



STRATEGIC PLANNING
POLICY OVERVIEW COMMITTEE

***WATER & WASTEWATER, PARTICULARLY
IN ASHFORD***

Select Committee Report

September 2005



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Cover photo courtesy of KCC Corporate Communications.

1. Introduction

1.1 Committee Membership

The Select Committee comprised eight Members of the County Council, five Conservative, two Labour and one Liberal Democrat:-

Mr D Hirst (Chairman)
Mr C G Findlay
Mr P M Hill
Mrs P A V Stockell
Mrs E Tweed
Mr A R Poole
Mr D Smyth
Mr D Daley

The County Members agreed that Councillors from Ashford Borough Council be co-opted to serve on this Select Committee:-

Councillor Cowley
Councillor Davidson
Councillor Heyes
Councillor Packham – Mr Koowaree (County and Ashford Borough Councillor) substituted for Councillor Packham in some sessions.

1.2 The Terms of Reference

The Committee will consider and comment on issues regarding water and wastewater, particularly in Ashford and the Stour catchment area upstream of Wye.

The Terms of Reference for this Select Committee were that it should consider and comment on issues regarding water and wastewater, particularly in Ashford and the Stour catchment upstream of Wye. These issues would include:

- the stability of the water system in and around Ashford, water resources available and the current level of pressure placed on the water system in and around Ashford
- the level of pressure likely to be put on the water system by development in and around Ashford, measures being developed to manage this pressure and any realistic constraints placed by water issues on Ashford's growth
- the work carried out to address these issues to date, and the nature and prioritisation of current and planned actions.

2. Foreword

2.1 The Establishment and Work of this Select Committee

1. Water is an essential natural resource, fundamental to life. It sustains humans and human activity, wildlife and the environment. The 2003 Kent Environment Strategy identified one of its key objectives as ensuring that Kent is:-

'...a place where our rivers, lakes and underground water sustain diverse and healthy ecosystems while providing appropriate quality and quantity of water for the needs of thriving, healthy communities, who are protected from the risk of flooding'¹.

2. Nevertheless, concerns have been raised that Government Plans for development in the South East could add to an already high level of pressure on the region's natural water resources, its water and wastewater infrastructure, and its aquatic environment. The Strategic Planning Policy Overview Committee expressed a wish in May 2005 that a Select Committee should be established to examine the issue of water and wastewater particularly in the Ashford and upper Stour catchment area, with a view to extending this work through future committees to examine the wider South East context and identify similar challenges facing other areas in Kent intended to accommodate growth, as determined by the Office of the Deputy Prime Minister.

3. Ashford is one of the main growth areas identified for development in the South East. Of the 120,000 homes that it is planned will be built in the South East in the next twenty years, it is intended that 31,000 should be built in Ashford. Population estimates vary (a matter considered by the Select Committee in this report), but it is suggested that the number of people living in Ashford could increase by anything from 50% to 100%. The manner in which this potentially huge rise in water demand and wastewater output can be managed – and *if*, indeed, it *can* be managed – has been an area of some concern. Moreover, Ashford's situation on the River Stour, a river showing chalk stream qualities in certain stretches, and one of the few major rivers of salmonid quality in the South East region, makes the well-being of the aquatic environment a major issue in maintaining the balance between human demands and output, and environmental needs.

4. Investigations have already been taking place regarding the potential pressure placed on the water system by Ashford's growth, and sustainable means of

Author's Note: When evidence given by witnesses in hearings is directly quoted, or referred to, in the text of this report, the attribution in footnotes will give:

Name of witness [oral evidence, date of hearing] (e.g. John Smith [oral evidence, 1st January 2004])

Witnesses also gave evidence in writing, and some witnesses who gave evidence in person covered questions which the Committee did not have time to ask through supplementary information provided directly to the research officer. This will be attributed in footnotes giving:

Name of witness [written evidence / written information supplementing oral evidence / supplementary information] (e.g. Jane Jones [written evidence])

References to documents will be given as follows: document title in italics [author or producing body, date], page number.

¹ Kent Environment Strategy [Kent Partnership, 2003] p.29

managing this pressure. An Integrated Water Management Study is currently being carried out under the leadership of the Environment Agency, and this study will provide the basis for an Integrated Water Management Strategy for Ashford. Given the expertise and resources dedicated to the Study – including representation on the IWMS Steering Group from KCC's Strategic Planning Directorate – the Select Committee has not intended to duplicate the work of the IWMS by proposing a series of actions or an overall strategy for ensuring the sustainability of water requirements and wastewater output in Ashford. Rather, its Terms of Reference (attached as an appendix to this report) stated that it should '*consider and comment on issues regarding water and wastewater, particularly in Ashford and the Stour catchment upstream of Wye*'. These issues include:-

- the stability of the water system in and around Ashford, water resources available and the current level of pressure placed on the water system in and around Ashford
- the level of pressure likely to be put on the water system by development in and around Ashford, measures being developed to manage this pressure and any realistic constraints placed by water issues on Ashford's growth
- the work carried out to address these issues to date, and the nature and prioritisation of current and planned actions.

5. At this point it must be noted that the questions of **flooding** and of **climate change** were not specifically intended for detailed examination under the Committee's Terms of Reference. As such, they are not given 'devoted' chapters in the Report. However, their importance and relevance for the Committee's area of enquiry is not denied, and flooding and climate change will form strands of consideration running throughout this Report.

6. The Committee met five times for hearings between Tuesday 5th and Tuesday 26th July 2005, and also carried out an informative visit to the Bybrook wastewater treatment works on the morning of 26th July. It has considered information and evidence available up to the date of its final hearing. As such, the Committee has not been able to take into detailed consideration the most recent edition of the South East Plan, issued by SEERA on 29th July 2005, after a first round of public consultation. The Committee has, however, been able to take into account the first draft report by Black & Veatch, consultants to the Ashford Integrated Water Management Study, which was issued shortly before the Committee's final session.

7. In carrying out its work, the Committee has been assisted by the co-operation of many witnesses, and by the high quality of the oral and written evidence and supplementary information which many of them have supplied. The Committee is especially indebted to the officers of Kent County Council's Strategic Planning Directorate, including (but not limited to) Alan Turner, Leigh Herington, Peter Moore, Peter Davis and Bill Murphy. The Select Committee encountered some difficulties in its work; in particular, the constraints of a tight timetable and witnesses' availability meant that it was not always possible to make enquiries in person of representatives from such agencies and bodies as ODPM, or SEEDA. Particular difficulty was experienced in arranging for a representative of the Office of Water Services

(OFWAT) to provide evidence to the Committee, and it was not possible to arrange for representatives of the Committee to visit OFWAT in Birmingham. However, OFWAT has provided written evidence, which feeds into this report. It has been the Committee's approach in general to request written evidence where it has not been possible to have direct representation from key stakeholders.

8. One of the main questions that lies behind the Committee's work is, 'what does sustainability mean?' For sustainable development, the most famous definition is that offered by the World Commission on Environment and Development's report 'Our Common Future' (the 'Brundtland Report') in 1987, which is that **sustainable development meets the needs of the present generation without compromising the ability of future generations to meet their needs**. The Report also highlighted the three fundamental sustainability components of environmental protection, economic growth and social equity. These considerations are clearly reflected in the Kent Environment Strategy². In the context of development in Kent and the South East, and with reference to the challenges regarding water and wastewater posed by growth, it has been emphasised to the Committee that:-

*'...while the Ashford growth area provides a focus for some of the key issues in the debate it is vital that any solutions recommended for Ashford are genuinely sustainable and do not simply create problems elsewhere...Sustainable development should not be about 'weighing' the balance between competing social, economic and environmental objectives, but rather reconciling conflicts between them where they exist, recognising the inter-relationships and ensuring that progress is made on all fronts together'*³.

9. There has been much interest expressed within and without Kent County Council in the work of the Select Committee. It is hoped that the Committee's Final Report will make a useful contribution to the achievement of high quality of life for the people of Ashford and of the County, and the assured future of the unique environment for which both the Stour area and the county of Kent are justly famous.

² Kent Environment Strategy [Kent Partnership, 2003] p.2.

³ Peter Moore, Environment Strategy Manager (Kent County Council) [written evidence].

3. The Context for Ashford's Growth

To approach the question of water and wastewater in Ashford, it is necessary to understand the planning context for the area's growth and the roles of various stakeholders in the water industry. The first part of the Select Committee's report examines this context.

3.1 Planning for Growth

(1) Ashford offers an inviting prospect for growth. It is a market town of medieval origins, historically situated on one of the main roads between the Channel ports and London. The advent of the railway, then later development of the M20 motorway and most recently the arrival of the CTRL (Channel Tunnel Rail Link) have all contributed to the strategic importance of its location, which in turn has contributed to the growth of the population in the town and the surrounding borough. In fact, Ashford Borough already has the fastest-growing population in Kent, increasing from 79,000 to 105,000 people between 1971 and 2002 – around half of whom (approximately 57,000) live in Ashford town. As early as the 1950s, Ashford was indicated as an 'expanded town', to accommodate London overspill, and the **Kent Structure Plan 1996** highlighted the town as a growth area⁴.

(2) In 2001, **Regional Planning Guidance (RPG) 9** identified Ashford as one of several potential areas for major growth in the South East, with a view up to 2016. The Government called for a study to be carried out into the town's capacity for growth over a thirty-year period, and this was taken forward by the **Ashford's Future Strategic Partnership Delivery Board**, a partnership including Ashford Borough Council, English Partnerships, the Environment Agency, GOSE, the Housing Corporation, the Learning & Skills Council, SEERA, SEEDA and Kent County Council. Ashford's Future set the consultants Halcrow to consider three scenarios for the scale of growth that could be accommodated in Ashford⁵. The middle proposal, 'Scenario B', with a target of 31,000 additional homes and 28,000 new jobs by 2031, was taken forward by the Government in its **Sustainable Communities Plan** in February 2003.

(3) With a shorter-term view, paragraphs 12.63 to 12.65 of chapter 12 of RPG9, which referred specifically to Ashford's growth until 2016, were updated by GOSE's publication of a **revised RPG9 Chapter 12** in 2004. This document provides the spatial framework for the preparation of the Ashford Local Development Framework. It stated that the Ashford Growth Area should seek to deliver the 7,900 homes and 5,900 jobs between 2001-11, then 5,200 jobs and 4,400 jobs between 2011-16.

(4) Targets to 2021 for housing in the Ashford growth area and the wider Borough have been developed through the revision of the **Kent & Medway Structure Plan**. The targets for the growth area are in line with the Ashford's Future Study, and with RPG9. It is planned that 3,500 dwellings should be provided between 2001-2006;

⁴ *Ashford Borough Council- Achieving Sustainable Growth - Ashford's Future* [Audit Commission Inspection Report, May 2005], p.8

⁵ *Ashford's Future – a Handbook for Change* [Halcrow, 2002]

5,000 between 2006-2011; 5,500 between 2011-2016; and 6,000 between 2016-2021, adding up to a total of 20,000, of which 18,500 will be within the growth area, and the remaining 1,500 in the rest of Ashford Borough.

(5) The Planning and Compulsory Purchase Act 2004 brought into action a new planning system, under which RPG9 has become initially a **Regional Spatial Strategy** (or **RSS**) – for which a replacement, a RSS commonly known as the '**South East Plan**', is currently under development by SEERA. Under this system, the Kent & Medway Structure Plan will be saved for three years from adoption (so until at least 2008)⁶ – but as soon as the South East Plan is adopted, it will replace both RPG9 and the Structure Plan. Structure Plans will no longer be a part of the planning system. The South East Plan provides the regional context for development until 2031. Consultations for the Plan have set out three options for growth in the region, with three rates of development ranging from 25,000 to 32,000 homes per year, according to a pattern that is either a continuation of current distribution, or has a sharper focus. The Plan also considers a range of issues bearing on development and growth in the South East, including housing; the economy and tourism; transport and communications; management of natural resources; management of the countryside and the landscape; town centres; and social, cultural and health issues. Ashford Borough Council has argued that regardless of the regional spatial option finally put forward by the South East Plan, as far as the Ashford growth area is concerned, '*the agreed scale of development... must be an integral component of whichever option is pursued*'. The growth agenda will apply to Ashford town and its surrounding area, and '*will not be 'spread' around the Borough*'⁷.

(6) The **Integrated Regional Framework** (launched June 2004) was produced by SEERA, SEEDA and other stakeholders, and sets objectives for achieving sustainable development in the South East of England, including a sustainability appraisal guide and objectives for the prudent use of natural resources, including water. The **Regional Economic Strategy**, produced by SEEDA, also includes a priority to achieve sustainable management of water, waste and energy⁸.

