the Environment Agency that, based on current information, it will not increase the consent discharge load for either WwTW to prevent deterioration of the receiving waterbodies in line with WFD objectives. As this relates to the volume of effluent that can be discharged (as opposed to treatment) it is necessary to find an alternative solution.

Review of consents

5.1 As required by the Habitats Directive, the Environment Agency is undertaking a review of consents regarding Hailsham North and Hailsham South WwTW. By the end of April 2011 it was anticipated that stage 3 of the review would be published. Stage 3 determines whether further work is required in terms of reviewing the consents. Ultimately the review has the capacity to increase, retain or reduce the consented discharge capacity of both WwTWs. In addition to this DEFRA is currently considering the WFD standards, which may also have an impact upon the consented load if a 'no
deterioration policy' removes the currently available headroom in the discharge permit.

**Discharge capacities**

6.1 The discharge capacities, based on current discharge consent, are calculated as follows:

**North WwTW**

Hailsham North Consented Capacity = 3162 m$^3$/d  
Measured DWF rate (1st Jan 2007)  = 1680 m$^3$/d  
Available capacity (1st Jan 2007)  = 1482 m$^3$/d

Using a conversion of 500 litres per household per day the available capacity as of 1st January 2007 is an equivalent of 2964 dwellings or rounded to 2900 dwellings.

**South WwTW**

Hailsham North Consented Capacity = 7120 m$^3$/d  
Measured DWF rate (1st Jan 2007)  = 5890 m$^3$/d  
Available capacity (1st Jan 2007)  = 1230 m$^3$/d

Using a conversion of 500 litres per household per day the available capacity as of 1st January 2007 is an equivalent of 2460 dwellings or rounded to 2400 dwellings.

**Extant Planning permissions, and completions as from 1st April 2006 to 1st April 2010**

Hailsham North Catchment Area = 1128 dwellings  
Hailsham South Catchment Area = 885 dwellings

**Significant planning permissions granted post 1st April 2010 and suitable and available allocations in the Non Statutory Wealden Local Plan**

Hailsham North = 255 dwellings

**Headroom from April 2010**

North WwTW = 2964 - 1383 = 1581 dwellings  
South WwTW = 2460 - 885 = 1575 dwellings

**Windfall allowance as of April 2010, taking into account allocations in Core Strategy**
North WwTW = 1581-1300 - 10 = 271 windfalls (dwellings) over a 20 year period 2010 - 2030

South WwTW = 1575 - 1350 = 225 windfalls (dwellings) over a 20 year period 2010 -2030

Use of the presumption of 500 litres per dwelling per day

7.1 The Environment Agency used the conversion factor of 500 litres per dwelling per day (to convert volumetric capacity to number of houses) in the paper Creating a Better Place: Planning For Water Quality on the South East (October 2006). This paper was part of the Environment Agency submission in relation to the South East Plan, and was the basis for the entries in the final plan relating to waste water capacity in Wealden. The 500 litres is agreed with Southern Water and is based on an occupancy of 2.5 persons per household consuming 200 litres per person per day. This figure includes flows associated with employment development and other unaccounted flows.

7.2 The following considers the potential impact upon 500 litres per household per day by water metering and water efficiency measures:

Impact of Water Metering on the Assumption of 200 litres per person

7.3 In theory, the introduction of universal water metering in Wealden District (as agreed by OFWAT) could reduce the amount of water returning to the sewer and therefore increase the amount of housing that could be connected to the existing waste water treatment works. However, there is no evidence available to demonstrate that the reduction in the water consumed has a direct and proportional correlation to the water that returns to the sewer. The Water Industry is currently undertaking research to quantify this issue.

7.4 The issue is that water metering impacts on not only appliances within the household which return to the sewer but also water usage that does not reach the sewer. Therefore the reduction in the use of water to wash the car or water the garden will not have an impact on the return to sewer rates, as the water consumed does not return to the mains sewer. It can be argued that it is these less essential types of activities that consume a large proportion of water and therefore are the most likely to be reduced in terms of water consumption when a water meter is connected. In the absence of evidence and using the precautionary approach, it can not be assumed that there is direct proportional correlation between the reduction in water consumption when a water meter is installed and the reduction in the return to sewer.

Water Efficiency in new homes and the impact upon the Assumption of 200 litres per person
7.5 Building Regulations (as of April 2011) require measures to be provided to enable a consumption rate of 120 litres per person per day\(^4\). In the absence of evidence, it may be assumed that the installation of water efficient appliances in new homes may have an impact of the amount of water returning to sewer. However, depending on the type of appliance installed to reduce water consumption it would not be beyond the ability of occupiers to change appliances to suit their needs and therefore increase water consumption. For example a water saving bath or shower may be changed to a power shower or a larger capacity bath by the occupier after the house had been signed off under Building Regulations or the Code for Sustainable Homes. Therefore whilst these measures may have the ability to reduce return to sewer, the effectiveness and therefore the ability to rely on the assumption of reduced water returned to sewer is not proven.

*Commercial Uses*

7.6 The Core Strategy does not only seek to provide for housing but also commercial and public property. These uses will inevitably increase the load to the sewer. The current standard of 500 litres per dwelling incorporates a proportion of commercial use as well as infiltrations within the catchment area. Additional development including commercial and public property will need to be accommodated in the headroom that is available.

*Mitigation and alternative discharge locations*

8.1 Southern Water is considering three alternative options in order to treat and discharge waste water in excess of the discharge consent at Hailsham South and North WwTW. The three options are subject to a feasibility study which was commissioned in 2011 with an anticipated delivery date of 2013. This work will be used in order to bid for OFWAT funding in the 2014 bidding round.