(7) At the Borough level, under the Planning & Compulsory Purchase Act 2004, a **Local Development Framework** for Ashford will replace from 2007 the Borough's **Local Plan**. The LDF and the South East Plan RSS will provide '*the statutory development plan for Ashford Borough*'⁹. The LDF is a collection of statutory development plan documents and Supplementary Planning Documents, known collectively as **Local Development Documents**. Moreover, appendices to the LDF will include the **Greater Ashford Development Framework**, a masterplan for growth in the town and its immediate surroundings (which has been undergoing development and for which the proposed 'preferred option' has recently been published)¹⁰ and a forthcoming **Town Centre Development Framework**. The **Core Strategy** for the Local Development Framework, for which the 'Preferred Options' consultation document was produced in May 2005, will guide Local Development

⁶ Leigh Herington [oral evidence, 5th July 2005]

⁷ *Ashford Borough Council Local Development Framework – Core Strategy Preferred Options (LDF Core Strategy)* [Ashford Borough Council & Ashford's Future, May 2005], p.10

⁸ Simon Richardson (SEEDA) [written evidence].

⁹ *Ibid.*, p.9.

¹⁰ *Greater Ashford Development Framework (GADF)* [Urban Initiatives et al., May 2005]

Documents by setting out the ‘*overall vision*’ for the Borough¹¹. Every Development Plan Document will undergo a **Sustainability Appraisal**, covering the requirements of the EU Directive: Strategic Environmental Assessment Regulations 2004 – that is, a SA/SEA process - to assess its ability to deliver in these areas:-

- Social progress which meets the needs of everyone
- Effective protection of the environment
- Prudent use of natural resources
- Maintenance of high and stable levels of economic growth and employment¹².

(8) **Kent County Council** and **Ashford Borough Council** both have vital duties within the planning system in delivering these aims. All planning authorities ‘*have a duty to further sustainable development... not just in respect of growth areas or water*’¹³. Under the Planning Acts 1990 & 1991, KCC prepared with Medway Council the Kent & Medway Structure Plan, which will remain in force until the South East Plan is adopted. The County Council also has a principal role in advising SEERA on the RSS, and on sub-regional strategies in particular. Kent County Council produces the **Community Plan** for Kent, and is the principal authority leading on the **Waste and Minerals Development Frameworks** (which have a significant impact on the treatment and disposal of wastewater). District and Borough councils must consult KCC as a statutory consultee on Local Development Frameworks, and on major planning applications¹⁴. The District and Borough Councils are responsible for leading on the drawing up, delivery and monitoring of LDFs; planning applications for development in their areas; enforcing planning decisions, and monitoring the regulatory acceptability of developments in their areas. Moreover, both Kent County Council and Ashford Borough Council have strong and important roles to play in community leadership. Further elaboration on the respective roles of the County and Borough Council will follow in the main body of this report.

3.2 The Water Industry

(9) The water industry in England is subject to regulation by several government bodies and agencies. The Department for Environment, Food & Rural Affairs (**DEFRA**) is responsible for policy regarding water in England, including water supply and resources. It is also responsible for the regulatory systems for the water environment and the water industry. Regulation concerns issues such as the quality of drinking water; the quality of water in rivers, lakes and estuaries, and of coastal and marine waters; the treatment of sewage, and safety issues surrounding reservoirs¹⁵. Many of the quality standards are set at European level, and DEFRA interprets European Directives for application in the UK, providing guidance on the environmental and drinking water standards that need to be met by water supply and wastewater treatment companies – for example, the EU Water Framework Directive

¹¹ *LDF Core Strategy* p.4.

¹² p 4 – 5.

¹³ Leigh Herington [oral evidence, 5th July 2005]

¹⁴ *Ibid.*

¹⁵ For general guidance on DEFRA’s role, see the Department’s website at the following address:
<http://www.defra.gov.uk/environment/water/index.htm#Strategic>

(WFD), which came into force in December 2000, and which by 2015 will require all inland and coastal waters to reach 'good' status. This will have a significant impact on the management of water resources and wastewater output in England¹⁶.

(10) The **Environment Agency** (or **EA**) is a DEFRA executive non-departmental public body, which means that it is 'a body which has a role in the processes of national government but is not a government department or part of one...Executive NDPBs are established in statute and carry out administrative, regulatory and commercial functions, they employ their own staff and are allocated their own budgets'¹⁷. In short, 'the Environment Agency is responsible for local control and maintenance of water quality, water resources and flood defence in England and Wales, whereas DEFRA oversees water policy and sets the framework within which the Environment Agency operates'¹⁸. The Agency has the responsibility to analyse, inform and advise on environmental performance by the water industry – monitoring and enforcing existing environmental requirements, to maintain their delivery, and establishing new environmental requirements¹⁹. With particular relevance to the question of flooding, in some areas **Internal Drainage Boards (IDBs)** exercise operational and regulatory powers on watercourses. These powers are similar to the Agency's powers on main rivers. IDBs also have a duty towards conservation similar to that of the Agency. There is an Internal Drainage Board for the Stour²⁰.

(11) The **Drinking Water Inspectorate (DWI)** is the other water quality regulator, which is responsible for assessing the quality of drinking water in England and Wales through technical audits, taking enforcement action if standards are not being met, and appropriate action when water is unfit for human consumption. The Inspectorate is also responsible for investigating consumer complaints and incidents that affect or could affect drinking water quality²¹.

(12) The **Office of Water Services (OFWAT)** is a non-ministerial government department, led by a Director General of Water Services, whose duties are set out by section 2 of the Water Industry Act 1991 [WIA91]²². OFWAT is the economic regulator of the water and sewerage companies in England and Wales. The Water Act 1989 led to the privatisation of the water industry's previous 'water authorities', and gave rise to ten water companies, all owned by parent companies. These companies have a duty to provide a supply of clean water, and to treat and dispose of sewage²³. The Director General's main duties under WIA91 are to ensure that 'the functions of a water and sewerage company, as specified in WIA91, are properly carried out; and companies are able to finance their functions, in particular by

¹⁶ Nicola Simpson, Senior Analyst – Demand Management (OFWAT) [written evidence]. On the WFD, please see <http://www.defra.gov.uk/environment/water/wfd/index.htm>.

¹⁷ Please see <http://www.defra.gov.uk/corporate/delivery/agents/index.htm>.

¹⁸ Please visit <http://www.defra.gov.uk/environment/water/index.htm#Drinking>

¹⁹ For a useful overview of the structure and regulation of the water industry, please visit:

<http://www.environment-agency.gov.uk/subjects/waterquality/289209/289415/?version=1&lang=e>

²⁰ <http://www.environment-agency.gov.uk/subjects/flood/362926/364705/?version=1&lang=e>

²¹ For more on the role of the DWI, please see the Inspectorate's website, especially <http://www.dwi.gov.uk/consumer/faq/dwi2.htm>.

²² <http://www.ofwat.gov.uk/aprix/ofwat/publish.nsf/Content/infonote26>

²³ <http://www.environment-agency.gov.uk/subjects/waterquality/289209/289415/?version=1&lang=e>

securing a reasonable rate of return on their capital' ²⁴. More widely, it is OFWAT's role to:-

- protect the interests of consumers, wherever appropriate by promoting effective competition
- ensure water and sewerage companies carry out their functions properly, and
- set price limits that allow efficient companies to finance their activities²⁵.

(13) OFWAT reviews companies' business plans, sets price limits for the companies, to restrict the increases in charges that they can make from year to year, and monitor their performance against them, setting out the outputs they expect the companies to deliver. OFWAT consults with the other regulators regarding how to set these objectives²⁶. The setting of price limits is undertaken on a regular, five-yearly ('quinquennial') basis, through a Periodic Review. The prices set '*reflect assumptions about what water companies need to spend to meet their capital expenditure programmes and to finance their operations*'. OFWAT also '*makes assumptions about the cost of borrowing, capital charges, companies' operating costs and about future operating and capital efficiency savings*'²⁷. The most recent Periodic Review (PR04) has taken place this year, and will cover the Asset Management Plan (AMP) period 2005-06 to 2009-10. Companies can ask OFWAT to re-set prices in between Periodic Reviews through an Interim Determination; such a request may be made '*if specific changes in circumstance lead to a significant reduction in their revenue or an increase in their costs*'²⁸. Questions concerning the appropriateness of a five-year time frame for approving business plans and setting prices have been raised in the course of the Select Committee's enquiries, and these will be dealt with in further detail in the sections below dealing with water resources and supply, and with wastewater treatment and disposal.

(14) Also part of OFWAT is **WaterVoice**, the nine regional committees of which represent the interests of water and sewerage customers throughout England and Wales. Customers in the Ashford area are represented through its Southern committee. WaterVoice has limited powers, but it can make representations to OFWAT and to the Environment Agency about matters it believes may impact on customers²⁹. WaterVoice also meet water companies regularly to discuss current issues, have direct access to companies' senior managers, and can arrange for a company director to answer questions in a public meeting of one of the regional committees³⁰.

(15) At this point, it should be noted that the Water Act 2003 will have major implications for OFWAT and for WaterVoice. The role of the Director General of OFWAT will be replaced with a Water Services Regulation Authority from April 1st

²⁴ <http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/Content/infonote26>

²⁵ Nicola Simpson, Senior Analyst – Demand Management (OFWAT) [written evidence].

²⁶ Nicola Simpson, Senior Analyst – Demand Management (OFWAT) [written evidence].

²⁷ http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/Content/pr04faq_006

²⁸ For more information, please see OFWAT's FAQ sheet on Interim Determinations:

http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/Content/pr04faq_021

²⁹ Richard Sturt, Chairman (WaterVoice Southern) [written evidence].

³⁰ *About WaterVoice* – information leaflet provided by Ricard Sturt (WaterVoice, November 2003)

2006, and the Director General's duties vested in a board rather than an individual. WaterVoice will be replaced by a Consumer Council for Water from 1st October 2005, which will be independent from OFWAT³¹.

(16) In the Ashford growth area, there are two water companies operating, with separate responsibility for the provision of water of drinkable quality ('potable' water) and the treatment and disposal of wastewater. The potable water supplier is **Mid-Kent Water**, which delivers water to customers across much of Kent and part of Sussex. It does not, however, handle the treatment disposal of wastewater from Ashford. This is the role of **Southern Water Services**, which treats all Ashford's effluent at Bybrook wastewater treatment works (**WWTW**)³². Both companies have regular dialogue with one another and with neighbouring water companies such as **Folkestone & Dover Water Services**, and **South East Water**, both informally and through a variety of forums. Examples of these include the Water Resources in the South East Group, convened by the Environment Agency; the South East Water Resources Forum (sponsored by SEEDA); and the Kent Water Demand Management Group, which is convened under the auspices of Kent County Council³³.

The Ashford Integrated Water Management Study

(17) The main forum for addressing water issues specifically relating to Ashford's growth is through the work of the **Ashford Integrated Water Management Study (IWMS)**. The central aspiration of the Integrated Water Management Study is:-

*'That the future development and expansion of Ashford leads to the protection and enhancement of the water environment both locally and throughout the Stour catchment, for the benefit of people, wildlife, and cultural and landscape heritage.'*³⁴

(18) This Study has been led by the Environment Agency but its steering group includes representatives of key stakeholders in the development of Ashford and the management of its water system. The Study arose out of the 2002 Ashford's Future study, which identified water to be a possible constraint to Ashford's growth. ODPM and the Ashford's Future delivery board asked the Environment Agency to lead the Study³⁵. The Study was also given impetus by work on the Stour Catchment Abstraction Management Strategy (or CAMS) of 2003, which provides a framework for managing water resources in the area around the Stour³⁶. The total budget for

³¹ Nicola Simpson (OFWAT); Richard Sturt (WaterVoice Southern) [both written evidence]

³² Southern Water also supply potable water to other areas of Kent, however: see their coverage map at <http://www.southernwater.co.uk/corporate/aboutUs/areaOfOperation.asp>

³³ Trevor Bishop, Regulatory Manager (Mid-Kent Water); Gavin McHale, Head of Operations (FDWS) [both oral evidence, 26th July 2005]. The Kent Water Demand Management Group was set up by Alan Turner, KCC's Principal Officer – Regeneration & Projects [Alan Turner, supplementary information provided in an email, 3rd August 2005].

³⁴ *Ashford Water Update (Ashford Integrated Water Management Study Newsletter)* no.1 [January 2004], p.1.

³⁵ Sean Furey, Project Manager for the IWMS (Environment Agency) [oral evidence, 5th July 2005]

³⁶ *Stour CAMS Update* [Environment Agency, January 2005]

the study was £400,000³⁷. As of December 2003 the Environment Agency appointed the consultants Black & Veatch to investigate preferred options for managing the water system around Ashford and the pressures that growth may put on this system. Black & Veatch have recently made a draft final report proposing preferred options for consideration. The options finally selected will feed into the IWMS Final Report, and this is intended to form the basis of an Integrated Water Management Strategy for Ashford – integrated, since it will need to encompass:-

- water resource management
- wastewater management
- flood risk management
- the impact of these three spheres of human activity on the water environment and biodiversity management
- the interrelation of all these issues³⁸.

(19) Concerns have, however, been expressed to the Select Committee that the technical work being carried out by Black & Veatch has not been fully 'integrated' in its approach³⁹. In particular, the concern that the benefits of integrated water system management should be felt in other aspects of Ashford's development reflects Peter Moore, KCC's Environment Strategy Manager submission to the Committee, that it is important to recognise the inter-relationships between social, economic and environmental objectives⁴⁰. One of the key aims of the *Kent Environment Strategy* is that environmental decision-making should be part of a more equitable approach along with economic and social decision-making⁴¹. The wider scope of the *Environment Strategy* could offer a useful perspective on actions and targets coming out of the IWMS, and it has been suggested that when considering in future how to take forward actions identified through the IWMS, Kent County Council should continue to strongly pursue the objectives of the *Kent Environment Strategy*, and find ways to link actions and targets from the IWMS to the *Environment Strategy*, where possible⁴².

Recommendation 1

The Select Committee would endorse the view, expressed by officers of Kent County Council, that the solutions proposed for management of issues regarding the water system in the Ashford growth area must ensure mutual benefit and support, as far as is possible, with the economic and social dimensions of growth.

The Committee also endorses the view that environmental considerations must be given equal weight in decision-making with social and economic considerations to achieve truly sustainable growth.

³⁷ Mel Lea (ODPM) [written evidence]

³⁸ See *Ashford's Future: Integrated Water Management Study Phase 3: Final Draft Report* [Black & Veatch Consulting, July 2005], available from the Environment Agency.

³⁹ Alan Turner (KCC) [written evidence supplementing oral evidence, 5th July 2005]

⁴⁰ Peter Moore (KCC) [written evidence]

⁴¹ *Kent Environment Strategy* (Kent Partnership, 2003) p.1.

⁴² Alan Turner (KCC) [written evidence supplementing oral evidence, 5th July 2005]

The Committee recommends that when considering in future how to take forward actions identified through the IWMS, Kent County Council should continue to pursue strongly the objectives of the *Kent Environment Strategy*. The Council should consider how appropriate actions and targets from the IWMS could be linked to the *Environment Strategy*.

(20) In the course of its enquiries, the Committee came to feel that the multiplicity of stakeholders – many with narrow areas of responsibility - involved in the sourcing and delivery of potable water, the treatment and disposal of wastewater, and the management of the aquatic environment may not always be conducive to ‘joined-up’ management of the water system⁴³. The Select Committee considers, however, that the Integrated Water Management Study has been a useful initiative in bringing together the many stakeholders in the water system and the water industry around Ashford, to look at local water challenges and propose solutions suitable for the local context, and this view is endorsed by witnesses. Despite the criticisms offered above, Alan Turner stated that *‘the IWMS has been very successful at providing a single focus for water issues. This has given water and the environment a higher status in the overall planning process than would have been the case’*⁴⁴. The benefits of the IWMS approach to water companies were shown by John Spence, Environment & Wastewater Manager for Southern Water, who stated, when asked about the phasing of infrastructure development to support growth, that to plan this phasing *‘[Southern Water] talks constantly with the Ashford Integrated Water Management Study Board’*⁴⁵. The Select Committee considers that the approach of examining local water challenges and developing solutions through a group of key water industry and central and local government stakeholders is one which it would be worth developing further in future. This is not to add another ‘tier’ to oversee the water industry in a particular area but rather to ensure that as broad a range of expertise and viewpoints as possible is represented in research and in the formulation of plans for water system management, and above all that a wide range of stakeholders own this process and fully sign up to taking solutions forward.

(21) The **Directive of the European Parliament and of the Council 2000/60/EC**, commonly referred to as the **Water Framework Directive (WFD)**, must be in place in member states by 2009, be in force by 2012, and outcomes must be delivered by 2015⁴⁶. The WFD uses **river basin districts (RBDs)** – a catchment or group of catchments - as its unit for management through **River Basin Management Plans (RBMPs)**⁴⁷. Its requirement that all surface waters – rivers, lakes, streams, estuarine and coastal waters – meet ‘good ecological status’ is discussed in more detail below, but at this point in the report it is worth noting that the WFD intends that administration of river basins should be sub-divided into districts to allow meaningful engagement by the public at a local level. If these ‘districts’ were to be coterminous

⁴³ Alan Turner (KCC) [written evidence supplementing oral evidence, 5th July 2005]

⁴⁴ Alan Turner (KCC) [written evidence supplementing oral evidence, 5th July 2005]

⁴⁵ John Spence (Southern Water) [oral evidence 12th July 2005].

⁴⁶ For a useful introduction to the Directive, see the EA’s web page at http://www.environment-agency.gov.uk/aboutus/512398/289428/655695/?version=1&lang=_e see also *Steer RSPB Policy Briefing* (RSPB, 17th June 2005), p.4.

⁴⁷ *Ibid.*, p.3.

with the catchments in which the Environment Agency currently manages water resource planning, then there may be a role for a **Stour Catchment Group** or **Stour River Group** to take forward the work of the protection and enhancement of surface waters, determined by UK application of the WFD, and apply it more widely to integrated management of the water system. Sub-groups could focus on areas of particular concern within a catchment⁴⁸.

Recommendation 2

The Select Committee would support the establishment of a permanent group for the management, protection and enhancement of the water system in the Stour Catchment, made up of key stakeholders from central government (including planners and regulatory authorities), local government (county and district levels), water companies, and technical and environmental experts. Its remit should include land management issues relating to water and wastewater in the Stour Catchment.

KCC should drive the establishment of this group, ensuring that key stakeholders are involved, and that its work dovetails with that of Ashford's Future and the IWMS.

The Group should engage actively with local people regarding its work, fostering public ownership and participation in measures to protect and enhance the aquatic environment.

⁴⁸ The Select Committee is indebted to Alan Turner for his guidance in formulation of this recommendation.

4. Ashford's Aquatic Environment

When considering water and wastewater in Ashford, it is vital to have an understanding of the town's environment. Not only Ashford's growing population, but also its surrounding environment has water needs. A major part of this Select Committee's work has been to examine the relationship between the needs of humans and those of the environment.

4.1 Ashford and the Stour

(1) Kent holds part or all of five major river catchments: the Thames, Darent, Medway (including the Beult, Teise, Eden, Len and Sherway), the Stour (including the Little Stour and East Stour), and Rother⁴⁹. Ashford is located in the catchment of the Stour, that is, within the area in which precipitation and groundwater will collect and contribute to the flow of the River Stour⁵⁰. The town sits in the Gault Valley, between parallel ridges of North Downs Chalk and Lower Greensand⁵¹. The Great Stour rises on the Greensand Ridge at Lenham, and is fed by several tributaries, most notably the East Stour, before it reaches Ashford. These 'headwaters' are located on sand and clay, and tend to have flows which increase rapidly after periods of high rainfall and high soil moisture, and which drop quickly in drier periods. Because of this 'flashy' character, Ashford is protected by flood barriers which have been constructed at Aldington and Hothfield⁵². The town's treated effluent is currently discharged to the Stour from the wastewater works at Bybrook.

(2) North of Ashford, the Great Stour meets the North Downs Chalk, and between Ashford and Canterbury, the river is fed by a series of springs (or 'aquifers') rising through the chalk. The arising groundwater is cold, clear, and very low in phosphates⁵³. The level and quality of these groundwater contributions are crucial to the ecology of the river, for it is mainly due to this groundwater contribution that, downstream of Ashford between Wye and Canterbury, the Great Stour has the characteristics of a chalk river. Chalk rivers' low phosphate content fosters specialist plant life (macrophytes) such as river water-crowfoot *ranunculus penicillatus*; they also support characteristic invertebrates, such as the white-clawed crayfish, and often offer excellent fly-fishing opportunities⁵⁴. Throughout its length, the Great Stour is a quality fishery for both coarse (cyprinid) and game (salmonid) fish, supporting bream, brown trout and sea trout, and even a few salmon in the River Great Stour above Ashford⁵⁵. There are also signs that otters live along the Stour⁵⁶. Chalk rivers are, however, vulnerable to pressure from human activities, such as abstraction from their contributing aquifers; discharges of effluent; altering the shape of the channel

⁴⁹ *Ashford's Expansion: potential effects on the River Stour*, p.1 Richard Moyse, Senior Conservation Officer (Kent Wildfire Trust) [supplementary information]

⁵⁰ *The Stour Catchment Abstraction Management Strategy* [Environment Agency, May 2003] p.37 Henceforward footnoted as *Stour CAMS*.

⁵¹ *Ashford Water Update* no.2 [February 2004], p.2.

⁵² *Ashford's Expansion* [Richard Moyse, supplementary information], p.1.

⁵³ *Ibidem*

⁵⁴ *Water & Development in Kent – a wildlife perspective* [Richard Moyse, supplementary information], p.1.

⁵⁵ *Stour CAMS*, p.4.

⁵⁶ Michael Ciccone, Vice-Chairman, Kingsnorth PC [written evidence]; Richard Moyse (Kent Wildlife Trust) [oral evidence, 8th July 2005].

for flood alleviation; and intensifying agriculture in the river's area⁵⁷. Such is the threat in the UK to chalk rivers that they are considered a priority habitat under the UK Biodiversity Action Plan (BAP)⁵⁸. The Rivers Little Stour and Great Stour are both recognised as priority habitats for the BAP, and it is the Environment Agency which is primarily responsible for delivering the obligations of this Plan⁵⁹.

(3) After running through Canterbury, the Great Stour is fed by the Little Stour and Nailbourne, the upper reaches of which only run after long periods of wet weather – that is, several successive wet winters - and the Wingham River. The Great Stour also takes water from the marshes around the Wantsum. In this stretch it runs over relatively young rock beds (e.g. brickearths and Thanet Sands) and more recent alluvial deposits, slowing down. It becomes tidal at Fordwich, and enters the sea near Sandwich⁶⁰. Most of the water-related conservation designations within the Stour Catchment are concentrated near these lower reaches of the Great Stour. However, some are located closer to Ashford, for example Kent's last remaining bog at Hothfield Common, a Site of Special Scientific Interest (**SSSI**). The Stour Catchment is also part of the Kent Downs Area of Outstanding National Beauty (**AONB**), and the whole area has, in the Environment Agency's words, 'a *high amenity value*', having maintained much of its rural quality and offering many footpaths and bridleways⁶¹. When asked, for example, about the benefits brought to the Ashford area by the attraction of fishing on the Stour, the Secretary of the Stour Fishery Association, Peter Bracher responded that there was attraction in the river and its valley, not just in the fishing it offered⁶².

4.2 The current state of the Stour

(1) Since the Stour is such an important natural feature and amenity resource, the Select Committee considered one of its primary tasks to be understanding, as a baseline, the current state of the Stour's water quality, in terms of its chemical and biological quality, its flow levels and its chalk stream quality. The Environment Agency is responsible for monitoring the chemical and biological quality of water in rivers⁶³, but the Committee addressed questions in this respect to several witnesses. Kent County Council's representative on the Ashford IWMS steering group, Alan Turner, stated that there are concerns regarding the quality of waterbodies throughout East Kent, as well as the rest of Eastern England, and that this is a problem not wholly understood⁶⁴. When examining the current state of the Stour, there are several factors that must be considered.

⁵⁷ Ibid., p.3.

⁵⁸ *Water & Development in Kent* [Richard Moyse, supplementary information], p.1.

⁵⁹ *Stour CAMS*, p.3.

⁶⁰ Richard Moyse, *Ashford's Expansion* [supplementary information], p.1, and oral evidence, 8th July 2005

⁶¹ *Stour CAMS*, p.8.

⁶² Peter Bracher, Secretary (Stour Fishery Association) [oral evidence, 12th July 2005].

⁶³ DEFRA is ultimately responsible for ensuring that the Stour meets all relevant Directives: Richard Dean, Water Quality Team Leader & Nigel Hepworth, Regional Resources Planning Officer (Environment Agency) [written submission supplementing oral evidence, 26th July 2005].

⁶⁴ Alan Turner, Principal Officer Regeneration & Projects (Kent County Council) [oral evidence, 5th July 2005].

Water Quality:-

- (2) - The chemical quality of the river: The Committee was told by the Environment Agency that the River Quality Objective (RQO) of River Ecosystem (RE) Class 3 down to Wye is consistently met, but that this 'is not a particularly onerous objective'⁶⁵. When asked if the Environment Agency aimed to raise rivers to RE Grade 1, Sean Furey, Project Manager of the Ashford IWMS, responded that 'the Environment Agency has a legal duty to stop further deterioration, and that there was no mandate to raise quality'⁶⁶. Members of the Select Committee expressed concern at this statutory position. Rather than giving statutory weight to their aspiration for improvement, this position only mandates the Agency to maintain what EA representatives called a 'backstop' position⁶⁷.
- The biological quality of the river: Ashford's impact in this respect is most clearly seen at the measurements taken at Longport Bridge, downstream of Bybrook WWTW. Biological quality has recently improved, after a period of deterioration in the late 1990s to General Quality Assessment Grade D ('Fair') to Grade B ('Good') in 2002.
- An excess of *plant nutrients* has been a problem for the Stour downstream of Ashford to Canterbury, particularly phosphorus, and consequentially it was designated a Sensitive Area (Eutrophic) in 1994, with the Environment Agency requesting DEFRA that this designation should extend further downstream, to Pluck's Gutter⁶⁸. When considering Ashford's contribution to this, it is worth noting that Bybrook currently has one of the tightest phosphorus standards in the country to meet, set by the Environment Agency, and that the installation of stripping at Bybrook is reported to have achieved some improvement in this respect⁶⁹.
- The designation *nitrate vulnerable zone* has also been applied to much of the Stour Catchment, 'reflecting elevated nitrate concentrations in the river'⁷⁰.
- (3) Pollutants such as nitrates and phosphates do not only reach the river through wastewater treatment works – agricultural run-off has been cited as a contributing factor to this type of pollution, although estimates as to the level of this contribution vary. Urban run-off is also a significant source of pollution, and one which may give special cause for concern with an increase in the land area given up to development.