8.2 The three options for accommodating flows in excess of those already consented are:

- Build a new waste water treatment works and corresponding discharge point for future flows arising in the catchment into the Cuckmere River; or
- Extend and upgrade Eastbourne WwTW and pipe future flows arising in the catchment to Eastbourne WwTW for discharge to sea at an existing discharge location; or
- Create new discharge point to sea and create new waste water treatment works and pipeline for future flows arising from the catchment.

8.3 As the water levels are of particular importance to the biodiversity of the Pevensey Levels the current position of the Environment Agency, (subject to the review of consents) is that the diversion of the current discharge levels to an alternative location should be avoided.

\(^4\) Building Regulations provides for 5 additional litres relating to external usage and therefore not returning to sewer
8.4 Therefore, to achieve the SE Plan housing target (11,000 across the District) the alternative discharge location would be seeking to treat (within the plan period) an additional 1,400 homes than that stipulated in the Core Strategy and any additional windfalls not accounted for. All these options have a number of issues, which provides a risk to the timely delivery of infrastructure and will have cost implications. The issues relating to the solutions are:

Cuckmere River

8.5 The Cuckmere River is subject to the Water Framework Directive and it is yet unknown whether a licence to discharge will be granted. This requires modelling to determine whether there would be any impacts on the water quality of the receiving waters. This is complicated by the fact that at Arlington, down stream of Hailsham, water is extracted for potable water supply and any potential impact will need to be assessed. In addition, the Beachy Head to Selsy Bill Shoreline Management Plan\(^5\) recommends that in the long term the point at which the River (of this tidal River) meets the sea is subject to 'no active intervention', and the impact of waste water discharge will need to carefully considered in relation to the unique qualities of the estuarine ecology which may be created by this policy. Notwithstanding this, the majority of the land close to the River is green field and not associated with a large settlement. The impact of large scale greenfield development in an isolated context will need to be carefully considered in a planning sense as well as the ability to acquire land. The risks associated with this development therefore include: the ability of Southern Water to obtain a discharge consent in the context of environmental impact, sensitive greenfield development in the absence of an allocation in any waste development plan; the cost implications of building a new waste water treatment works and pipeline (probably the shortest of the three options); and, if necessary, the implications of land acquisition.

New Discharge Point at Sea

8.6 The coast line is approximately 8 kilometres from Hailsham. In order to reduce the environmental impact on receiving waters an option is to dispose of treated waste water to sea. Modelling of the dispersal of treated waste water would be required in order to obtain a discharge consent and to maintain the quality of bathing waters in the area.

8.7 There are built up areas by the coastline (although subject to tidal flood risk), which may be able to accommodate a new waste water treatment works, although it will be necessary to acquire the land and to meet the flood risk needs of the infrastructure. The engineering works required to treat the waste water is a yet unknown cost factor. In addition to this cost it will be necessary to create new infrastructure to pipe and pump waste water from the areas where waste is arising to the coastal strip. There will be a need to

\(^5\) http://www.chichester.gov.uk/index.cfm?articleid=16843
consider the costs of creating new pipelines to and through urban areas, or the environmental impact (or indeed the acceptability) of installing a pipeline across the Pevensey Levels, or the cost of diverting a pipeline around the more rural areas. All these potential alternative solutions pose deliverability risks in terms of environmental impact and the ability to obtain planning consent to undertake the work.

Use of Eastbourne Waste Water Treatment Works

8.8 Eastbourne Waste Water Treatment Works is located underneath the seafront in the built up area of Eastbourne. The treatment works discharge to sea. Although there is consented discharge capacity to take the waste from the additional 1,400 dwellings, the treatment capacity is limited to the waste water required to serve the Eastbourne Core Strategy.

8.9 Therefore, in order to process Wealden's waste it will be necessary for Southern Water to extend the treatment works. This will require expansion of the underground works. This is an issue in terms of technical and legal ability to undertake the works and the costing of building underground facilities. It would also be necessary to pipe waste to the treatment works from Wealden which would require new sewerage infrastructure and would involve the same issues as identified above.

Conclusion to Alternative Solutions

8.10 Each alternative option has risks, which may have implications of the timescale involved in the delivery of the preferred option. The timing of obtaining consent (both from the Environment Agency as regulator and the Waste Planning Authority) and delivering the preferred option is difficult to anticipate due to the number and broad range of unknown factors involved. However, in general, works of the scale envisaged do take a number of years to undertake from preparing the feasibility study to completing the works. Notwithstanding this, OFWAT will be required to approve the investment, which may also have implications in terms of the time scale for delivery.

Conclusion

9.1 The Pevensey Levels is a sensitive environment protected by European Legislation. The Hailsham North and South Waste Water Treatment Works discharge into the Pevensey Levels, and are subject to strict discharge consents that limit the volume and load discharged.

9.2 The wastewater treatment headroom is shown as number of additional dwellings that may be connected to the mains sewerage system. This figure takes into account other commercial uses and is based on an average use of 500 litres per dwelling per day. Water metering and water efficiency measures may increase headroom. However, as we do not yet have evidence to show that this is the case we should proceed on a precautionary basis. It can not be assumed that there is a direct correlation between these measures and reduction in the load return to the Waste Water Treatment Works.
9.3 In order to find an alternative discharge location for flows in excess of those currently consented, Southern Water have commissioned a feasibility study to assess alternative options. Each option has planning and environmental issues that will need to be considered and funding for the investment required will need to be secured through OFWAT. Timing of the delivery of a solution will be dependant on the preferred option involved and the complexity of issues.