⁶⁵ Richard Dean & Nigel Hepworth (Environment Agency) [written submission supplementing oral evidence, 26th July 2005]

⁶⁶ Sean Furey (Environment Agency) [oral evidence, 5th July 2005]

⁶⁷ Richard Dean & Nigel Hepworth [oral evidence, 26th July 2005]

⁶⁸ Richard Dean & Nigel Hepworth [oral evidence, 26th July 2005]

⁶⁹ John Spence, Wastewater & Environment Manager (Southern Water) [supplementary information]; Richard Moyse (Kent Wildlife Trust) [written information supplementing oral evidence, 8th July 2005].

⁷⁰ Richard Dean & Nigel Hepworth (Environment Agency) [written submission supplementing oral evidence, 26th July 2005]

Both these sources of pollution are dealt with in more detail in the section of this report specifically dedicated to wastewater.

(4) The Committee heard that *'there are subtleties in river water quality which are not picked up by the EA's monitoring systems'*⁷¹. For this reason, biological assessments are especially important since *'they integrate the effects of all pollutants over time, even if they cannot distinguish the impact of specific pollutants'*. Monitoring resources are targeted at the *'greatest perceived risks'*, such as organic enrichment, which causes a depletion in oxygen levels, ammonia toxicity and nutrient enrichment, and *'exotics'* such as pharmaceutical product traces and endocrine disruptors are not routinely monitored. Nevertheless, *'these could affect the river in ways we don't know, don't understand and we... don't measure'*⁷².

(5) Even in the case of pollutants which are known to have an adverse effect on the river, the Agency is reliant on making bids to fund remedial schemes through the Periodic Review process. For PR04 (2005-10), the Agency proposed some *'non-statutory improvements'* for the Stour, including more extensive phosphorus removal in the upper Stour Catchment, particularly at Lenham Sewage Treatment Works⁷³. These schemes were unsuccessful in attracting funding, partly because they were examined using a methodology which measures cost against benefit to the environment. Representatives of the Agency told the Committee that this is *'a fairly crude methodology, and undoubtedly it needs to be improved for the future... it is about how many pence people are willing to pay for, say, a change in the class of the river... and also the methodology was based on a fairly small number of research projects in the UK and abroad... a lot more research could probably be done to try and check some of these figures that we use'*. As a result, throughout the next five years of Ashford's development the Environment Agency can only maintain the backstop *'no deterioration'* policy, rather than working towards its aspiration to improve the river's quality⁷⁴. Members of the Committee felt that this reinforced their concerns about the statutory mandate given to the Environment Agency.

(6) Meanwhile impacts partly attributable to pollution levels, especially nutrient enrichment, are being reported in the Stour, especially the chalk stretches of the River Great Stour, and these observations as well as the Environment Agency's classification results have been considered by the Committee. Changes to the flora and fauna have been reported by several witnesses, including an increase in the growth of blanketweed in the Stour, and changes to the river's insect life, including the river flies on which trout and other fish feed; it has also been noted that the population of white-clawed crayfish, characteristic of chalk rivers, is in decline and may even no longer be present in stretches of the Stour⁷⁵. Such alterations in the local ecology may also be due to siltation on the gravel beds, reported particularly from Wye to Pluck's Gutter, which could be caused by **low flows**⁷⁶.

⁷¹ Richard Moyse, *ibid*.

⁷² Richard Dean & Nigel Hepworth (Environment Agency) [written submission supplementing oral evidence, 26th July 2005]

⁷³ *Ibid*; Alan Turner (KCC) [supplementary information].

⁷⁴ Richard Dean & Nigel Hepworth [oral evidence, 26th July 2005]

⁷⁵ Godmersham P.C. [written evidence]; Peter Bracher & Anthony Falcon (Stour Fishery Association) [oral evidence, 12th July 2005]; Richard Moyse (Kent Wildlife Trust) [written submission supplementing oral evidence, 8th July 2005].

⁷⁶ Richard Moyse, *ibid*.

Flow: -

(7) As well as contributing to the problem of silt deposits by slower-flowing lower water levels, a decline in flow would only accentuate any changes caused by pollution levels in the Stour, by creating a relative decrease in the amount of river water compared to the amount of effluent and run-off. In 2004, the *State of the Environment* report referred to low river flows in some rivers in the South East⁷⁷, and the Committee heard concerns that this may be a problem for the Stour. However, this is not certain, and indeed, Black & Veatch have suggested to the Ashford IWMS Steering Group that flow has changed little over the last thirty years, although one witness reported that *'no statistical analysis was presented'* in this respect⁷⁸. If flows have declined this could be due to a reduction in rainfall over recent years, which may be an impact of climate change⁷⁹, but it is also possible that a reduction in peak winter flows – possibly due to the use of hydraulic brakes at Aldington and Hothfield – could contribute to this effect, capping the river's flow rate and preventing high winter flows from 'scouring' the river⁸⁰. It was reported to the Committee by the Environment Agency, moreover, that most of the Stour Catchment is already over-licensed or over-abstracted⁸¹; it was also reported by the Kent Wildlife Trust that *'it is not clear whether abstraction from the chalk aquifer in the Stour Gap is contributing to perceived changes in the chalk river stretch of the Stour'*, by reducing the balance of chalk groundwater in the river⁸². It is worth noting in this respect that the river's measured chemical and biological quality, after the contribution from Ashford WWTW, improves gradually downstream of Wye, where there is an increase in the water contributed by the underlying chalk aquifer⁸³; moreover, for the Great Stour to retain its chalk stream characteristics, the river's water must not be mixed with more than 50% effluent, and this level certainly should not rise above 70%⁸⁴.

Temperature and pH:-

(8) Concerns were also expressed to the Committee about the possible impact of the pH and temperature of treated effluent when discharged into the Stour. Effluent has a lower pH and is warmer than the river water, especially the cold chalkwater contributed by aquifers downstream of Ashford. Temperature of the river is known to be particularly important, since a raised temperature – even a few degrees above normal – may have a significant effect on dissolved oxygen levels, to which salmonid fish are especially sensitive. However, this matter *'is not fully understood and not easy to monitor'*⁸⁵.

⁷⁷ Observations of the Test, Medway and Thames, *State of the Environment* [Environment Agency, 2004], pp.60 – 61; cited in member question to Sean Furey, hearing 5th July 2005. Mr Furey's response indicated that low oxygen levels caused by a number of factors (including a reduction of the amount of natural flow in the flow: effluent ratio) were causing concern in rivers in the South East.

⁷⁸ Richard Moyse (Kent Wildlife Trust) [written information supplementing oral evidence, 8th July 2005].

⁷⁹ *State of the Environment* [Environment Agency, 2004], p.59; *Rising to the Challenge – Impacts of Climate Change in the South East in the 21st Century* (scoping study linked to the UK Climate Impacts Programme, November 1999), p.9.

⁸⁰ Richard Moyse (Kent Wildlife Trust) [written information supplementing oral evidence, 8th July 2005].

⁸¹ Sean Furey [oral evidence, 5th July 2005]; Richard Dean & Nigel Hepworth [oral evidence, 26th July 2005]

⁸² Richard Moyse (Kent Wildlife Trust) [written information supplementing oral evidence, 8th July 2005].

⁸³ Alan Turner (KCC) [oral evidence 5th July 2005]

⁸⁴ Peter Bracher & Anthony Falcon (Stour Fishery Association) [oral evidence 12th July 2005]

⁸⁵ Alan Turner (KCC) [oral evidence 5th July 2005, and supplementary information]

4.3 The impact of the Water Framework Directive

(1) As stated in the previous section of this report, the EU **Water Framework Directive (WFD)** must be in place in member states by 2009, be in force by 2012, and outcomes must be delivered by 2015⁸⁶. In its proposals for **River Basin Management Plans (RBMPs)**⁸⁷, this groundbreaking piece of legislation addresses not only water's chemical quality but also its ecology, demanding that *all surface water bodies* – lakes, streams, rivers, estuaries and coastal waters – must achieve **Good Ecological Status**, in terms of **quality, quantity and physical habitat**⁸⁸. While the Directive defines Good Ecological Status as '*a slight deviation from the pristine state for each type of water body*'⁸⁹, this needs to be interpreted in detail for the UK's RBDs by DEFRA, and representatives of the Environment Agency told the Committee at its final hearing that there was some uncertainty regarding its technical implications⁹⁰. Nevertheless, the WFD clearly sets high aspirations for the future state of surface waters within the EU, and the Select Committee believes that these aspirations should be borne in mind now. The Committee is of the opinion that DEFRA's interpretation of the Directive is now urgently required to enable informed decision-making and planning, especially regarding water abstraction and supply in the future (as seen in the next section of this report).

Recommendation 3

Many of the Committee's recommendations will be more or less relevant to the welfare of the River Stour. Given that the growth in Ashford's population will lead to an increase in the output of wastewater, and that this growth sits within a context of higher temperatures and reductions in summer rainfall in the South East⁹¹, it must be stated here that the Select Committee believes that **the Stour's chemical and biological condition, its temperature, flow levels and its chalk river characteristics downstream, and the condition of its environment must be given a priority consideration when carrying out selection of the options for managing water resources and the water supply and wastewater system in and around Ashford.**

The Select Committee also acknowledges the Environment Agency view that '*what is good quality for one habitat is not necessarily good quality for another*'⁹², and therefore urges that **attention should be focused in particular on the quality of the chalk river stretches of the Great Stour.** To facilitate this, the Select Committee recommends that as a matter of urgency **an appropriate system of monitoring should be put in place to identify critical changes in the chalk river characteristics of the Stour, and to monitor the Stour's flow levels and temperature, not just the river's chemical and biological quality. Research should be undertaken to fill gaps in the present understanding of the impact of**

⁸⁶ For a useful introduction to the Directive, see the EA's web page at http://www.environment-agency.gov.uk/aboutus/512398/289428/655695/?version=1&lang=_e see also *Steer RSPB Policy Briefing* [RSPB, 17th June 2005], p.4.

⁸⁷ *Ibid.*, p.3

⁸⁸ *Ibid.*, p.2

⁸⁹ *Ibidem*

⁹⁰ Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence 26th July 2005]

⁹¹ Phil Sivell (UK Climate Impacts Programme) [oral evidence 13th July 2005].

⁹² Sean Furey (Environment Agency) [oral evidence 5th July 2005]

variations in flow levels and temperature on rivers with chalk stream characteristics. The Environment Agency's resources should be increased as appropriate to enable this research.

Although the Environment Agency's statutory 'backstop' position is to *maintain* river chemical and biological quality, having noted existing concerns about the state of the Stour, especially in its chalk water stretches, the Select Committee would urge that **the firm aim of the Environment Agency and all key stakeholders in the Stour Catchment should be an overall improvement in the chemical, biological and physical quality and the flow levels of the Stour, and in the condition of the Stour's environment.** The Select Committee recommends that **such an aspiration should be at the heart of the Stour Catchment Group recommended by this report.** Moreover, the Committee would urge that **the Environment Agency should be given the statutory mandate and the resources needed to work for the improvement of the quality of surface waters throughout England and Wales.** In parallel with this, the Committee recommends that **the technical implications of the Water Framework Directive should be clarified as a matter of urgency, so that it may be given detailed consideration in forward planning for water supply and wastewater treatment and disposal.**

5. Water Resources and the Supply-Demand Balance

The previous chapter looked at the water needs of Ashford's environment. This chapter looks at the current situation regarding water resources available to support Ashford's development, and what is being done – and could be done – to make prudent use of these resources.

5.1 The Sustainability of Current Levels of Abstraction

(1) The Environment Agency has drawn up **Catchment Abstraction Management Strategies**, commonly abbreviated to **CAMS**, for the purpose of managing water resources at a local level. Although they do consider water quality, *'the strategy is predominantly about the amount of water available in the catchment'*⁹³. These strategies take two years to produce, including a consultation process, and are subject to review every six years. The **Stour CAMS** was the first to be completed in the Kent area, in May 2003, and it considers the management of water resources in an area including the River Great Stour and the East Stour, Little Stour and Nailbourne and the Wingham River (all of which feed into the Great Stour), as well as the River Dour⁹⁴. The CAMS' purpose is *'to assess how much water is available and to identify areas for future investigation'*, as well as setting out a strategy for managing and licensing levels of abstraction of surface and groundwater from the environment for the next six years⁹⁵.

(2) Considering the importance of groundwater to the environment, as well as the population, the Select Committee was keen to establish the current level and sustainability of surface and groundwater dependency and abstraction in the Stour Catchment. Having put this question to representatives of the Environment Agency, the Committee was told that overall, Kent is heavily dependent on groundwater abstractions for public water supply and private water uses⁹⁶. Across the Stour Catchment, public water supply is almost 100% dependent on groundwater abstraction, and at present the Ashford area is totally dependent on groundwater for its supply, drawing this water from six boreholes in the North Downs⁹⁷. There is some uncertainty about actual levels of non-public supply water abstraction hence there is a proposal for further research into this subject made by Black & Veatch in their draft final report to the IWMS Steering group⁹⁸. For the purposes of assessing groundwater resource availability status, the Environment Agency's *Stour CAMS* divided the catchment area into **groundwater management units (GWMUs)**, and examined the balance between outputs from licensed abstraction of groundwater in the unit and recharge to the groundwater. The results set out in the CAMS are that the majority of these units are either **over-licensed** or **over-abtracted**. Over-

⁹³ Ibid., p.1.

⁹⁴ The Dour runs through Dover, and does not directly link to the Stour. However, it is not fully understood how these rivers inter-relate, and the Environment Agency considers the Dour as part of the same catchment for water resource management purposes: see the *Stour CAMS*, especially p.3; also Gavin McHale, Head of Operations (FDWS) [oral evidence, 26th July 2005].

⁹⁵ *Stour CAMS*, p.3.

⁹⁶ Nigel Hepworth, Regional Resource Planning Officer & Richard Dean, Water Quality Team Leader (Environment Agency) [written submission and oral evidence, 26th July 2005]

⁹⁷ Nigel Hepworth & Richard Dean (Environment Agency) [written submission and oral evidence, 26th July 2005]; Alan Turner (KCC) [supplementary information]

⁹⁸ *Ashford Water Update* no.14 [July 2005], p.8.

licensed means that current actual abstraction levels are resulting in no water available at low flows – and if existing licenses for abstraction were used to the full, they would have an unacceptable environmental impact at low flows. *Over-abstracted* means that existing actual (rather than potential) abstraction is causing unacceptable environmental impact at low flows⁹⁹.

(3) This lack of surplus groundwater availability must be put in the context of the fact that the South East is a relatively dry region, with a high population density – with all the implications that has both for level of demand and for recharge of aquifers. The Select Committee heard from Phil Sivell (UK Climate Impacts Programme) that scientific evidence [suggests] that the impact of climate change [is] greater in the South East than elsewhere in the UK, with the highest range of temperatures and the greatest reduction in summer rainfall. The question is no longer *whether* the climate is changing, but *how much* is the climate changing. Even when current figures for rainfall and the population are put alongside one another, Mr Sivell told the Committee, *‘water available per head of population [is] comparable to Lebanon or Jordan, and less than Egypt or Iran’*¹⁰⁰.

(4) The implications of these factors for Ashford and for the River Stour were considered by the Committee to be a matter for very serious consideration. The addition of 31,000 new homes to Ashford by 2031 has the potential to place unacceptable demands on the available water supply, unless measures are taken to reduce the level of that demand, and / or to develop resources to satisfy it. The Committee heard from Richard Moyse, Senior Conservation Officer of Kent Wildlife Trust, that *‘any additional abstraction would undoubtedly be damaging to the river and its ecology’*¹⁰¹. In 2003, the *Stour CAMS* reinforced the Environment Agency’s existing abstraction licensing policy, including a presumption against further summer consumptive abstraction from surface or groundwaters; a presumption against licensing further direct abstractions from major aquifers; setting time limits to licences, and revoking unused licenses¹⁰². Moreover, under the UK National Environmental Programme’s ‘sustainability reductions’, Mid-Kent Water will need to reduce its groundwater abstractions in the North Downs supply area by 12.5%, that is four million litres per day¹⁰³. The *Stour CAMS* states categorically that *‘...there are no options to improve water availability around Ashford, even though this is known to be a growth area. Local options of sufficient scale have proved difficult to identify and it is thought that increased water supply to Ashford will depend on strategic level supply-demand management options’*¹⁰⁴.

(5) As will be seen later in this section of the report, the **‘twin-track’ approach**, increasing supply through strategic resource developments, while managing demand by various means, is one that has been highlighted to the Committee by many

⁹⁹ For more details regarding measurement methodology and results, please see the *Stour CAMS*, Section 4, pp.13 – 19.

¹⁰⁰ Phil Sivell (UK Climate Impacts Programme) [oral evidence, 13th July 2005]. According to figures provided by Mr Sivell, water availability in m³/capita/year is 859m³ in Egypt, and 662m³ in South East England.

¹⁰¹ Richard Moyse [written submission supplementing oral evidence, 8th July 2005].

¹⁰² *Stour CAMS*, pp.20 – 23.

¹⁰³ *Bridging the Gap – a Water Resources Strategy for Kent* [Mid-Kent Water, 2004], p.2.

¹⁰⁴ *Stour CAMS*, p.28.

witnesses as being the most desirable method of managing the supply-demand balance – but this opinion was not shared by all witnesses heard on the subject.

5.2 Ashford's population - How many people will need to be supplied with water?

(1) This question is worthy of attention, since considerable discrepancies exist between water industry population projections and those of local authority planners. When asked about the data used by the IWMS to predict the level of demand, the IWMS Project Manager, Sean Furey, responded that the Study had consulted three projections; one used by the Kent & Medway Structure Plan, one made in the Greater Ashford Development Framework, and one projection made by Mid-Kent Water. Discrepancies between these figures arose not because of different tallies for the houses to be built, but rather because of differing projections for occupancy rates. For example, Mid-Kent Water estimated an occupancy rate of 2.5 people per household, leading them to project a population rising to approximately 200,000 people in Ashford by 2031, while the Structure Plan used a figure of 2.4 falling to 2.1 in later years, leading to a projected population of just under 160,000 people by the same date. The GADF figures took Ashford to 180,000 people by 2031¹⁰⁵. Mr Furey added that the Mid-Kent Water figures had been selected for use in the IWMS analysis, *'because they probably represented the worst case scenario'*¹⁰⁶.

Recommendation 4

To support work seeking to achieve and maintain a balance between population growth, water resource management and infrastructure development, the Select Committee recommends that the *actual* growth of the population and number of households in the Ashford urban area should be closely and regularly monitored. This information should be shared between local authority planners, water industry regulators and water companies, to provide a common baseline for their forward plans.

5.3 Projections for the Level of Demand from Ashford's population

(1) At present, each person in Ashford consumes an average of 175 litres per day, with consumption in metered properties running below this average at 153 litres per day. Ashford's total demand for potable water demand runs at an average between 25 Ml/d to 28 Ml/d (megalitres per day), rising in 'peak weeks' (for example,

¹⁰⁵ Sean Furey (Environment Agency) and Alan Turner (KCC) [oral evidence, 5th July 2005, and supplementary information], a graph showing the relationship between these figures, taken from Black & Veatch Consulting's IWMS Phase 3: Interim Report on Systems-Based Strategies for Mains Water, was shown to the Committee by Alan Turner. It is worth noting, however, that Mid-Kent Water's representatives told the Committee that they anticipated a rise in the number of *single-occupancy* households: Trevor Bishop & Paul Seeley (MKW) [oral evidence 26th July 2005].

¹⁰⁶ Sean Furey (Environment Agency) [oral evidence 5th July 2005]

prolonged spells of hot weather) to an average of 36 MI/d¹⁰⁷. However, the area's growth will have the potential to create a considerable rise in this demand. Since discrepancies exist between projections for population growth in the Ashford area, it follows that discrepancies will also exist between projections for the level of demand placed on the potable water supply.

(2) The Ashford IWMS has used modelling of four scenarios to project future levels of demand. The first, '**Mid-Kent baseline**' scenario uses a Mid-Kent Water estimate that without any water metering or other forms of demand management – a 'do nothing' effect - per capita consumption (or *pcc*) in Ashford will rise to 185 litres per day by 2031. Multiplying this by the population increase they expect, Mid-Kent Water estimates that total demand from Ashford will increase to **47 MI/d** by 2031. (Water company demand projections are scrutinised by both the Environment Agency and OFWAT, but it is worth noting that in its own supply-demand projections, as will be seen below, the Agency did make some modifications to water company basic forecasts¹⁰⁸). Making the same 'do-nothing' suppositions about metering and demand management, but using the GADF population forecasts, water demand would total **42MI/d**, which is the IWMS' **Scenario A**. **Scenario B**, called the '**realistic**' scenario, assumes that a constant rate of 153 litres a day *pcc* will be achieved in all new and old metered homes, so no immediate savings are achieved from metering, but some other form of demand management will keep *pcc* down in future, giving a total Ashford demand of **37 MI/d** by 2031. **Scenario C**, called the '**optimistic**' scenario, projects demand at **34 MI/d** by 2031. It uses a conclusion reached by the IWMS' consultants, that high water efficiency in new homes could reduce per capita consumption by around 33% to 102 litres per day; then it combines this saving with a take-up of water-saving measures in *existing* (not new) metered houses, and projected patterns of meter uptake. Between the highest and lowest scenario projections, this amounts to a **13 MI/d** discrepancy in demand projections for an average week.

(3) It must also be noted that there is a trend towards more frequent and larger peaks in water demand – 'peak week' demand. In 2004, Mid-Kent Water experienced its highest-ever recorded demand for water¹⁰⁹. Peak week demand is projected to rise from the current 36 MI/d to **47 MI/d** under Scenario B, and to **44 MI/d** under Scenario C¹¹⁰. Mid-Kent Water's forecast for peak weeks, including contingency 'headroom', totals approximately **64 MI/d**¹¹¹. These '**average day, peak week**' (**ADPW**) levels of demand are, if anything, more important projections to bear in mind than those of average demand, since it is these levels of demand which put the water system under the most pressure, and which are the drivers for proposals for new water resource infrastructure. The Campaign for Rural England (CPRE) supplied

¹⁰⁷ Alan Turner (KCC) [supplementary information] for the per capita consumption figure, the 'peak week' demand figure and the higher Ashford average week demand figure; Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005] for the lower average week demand figure.

¹⁰⁸ Nicola Simpson (OFWAT) [written evidence]; Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]

¹⁰⁹ *Bridging the Gap* [Mid-Kent Water, 2004], p.2.

¹¹⁰ The Select Committee is indebted to Alan Turner (KCC) for this extremely useful data regarding population and demand projections [provided in supplementary information].

¹¹¹ Graham Warren (Campaign to Protect Rural England) [supplementary information – CPRE statement on water resources].

information to the Committee, drawing on information in Black & Veatch's IWMS Phase 3 Report – Mains Water, which showed that without any resource developments there would be a supply deficit of **22 MI/d** between water available and the Mid-Kent Water's projections for ADPW demand¹¹². Mid-Kent Water estimates that the deficit throughout the company's coverage area could run between **26** and **50 MI/d** by 2030¹¹³.

Recommendation 5

Assisted by close observation of population growth and number of households in the Ashford urban area, and by further research (as recommended by the draft consultants' report for the IWMS) into levels of non-mains water abstractions, the Select Committee recommends that the area's actual level of demand for water should be closely monitored by the Environment Agency, especially in the planned growth period. This information must be shared between planners, water companies and water industry regulators, so that an agreement as to the baseline position for forward planning can be established.

5.4 Proposed Strategic Resource Developments

(1) Since there is agreement that a supply-demand imbalance could arise, the question remains as to how such an imbalance may be averted. Mid-Kent Water's monitoring plan for 2005-2010 has set out three strategic resource development options to address the potential imbalance in their coverage area, the proposals for which it has been developing with other water companies (Southern Water, Folkestone & Dover Water, and South East Water). These are:-

- **Trunk main link between Bewl Reservoir and Ashford by 2009**
- **Bewl Water Reservoir will have to be raised by 2014/15**
- **New reservoir built at Broad Oak by 2019/20**¹¹⁴.

(2) While funding for the water industry is only guaranteed on a five-yearly basis through the OFWAT price review process, planning for water resources is carried out with a twenty-five year horizon¹¹⁵. This water company resource planning process starts with an 'unrestrained option', whereby planners consider '*every single thing that anyone has suggested or we can imagine... we have had people from the port of Gothenburg down to tell us how much it would cost to ship water across in tankers, everything right from Broad Oak, to demand management, to [managing] leakage, to desalination...*'¹¹⁶. These options are then put through a 'cost-benefit' process, and prioritised according to least cost:most benefit.

(3) Regarding the proposed schemes outlined above, part of their attraction lies in the fact that such strategic options are '*capable of serving more than just the Ashford*

¹¹² Ibid.

¹¹³ *Bridging the Gap* [Mid-Kent Water, 2004], p.2.

¹¹⁴ As set out in Mid-Kent Water summary monitoring plan 2005 – 10.

¹¹⁵ Nicola Simpson (OFWAT) [written evidence]; Richard Dean & Nigel Hepworth [oral evidence]

¹¹⁶ Trevor Bishop and Paul Seeley (Mid-Kent Water), [oral evidence 26th July 2005]

*growth... the proposed main from Bewl to Ashford... also provides benefits in flexibility of supply along its route. The enlargement of Bewl Reservoir and the development of Broad Oak reservoir are proposed to maintain a supply-demand balance for Ashford but also cover other demand growth in Canterbury, Thanet, the North Downs and possibly Folkestone and Dover'*¹¹⁷.

(4) However, the Select Committee has concerns about the robustness of planning for phasing and funding these large infrastructure developments. Firstly, there is concern that uncertainty about the growth in population and demand levels could mean that the assumptions regarding demand on which strategic resource proposals are based may be erroneous. If water companies' estimates are too high, this could lead to resource development proposals being taken forward which, based on a lower than projected (or slower than projected) rise in population and demand could be delayed or averted. The Environment Agency recently undertook regional modelling for SEERA of the water supply-demand balance, based on water companies' population and demand projections (although adjusted to accommodate South East Plan proposed housing scenarios, and to include two water-saving possibilities of 8% and 21% in new homes)¹¹⁸. Both these scenarios show some deficit in Kent by 2010, resolved by 2015 with the enlargement of Bewl Reservoir¹¹⁹. The Committee heard that the bearing of this work is that *'if the preferred resource development options of the water companies all go ahead [these] will create surplus, so there is an implication that there is more resource development being proposed by water companies than may be needed'*¹²⁰.

(5) Allowing the water company's high projections for population and demand growth to stand, evidence heard by the Committee suggests that it is by no means certain that the anticipated benefits from their proposals for resource development would materialise at the optimum time to support growth. All three effectively constitute water transfers from one water company water resource zone to another. Water transfers are part of the Regional Water Resource Strategy, which is subject to regular consideration by water companies and the regulators, and they are proposed within the Black & Veatch draft final report as one proposed component for the IWMS preferred strategy to address mains water demand. However, there is a risk that *'some proposed schemes, such as Broad Oak, may not be viable'*¹²¹, and the Committee considers this risk regarding viability to be a very real one. The Committee also considers phasing and timing of resource development to be a major issue.

(6) With regard to the **Bewl-Ashford link**, the first resource development, the Committee heard that this would only add about another 3Ml/d to Ashford's potable water resource¹²². Moreover, Mid-Kent Water's representatives told the Committee that OFWAT wanted the project to be delayed by a year, from a proposed 2008

¹¹⁷ Richard Dean & Nigel Hepworth (Environment Agency) [written information supplementing oral evidence, 26th July 2005]

¹¹⁸ Richard Dean & Nigel Hepworth [oral evidence, 26th July 2005]

¹¹⁹ See the *Examination of Water Supply-Demand Balance Impacts of Housing Growth Scenarios of the Draft South East Plan* (Environment Agency, consultation published January 2005).

¹²⁰ Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]

¹²¹ *Ashford Water Update* issue 14 [July 2005], p.6.

¹²² Graham Warren (CPRE) [written information supplementing oral evidence, 8th July 2005].

completion to 2009. Mid-Kent Water were keen to point out that the issue was not whether the main should be built or not, that this dialogue between the company and OFWAT will be completed by December 2005, and that *'our view is that two thirds of it will go in the ground and the remaining third may be pushed back into the next price review period, in the worst case scenario'*¹²³. (Nevertheless, this may constitute some delay in additional resource delivery, while Ashford's population is already growing). Mid-Kent Water believe that the plan to raise **Bewl Water** would meet Ashford's demand until around 2019, which is the earliest date at which the company considers it would be practical to put a reservoir at Broad Oak into operation¹²⁴. CPRE have indicated that they would prefer to see a more local source of supply developed, such as a winter storage reservoir constructed in the flood-plain of the East Stour and fed by diversion of winter flood-flows¹²⁵. Kent Wildlife Trust also shared concerns that water transfers between catchments included the significant risk of disease organisms and invasive plants and animals moving from area to area; it is unclear whether this would be a risk in transfers between Bewl and Ashford¹²⁶.

(7) **Broad Oak**, in particular, caused the Committee concern. Mid-Kent Water and Southern Water's representatives suggested that the benefit of the proposed reservoir would be as surface water storage, capturing high winter rainfalls for constructive use, but despite wetter winters having been predicted as an impact of climate change, recent dry winters call the effectiveness of winter storage reservoirs into question¹²⁷. Moreover, this project has a long lead-time, but even so Mid-Kent Water told the Committee that including investigations, public enquiry and Secretary of State examination, three years for construction and three years to fill, the timetable up to 2019 to bring Broad Oak into operation is *'tight'*¹²⁸. Two promotions of this site for development of a reservoir have been put forward unsuccessfully in the last twenty-five years, the more recent of which in 1989/90 was *'withdrawn in the face of objections relating to the impact on the flow regime and quality of the river below the proposed intake'*, and environmental legislation is stronger now than then¹²⁹. Kent Wildlife Trust have already shared with the Committee concerns that Broad Oak reservoir would mean the loss of part of the Sarre Penn, which may support important headwater fauna, and that the reservoir would impact negatively on peak winter flows in the Stour downstream of Pluck's Gutter¹³⁰.

(8) Moreover, the Campaign to Protect Rural England (CPRE), in particular, have been very concerned about the real benefit that a reservoir at Broad Oak would bring to the supply-demand balance. The CPRE's Graham Warren proposed to the Committee that after likely reductions in abstraction, and with the implementation of

¹²³ Paul Seeley, asset manager (Mid-Kent Water) [oral evidence, 26th July 2005].

¹²⁴ Trevor Bishop & Paul Seeley, [oral evidence, 26th July 2005]

¹²⁵ Graham Warren (CPRE) [supplementary information].

¹²⁶ Richard Moyse (KWT) [supplementary information]

¹²⁷ John Spence, Wastewater & Environment Manager and Chris Kneale, Planning Manager (Southern Water) [oral evidence, 12th July 2005]; Trevor Bishop & Paul Seeley, [oral evidence, 26th July 2005]; Alan Turner (KCC) [supplementary information]. Written evidence received from Ashford Rural Trust suggests that average rainfall in Kent is close to 4.5" per annum, rather than the national average of around 9" p.a.

¹²⁸ Ibid.

¹²⁹ Graham Warren (CPRE) [oral evidence 8th July 2005].

¹³⁰ Richard Moyse (KWT) [oral evidence 8th July 2005]

the European Water Framework Directive, the benefit accrued to Ashford's water supply from Bewl-Ashford transfer would largely be diverted to maintain flows and water quality in the Stour. The graph which he supplied to the Committee - based on the CPRE's interpretation of the Directive's prospective impact - suggested that after this diversion of resources Broad Oak would not even be able to make up a shortfall caused in Average Day, Peak Week demand by the implementation of the Directive¹³¹.

(9) The Committee also has concerns regarding the funding of large-scale resource development projects. In response to initial questions regarding the five-year funding cycle, evidence received from OFWAT and from Mid-Kent Water suggested that the regulator, when setting prices in five-year timescales, nevertheless takes into account work such as research into potential resource developments identified in water resource plans for the next twenty-five years, as well as work on projects identified in companies' business plans¹³². The evidence suggested that water companies were expected to raise up-front capital costs for development to support growth, then the companies are expected by the regulator to recoup their investment from customer bills and from developer contributions. The aim of this is to reduce the burden on the existing customer base. OFWAT told the Committee that the last price review suggested that water companies had secured higher levels of developer contributions than they had forecast in business plans, and that accordingly the regulator had made adjustments in this price review where the forecasted developer contribution element had seemed unduly pessimistic. The adjustment was made where water companies expected to recover less than 60% forecast of new development costs for water service, after taking account of continuing and comparative efficiency challenges, and less than 50% for sewerage. In certain cases, OFWAT made the assumption that companies will rely on provisions in the Water Industry Act allowing them to recover the costs of implementing larger asset improvements from developers who connect to and benefit from such assets within twelve years of installation – this includes provision of water for Ashford, and evidence from Mid-Kent appears to accord with this, that use of the WIA rather than Section 106 agreements would be the means to obtain contributions¹³³.

(10) However, the Committee also heard evidence from the Environment Agency, regarding proposals that in future the development of alternative resources to replace abstraction may be financed from a fund acquired through the Agency's abstraction charging mechanism, and that *'this new mechanism of us potentially being a funding body is going to put us under some real responsibility to look for value for money for how that environmental fund... is spent... I think we would want to look at Broad Oak in terms of whether it was the right way to spend money to achieve the environmental reduction that we have identified'*¹³⁴. The Committee believes further clarification is

¹³¹ Graham Warren (CPRE) [oral evidence 8th July 2005]. It should also be noted that the Environment Agency's work linked to the WRSE South East Plan consultation did not allow for reductions to address sustainability concerns, nor the potential impacts of climate change: Richard Dean & Nigel Hepworth (Environment Agency) [written information supplementing oral evidence, 26th July 2005].

¹³² Nicola Simpson (OFWAT) [written evidence]; Trevor Bishop & Paul Seeley (Mid-Kent Water) [oral evidence, 26th July 2005].

¹³³ Nicola Simpson (OFWAT) [written evidence].

¹³⁴ Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]

needed regarding such a means of funding, and how this would sit with the Price Review system. Overall, the Select Committee felt that it had not been given a clear steer on the means and security of financing large-scale projects such as Broad Oak reservoir. It may be that more detailed information regarding project finances would be too commercially sensitive to share, but a lack of clear information, combined with other concerns about environmental viability and the potential for refusal of the reservoir proposal through planning and public enquiry, meant that the Select Committee was not convinced that the construction of a reservoir at Broad Oak should be relied on as a sure tactic in managing the supply-demand balance for Ashford, and Kent in general.

5.5 Alternatives to the Proposed Resource Developments: Desalination, Effluent Re-use and 'Housekeeping'

(1) Mid-Kent Water state that other means to increase supply are being considered, as back-up plans, including **desalination** and **effluent re-use**.

(2) After the construction of Broad Oak, **desalination** is being considered as a serious option by Mid-Kent Water, since Kent is surrounded by salt water. A small pilot scheme for desalination is currently going ahead in East Sussex, led by the Environment Agency and South East Water. It is, however, expensive, creates problematic by-products and has a high energy cost, although the Black & Veatch IWMS draft final consultants' report suggests that desalination may become more cost effective over the next twenty-five years as technology advances¹³⁵.

(3) Another option is **the re-use of highly-polished effluent** for water supply, and this is being proposed for consideration (under two different forms) by the IWMS consultants and by the Campaign to Protect Rural England. The IWMS consultants have proposed an option for the abstraction of treated effluent from the Stour between Bybrook WWTW and Wye, the benefits of which could include a reduction in reliance on groundwater; an increase in resource with the population as effluent increases; the removal of some 'non-chalky' water before the Stour's chalk river stretch starts downstream of Wye; and the possibility that the treated effluent could be used with other resources to maximise water efficiency. However, the ecological impact and potential benefits to the Stour downstream of Bybrook are highlighted for further research, as is the balance between yields and costs; nevertheless, this scheme has been welcomed as having potential merit by the Kent Wildlife Trust¹³⁶. The Committee also raised as a possible area for further research the addition of chalk to effluent, or the pumping of effluent through chalk, to help maintain the Stour's chalk balance downstream of Wye¹³⁷. A scheme proposed by the CPRE would make use of the 20 Ml/d of effluent currently being pumped from Thanet to Weatherlees WWTW for treatment, *'equal to approximately half of Ashford's current*

¹³⁵ Trevor Bishop & Paul Seeley (Mid-Kent Water), and Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]; *Ashford Water*, issue 14 [July 2005], p.6.

¹³⁶ Ibid.

¹³⁷ Graham Warren (CPRE) [oral evidence, 8th July 2005, and supplementary information]. Mr Warren offered figures suggesting that the estimated cost to Southern Water of recycling this effluent would be around the same level (£50M) as the company's proposed investment in Broad Oak.

daily demand', which would be treated and possibly stored in a comparatively small scale Broad Oak reservoir, before being used to supplement public water supply in East Kent¹³⁸. An effluent re-use scheme currently running in the Essex & Suffolk Water area, at Langford, has enjoyed considerable success¹³⁹.

(4) Although representatives of the Environment Agency were keen on effluent re-use in principle, they pointed out that such schemes need to be looked at carefully from a water quality point of view, and considering their environmental impact carefully on a case by case basis. For example, comparing the Essex scheme with proposals for re-use near Ashford, normal discharge from the Essex scheme is to the sea, rather than to a river; re-use there operates on a needs basis only; and the length of river between discharge and abstraction on the Chelmer may be greater than it would be on the Stour¹⁴⁰. Mid-Kent Water highlighted to the Committee that there are also energy costs associated with the treatment of effluent, through the reverse osmosis process, and that there may also be a problem of PR for effluent re-use but that this would have to be managed, if necessary, *'because we couldn't let that become a fundamental stumbling-block to what is or could be a sustainable solution'*¹⁴¹. Health concerns over the presence of exotics such as endocrine disruptors were also raised by the Committee, but it is understood that the Essex recycling scheme filters such traces out before the treated effluent re-enters the water supply system¹⁴².

(5) Peter Moore, Kent County Council's Environment Strategy manager, told the Committee that rather than reservoir enlargement or construction being proposed as first options for resource development, desalination and effluent re-use should be placed higher in a preferential hierarchy of options for increasing capacity. Mr Moore pointed out that a prevailing trend to look towards increasing storage before considering other technologies is evidenced by the fact that the draft South East Plan named possible sites for new reservoirs, but contained no other policies for enhancing capacity, despite these being discussed in technical notes to the Plan¹⁴³.

(6) The balance between water supply and **leakage** rates is one of considerable public and media interest, and was brought up by members of the Committee with Mid-Kent Water. In response, Trevor Bishop, Mid-Kent Water's Regulatory Manager, told the Committee that such 'housekeeping' would naturally help towards addressing the supply-demand imbalance, but that this would only meet about 1 – 2% of Ashford's needs¹⁴⁴.

¹³⁸ Graham Warren (CPRE) [oral evidence, 8th July 2005, and supplementary information]. Mr Warren offered figures suggesting that the estimated cost to Southern Water of recycling this effluent would be around the same level (£50M) as the company's proposed investment in Broad Oak.

¹³⁹ Ibid; this scheme was awarded a Special Commendation by the Environment Agency in its Water Efficiency Awards 2005

¹⁴⁰ Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]

¹⁴¹ Trevor Bishop & Paul Seeley (Mid-Kent Water) [oral evidence, 26th July 2005].

¹⁴² Graham Warren (CPRE) [supplementary information]. The Committee also addressed written questions in this respect both to the Drinking Water Inspectorate and to the local Director of Public Health, but their responses have not been received.

¹⁴³ Peter Moore (KCC) [written evidence].

¹⁴⁴ Trevor Bishop [oral evidence, 26th July 2005]

Recommendation 6

The Select Committee recommends that, given the current uncertainty regarding the viability of Broad Oak reservoir (which must be resolved as a matter of urgency), detailed work should be carried out looking into the viability of alternatives to resource the supply-demand balance in the Ashford area, particularly effluent re-use. Work on effluent re-use should especially focus on the local environmental implications of such schemes, and on public health and acceptance issues.

5.6 Demand Management Interventions

(1) 'Demand management' is a term which can cover a wide range of actions. Interventions proposed for the Committee's consideration included metering; the use of water efficient fixtures, fittings and appliances, such as bathroom ware and 'white goods'; harvesting rainwater, or recycling greywater.

Metering:-

(2) Although a potentially controversial topic, there is now a considerable body of research to suggest that metering does effectively reduce demand. Louise Every, co-author of the IPPR Commission on Sustainable Development in the South East paper *'Managing Water Resources and Flood Risk in the South East'*, told the Committee that *'we see metering as an essential first step in helping households monitor and manage their water use. Unmetered households are unable to measure their water use and so cannot compare it to an average consumption, and do not have any financial incentive to moderate their consumption'*. Ms Every cited research by UKWIR in 2004, which found that the average effect of metering on consumption is a reduction of 9%, predicted to increase by 0.2% per month relative to use were the household to have remained unmetered¹⁴⁵. Mid-Kent Water also estimate average pcc in a metered household to be 153 litres per day, compared to an average of 175 litres per day¹⁴⁶.

(3) At present, no prescriptive metering targets are set for water companies by regulators, but the Water Industry Act 1991 (WIA91) allows companies to compulsorily meter existing household customers when there is a change of occupier. Under the Water Industry Act 1999 (WIA99) all unmeasured households may request a meter installed free of charge by their water supplier, although assessed charges may be requested by the company if this is not practical or too expensive. Moreover, subsequent regulations under WIA99 extended circumstances under which companies may compulsorily meter existing customers – for example, if the customer waters their garden using non hand-held apparatus (e.g. sprinklers); has a particular type of shower, such as a power shower; and most notably, if the customer lives in an area of water scarcity as determined by the Secretary of State

¹⁴⁵ Louise Every (IPPR) [written evidence]; citation from *A Framework Methodology for Estimating the Impact of Household Metering on Consumption* (UKWIR, 2004).

¹⁴⁶ Alan Turner (KCC) [supplementary information]

for the Environment, Farming & Rural Affairs¹⁴⁷. The bulk of metering activity in the South East is optional metering, and OFWAT advised the Committee that *'as a result, metering currently tends to be piecemeal and its pace is limited... this limits the effectiveness of demand management activity and the scope to use price signals'*¹⁴⁸.

(4) Companies can apply for extended metering powers through recognition of water scarcity status, and OFWAT believes that within the context of the metering policy outlined above companies should consider applying for water scarce area status under WIA99 if the supply/demand balance is highly constrained¹⁴⁹. On the subject of such an application the Committee interviewed Gavin McHale, Head of Operations for Folkestone & Dover Water Services (FDWS). Mr McHale explained that 'Water Scarcity Status' should not be associated with drought conditions; rather, it refers to *'the sustainability of our water resources over a ten-year period... water-scarcity status would be a ten-year programme of compulsory metering of customers with the specific aim of introducing comprehensive demand management'*¹⁵⁰. Members of the Committee felt that the public would benefit from greater clarity regarding what Water Scarcity Status means, in terms of the water resource situation and action on metering.

(5) Even with Water Scarce Status a totally metered customer base would not be practically possible, and the expectation would be around a 90% level of metering in the FDWS supply area within that ten years, since multiple-occupancy buildings in particular caused complications in measurement that it would be difficult to surmount in the near future¹⁵¹. In Mid-Kent Water's area, the current level of metering lies at 33%, with an expectation of 82%; the company has not pursued Water Scarcity Status, because *'all it means is that we can get to that 82% slightly quicker... so you save slightly more water, but it's probably literally no more than 5% of the gap between supply and demand in the Ashford area, although this would be a small benefit, and we will watch very carefully what happens with Folkestone & Dover Water...'*¹⁵².

(6) Questions regarding the price of water were raised by the Committee membership, particularly whether metering – with the associated installation and monitoring costs – would cause an increase in the price per litre of water, and if so, by how much; and what was being done to safeguard the interests of vulnerable customers, particularly larger households. In response to the first question, the representatives of Mid-Kent Water and of Folkestone & Dover Water indicated that expenditure on installation and on monitoring meters would be modest. In addition, although Mr McHale admitted that he would expect the cost per litre to rise, both he and Mid-Kent Water's representatives suggested that a reduction in demand would mean a corresponding reduction in expenditure on supplying water, and could avert

¹⁴⁷ Nicola Simpson (OFWAT) [written evidence].

¹⁴⁸ Ibid.

¹⁴⁹ Ibid.

¹⁵⁰ Gavin McHale (FDWS) [oral evidence, 26th July 2005]

¹⁵¹ Ibid.

¹⁵² Trevor Bishop & Paul Seeley (Mid-Kent Water) [oral evidence, 26th July 2005].

spending on future resource development – implying that this would keep any rise in costs to customers down¹⁵³.

(7) Safeguards for vulnerable customers and the question of the effectiveness of metering in demand management are linked to the development of smart tariff schemes. Both Mid-Kent Water and FDWS told the Committee that debt is an issue for their companies as for the rest of the industry, since companies can no longer legally disconnect customers, but that developing appropriate tariffs will be key to addressing this issue in metered homes¹⁵⁴. Mid-Kent Water is currently working with KCC, OFWAT and Hillreed Homes to develop a trial scheme to meter 250 properties in Ashford on a variable tariff. Under this scheme which should be launched in April 2006, instead of an average price of 88p per cubic metre of potable water all year round, potable water will cost 44p/m³ in winter and £1.80/m³ in summer, *‘to create the financial difference, the economics which will drive a change in behaviour in those properties’* and hopefully lower average day, peak week demand¹⁵⁵. This is the first project in the UK on such a scale. OFWAT has agreed that properties in the trial area may be compulsorily metered, but the financial benefit held out will be that if members of these households adapt their behaviour, this tariff should save them money¹⁵⁶. However, for tariffs to be effectively applied on a large scale depends on metering being more widespread. The Committee was informed by Mid-Kent Water that sufficient incentives for a household to be voluntarily metered simply do not exist at present, and should not be put in place by the water companies. Largely as a result of the present situation, most householders who currently opt for metering live in properties with a high rateable value¹⁵⁷.

(8) On the subject of vulnerable customers, Mid-Kent Water told the Committee that financial assistance schemes are available, but that these are currently not widely publicised, rather pointed out directly to customers *‘in genuine trouble’*¹⁵⁸. Louise Every (IPPR) advised the Committee that with the spread of metering it will be important *‘to ensure that low-income, large families and households with special water needs are aware of and receive the financial help available to pay for water’*¹⁵⁹. While sympathetic regarding the problem of bad debt for the water industry, the Committee feels that alerting customers to the availability of assistance at an earlier stage may have the potential to avert serious financial problems.

Recommendation 7

The Select Committee recommends that investigations should continue as to the most effective means to achieve demand management through tarified metering. The Committee also recognises that incentives are lacking for customers to opt into metering, and recommends that the Government has a

¹⁵³ Gavin McHale (FDWS) and Trevor Bishop & Paul Seeley (MKW) [oral evidence, 26th July 2005]

¹⁵⁴ Ibid.

¹⁵⁵ Trevor Bishop (Mid-Kent Water) [oral evidence, 26th July 2005]. The ‘Elliot Morley’ tariff model - a block allowance per person at a basic rate, then incremental rises in price with higher consumption than this basic allowance - was rejected as being difficult to administer and monitor when set alongside occupancy rates.

¹⁵⁶ Ibid.

¹⁵⁷ Ibid.

¹⁵⁸ Ibid.

¹⁵⁹ Louise Every [written evidence].

role to play in developing such incentives. The Committee would also recommend further research and open discussion regarding the potential costs of metering to customers, the reasons why water companies may apply for Water Scarcity Status and the implications of compulsory metering powers under Water Scarcity Status. The Committee urges that considerations of social justice be given high importance in the development of metering tariffs and that schemes to assist vulnerable customers should be publicised more widely.

Water Efficient Fixtures, Fittings and Appliances:-

(9) The Committee heard from water companies, from the IPPR and from several housing developers that many simple options are available for installation in newly-built houses to reduce consumption of water without requiring considerable changes to people's behaviour. These include the installation of dual-flush and smaller-cistern toilets; spray or aerated taps and shower heads; three-quarter size baths, over-bath showers, gravity showers and shower units which have a 'stop' on the water control, meaning that the shower does not run at full discharge level, unless the stop is lifted¹⁶⁰. Continental homes are more often built with showers only, and a representative of the social housing developer Moat Housing Group advised the Committee that it had built shower-only homes in Willesborough Lees in Ashford, although this measure required a special exemption¹⁶¹. Water butts for garden irrigation were mentioned by one developer, Westbury Homes, as a measure that they would encourage, but that these containers need to be placed at the point of occupation of the property, and that the cost of bringing them on to site, storing and fitting them was disproportionate to the cost of the butt – hence they would prefer '*to see local residents required to do this as a local bylaw after occupation*'¹⁶². The issue of expense was one which several developers brought up, and this will be addressed in more detail below (see *Water efficiency: guidance or regulation?*)

(10) The Committee were particularly interested to hear from Mrs Caroline Field about a partnership between Moat Housing Group and the local water company in Essex, to identify households who are Moat tenants and who also have a water meter. Around five hundred of these households will be offered a package of help including new toilets, taps and advice about water saving. Mrs Field explained that '*potentially this could be a long-term standing partnership, like the partnership with energy providers to grant fund insulation*'¹⁶³. The Select Committee would welcome more such partnership initiatives between water companies and developers to further water efficiency, particularly in the light of the IPPR's Commission on Sustainable Development in the South East final report, recently released, in which it

¹⁶⁰ Trevor Bishop & Paul Seeley (Mid-Kent Water) [oral evidence, 26th July 2005]; Louise Every (IPPR) [written evidence]; Graham Warren (CPRE) [written information supplementing oral evidence, 8th July 2005]; Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005]; Paul Donnelly (Crest Nicholson Plc.) [oral evidence, 13th July 2005]; David Mills (Westbury Homes) [written evidence]; Tony Lee (Bovis Homes) [written evidence].

¹⁶¹ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005].

¹⁶² David Mills (Westbury Homes) [written evidence]

¹⁶³ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005].

recommends an equivalent of the Energy Efficiency Commitment, requiring water companies to be set targets for reducing consumption in households and businesses¹⁶⁴. Partnerships like that in Essex could offer one way of meeting these targets.

(11) The Committee also received evidence indicating that there would be significant benefits to be gained from the development of a recognised, accredited water efficiency labelling scheme for household fittings and appliances (like the energy ratings for white goods). Customers could choose appliances which they could be confident would reduce their water use; it would be easier to specify levels of water efficiency to be attained in new build; and retro-fit programmes such as the one described above could be implemented on the basis of appliances chosen by their water efficiency label¹⁶⁵. (One developer even suggested the possibility that, if building regulations were changed to give more weight to water efficiency, properties could be given a water efficiency rating, as a SAP rating is already given for energy efficiency)¹⁶⁶. Retrofit of such appliances could be incentivised in various ways, including enhanced capital allowance or tax incentives¹⁶⁷. It is important to emphasise the importance of improving the efficiency of existing housing stock at the same time as raising standards in new build.

Recommendation 8

The Select Committee strongly recommends to the Government that an accredited and recognised system of water efficiency labelling should be developed for fixtures, fittings and appliances using water. To address the important issue of reducing demand in existing housing stock, consideration should be given as to how retrofit of high-efficiency fixtures, fittings and appliances could be incentivised effectively. Installation of such measures in new build should be made compulsory under reformed building regulations, at least in areas where the water supply-demand balance is under strain.

The Select Committee also strongly recommends to the water industry regulators that a water efficiency commitment should be developed, setting targets for water companies to reduce water use by their customers. Active encouragement should be given by Government and by the water industry regulators to partnership working on demand management projects between water companies and developers, and water companies and local authorities.

Rainwater Harvesting, Greywater Recycling:

(12) The Committee was also interested to hear evidence regarding more innovative schemes for reducing demand for potable water, including rainwater harvesting and greywater recycling, whereby either treated rainwater, or treated greywater discharged from baths, showers, sinks, and appliances such as

¹⁶⁴ *Sustainable Development in the South East* (IPPR, July 2005).

¹⁶⁵ Nicola Simpson (OFWAT) [written evidence].

¹⁶⁶ Tony Lee (Bovis Homes) [written evidence].

¹⁶⁷ Ibid.

dishwashers and washing machines could be used, instead of potable water, for non-drinking purposes – for example, toilet flushing.

(13) On the subject of greywater recycling, the evidence received was not encouraging. Crest Nicholson Plc, Moat Housing Group and Bovis Homes informed the Committee about their involvement in small-scale schemes trialling this technology¹⁶⁸. In the case of the Crest Nicholson project, greywater was pumped to an underground storage system, then disinfected with bromide for use in toilet flushing. This system produced savings of 36% compared to average water use (the system manufacturers claimed 40% reductions were possible) but had several problems with the filters, pumps and tablets. In addition it needed a full service every nine months or so, and non-specialist plumbers found it difficult to undertake work in houses with the unfamiliar technology. Moreover, if the system was almost too conducive to water efficiency – so not enough greywater was produced – or in dry periods, potable water needed to be employed as a top-up, and it was difficult to tell how much greywater compared to potable water the household was using¹⁶⁹. A similar problem, with not enough greywater being produced to recycle, was also encountered by the Moat Housing Group in a project in Essex¹⁷⁰. Bovis Homes found that *‘the use of greywater recycling proved so unpopular when we installed it as a trial that it was removed and the units converted to mains supply’*¹⁷¹.

(14) The representatives of both developers indicated that more success might be encountered by using greywater recycling, and especially rainwater harvesting, on a development / municipal level, where responsibility could be transferred to experts in water treatment rather than individual home owners. Some of the more radical technologies for water harvesting and recycling, such as the use of specialist flora on ‘green roofs’ to filter pollutants through their roots, could require an approach to implementation and regulation departing from the current water industry structure, but there is evidence that such schemes can work¹⁷². Caroline Field (Moat Housing) cited the example of a project in the Nord-Pas de Calais region of France, where rainwater would be harvested from rooftops to clean the market place, and suggested this could also be used for purposes such as flushing public toilets¹⁷³. Green roofs and rainwater harvesting may also go some way towards addressing problems of urban run-off, and flooding after high rainfall, by capturing and making constructive use of water which would otherwise flow down the drain¹⁷⁴. Mid-Kent Water has also been supporting the development of water-efficient gardens¹⁷⁵.

¹⁶⁸ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005]; Paul Donnelly (Crest Nicholson Plc.) [oral evidence, 13th July 2005]; Tony Lee (Bovis Homes) [written evidence]. Crest Nicholson are not directly involved in developments in Ashford, but were called by the Committee to give information after being recommended as an example of good practice and innovation in housing development.

¹⁶⁹ Paul Donnelly (Crest Nicholson Plc.) [oral evidence, 13th July 2005]

¹⁷⁰ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005]

¹⁷¹ Tony Lee (Bovis Homes) [written evidence].

¹⁷² Alan Turner (KCC) [supplementary information]

¹⁷³ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005]

¹⁷⁴ Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]; *Ashford Water* newsletter, issue 14 [July 2005], p.5.

¹⁷⁵ Trevor Bishop & Paul Seeley (Mid-Kent Water) [oral evidence, 26th July 2005].

Recommendation 9

The Select Committee strongly recommends that further research be undertaken into the possibility of introducing rainwater harvesting and other appropriate technologies to new developments in the Ashford growth area. The results of this research should be reflected in the design of future developments in the Ashford growth area and elsewhere, and in the revision of national building regulations.

The level of potential savings from demand management measures

(15) The Committee found that opinions differ regarding potential water savings from the use of metering, water efficient fixtures and appliances, greywater recycling and / or rainwater harvesting. Graham Warren (CPRE) suggests that a combination of metering, dual flush toilets, rainwater harvesting for garden watering, gravity showers and greywater recycling could reduce average domestic water consumption by over 30%, and Crest Nicholson's experience suggests that savings of this level are possible in new build with a very high level of water saving technology installed¹⁷⁶. Louise Every (IPPR) also suggests that *'savings of 25% would depend on people changing the way they use water, or the type of water they use – i.e., more use of grey and rainwater schemes'*¹⁷⁷. When the Sustainable Communities Plan was launched, the Deputy Prime Minister stated that water efficiency savings of 20 – 30% in new build houses were crucial¹⁷⁸. However, evidence received by the Committee from the Office of the Deputy Prime Minister suggests a lower scale of potential savings, that *'research of readily-available water saving measures – water efficient appliances, condensing boilers etc., indicates that a 15% reduction in water use is possible. Other measures – recycling of waste-water, rain-water harvesting, green roofs may take this to 25%'*¹⁷⁹. If 'Sustainable Communities' targets are to be met, then, it appears that an open-minded approach should be taken to the type of water that is used, and there is evidence that local or municipal rainwater recycling schemes could offer a practical way to address the need for a higher level of demand reduction. Moreover, *'it seems likely that promoting water efficiency and retro-fitting water efficient fixtures and fittings will not achieve the water savings that we need without widespread metering'*¹⁸⁰.

5.7 Water Efficiency: Guidance or Regulation?

(1) The Ashford IWMS has a broad-based steering group, and it has invited participation in its workshops from a wide range of stakeholders in Ashford's growth. The Committee was keen to hear what level of engagement developers may have had with the Study, and received this response:-

¹⁷⁶ Graham Warren (CPRE) [information supplementing oral evidence, 8th July 2005].

¹⁷⁷ Louise Every (IPPR) [written evidence].

¹⁷⁸ Sustainable Communities Task Group 2004; cited in *Managing Water Resources & Flood Risk in the South East* (Louise Every & Julie Foley, IPPR, 2005) p.25.

¹⁷⁹ Mel Lea (ODPM) [written evidence]

¹⁸⁰ Sean Furey (Environment Agency) [written information supplementing oral evidence, 5th July 2005].

'There hasn't been much engagement with developers. During the Study two workshops have been held on topical water management solutions – Innovative Wastewater Treatment technology, and Rainwater Harvesting and Greywater Recycling systems. These workshops were attended by a few of the smaller developers, but in general, developers appear to be waiting to be told what is required of them. None of the volume house builders accepted the workshop invitation' ¹⁸¹.

(2) While the Committee has received evidence suggesting that some developers are giving water efficiency serious consideration, and is encouraged by the Kent Water Demand Management group's partnership with Hillreed Homes on water efficiency¹⁸², it is concerned that there does not appear to be a widespread, firm commitment to incorporating high standards of efficiency in housing design¹⁸³.

(3) The reluctance to commit to these high standards could, in part, be due to market drivers and other economic factors. One developer told the Committee that, *'there is no customer interest in water efficiency that I am aware of'* ¹⁸⁴, while another suggested that despite a CABA survey, suggesting that 82% of people surveyed would be willing to pay 2% extra for an 'Eco-home' (a home built to BRE ecological specifications), no evidence of this had been seen in the company's sales offices¹⁸⁵. Representing Moat Housing Group, which provides social housing, Caroline Field told the Committee that pressure to make development grants go as far as possible and keep costs down is combined with an inability as a non-profit-making group to recoup the cost of water efficient technology – which is problematic since the water efficiency measures they use are more costly to install than basic fixtures and fittings¹⁸⁶.

(4) One way to provide a level playing field for all developers would be to require a higher level of water efficiency measures to be installed in new build homes through a reform of the building regulations¹⁸⁷. Evidence received by the Committee from the ODPM states that *'work is in progress to develop proposals for water conservation measures to be added to part G of the Building Regulations. It is expected that a consultation paper describing these proposals will be published early in 2006'* ¹⁸⁸. A Code for Sustainable Buildings is being drawn up by Government in conjunction with industry, which will be voluntary except for all publicly funded buildings (which will be expected to conform from April 2006), and it has been

¹⁸¹ Sean Furey (Environment Agency) & Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]

¹⁸² Ibid.

¹⁸³ Peter Davis (Regeneration & Projects Manager, KCC) [oral evidence, 5th July 2005], also highlighted differences in developers' approach to water efficiency.

¹⁸⁴ Tony Lee (Bovis Homes) [written evidence]

¹⁸⁵ Paul Donnelly (Crest Nicholson) [oral evidence, 13th July 2005].

¹⁸⁶ Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005].

¹⁸⁷ Peter Davis (KCC) [oral evidence, 5th July 2005]; Paul Donnelly (Crest Nicholson) [oral evidence, 13th July 2005]. Evidence from KCC Strategic Planning suggested that building regulations rather than the planning system would offer better means to attain high standards of water efficiency in the design of new homes: Leigh Herington (KCC) [oral evidence, 5th July 2005]. The planning system has greater impact on wastewater issues – see next section.

¹⁸⁸ Mel Lea (ODPM) [written evidence]

suggested by the Environment Audit Committee that this Code's requirements could form precursors to the demands of more stringent building regulations¹⁸⁹. Alternatively, the proposal could be modified to set a date by which local authorities could insist on the Code (or elements of it) being adhered to in their areas, thus allowing authorities the liberty to opt out in areas which are not short of water¹⁹⁰.

(5) In Kent, the preparation of a Design Guide (currently undergoing consultation) has highlighted areas for attention and offered guidelines regarding sustainability in building design and construction, including water supply and drainage. *Kent Design: a guide to Sustainable Development* is due for publication in November 2005, and will automatically be adopted as a supplementary document to the Kent & Medway Structure Plan¹⁹¹. Although it would not be used alone to justify a planning refusal, it may be used to support refusals based on design issues in local authorities' Local Plans / Local Development Documents or the Structure Plan, and used to back up enforcement¹⁹². The Kent Water Demand Management Group has produced a set of Best Practice guidelines on water use efficiency for new homes, which includes a set of water efficiency sheets intended to form a technical annexe to the Kent Design Guide, and to provide material for LDFs¹⁹³. Ashford Borough Council's *LDF Core Strategies – Preferred Options* state that the Council wishes to exceed building regulations requirements and adopt Eco-Homes or BREEAM standards for all new development, as well as setting standards for six key areas of resource use identified in the Ashford Capacity Study and echoed in the SEA and in SEEDA's *Taking Stock* report and Sustainability Checklist – including water¹⁹⁴. These dual standards are being proposed to promote high performance across the board because as witnesses highlighted to the Select Committee, the Eco-Homes / BREEAM assessment methods use an aggregate approach, whereby high scores in one aspect can make up for low scores in another¹⁹⁵. However, an officer of Ashford Borough Council told the Committee that clarity needed to be sought from Government on whether the Council could insist on design requirements and, it being easier to build high standards of water efficiency into new rather than existing buildings, building regulations should require this¹⁹⁶. In addition, evidence heard by the Committee suggested that enforcement officers were under-resourced¹⁹⁷.

Recommendation 10

The Select Committee welcomes the commitment to and guidance for sustainable development offered by *Kent Design*, and Ashford Borough Council's commitment to seeking high standards of water efficiency in new development, including consumption of toilets, taps and showers, bath size and white goods (where installed by the developer). It urges Government to give water conservation measures priority consideration in reform of the

¹⁸⁹ Louise Every (IPPR) [written evidence]. Cites *Government response to the House of Commons Environment Audit Committee Report – Housing: Building a Sustainable Future* (May 2005).

¹⁹⁰ Ibid.

¹⁹¹ Peter Davis (Regeneration & Projects Manager, KCC) [oral evidence, 5th July 2005].

¹⁹² Ibid.

¹⁹³ Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]

¹⁹⁴ Ashford Borough Council's *LDF Core Strategies – Preferred Options*, esp. pp.30 – 36.

¹⁹⁵ Ibid., p.34; cf. Caroline Field (Moat Housing Group) [oral evidence, 8th July 2005].

¹⁹⁶ Simon Cole, Policy Manager (Ashford Borough Council) [oral evidence, 12th July 2005].

¹⁹⁷ Leigh Herington (KCC) [oral evidence, 5th July 2005]

building regulations, including provision for stricter standards to be applied by local authorities in areas where the supply-demand balance is particularly under strain. Existing training and information should be extended to support local authority officers in enforcing building regulations and other high standards for design and construction, as deemed appropriate for the needs of the area (e.g. EcoHomes standards, SEEDA Sustainability Checklist, *Kent Design* principles). Local authority officers should be assured of the resources necessary to enforce such regulations and standards.

Water-Efficient Businesses

(6) Although the bulk of potable water demand is for domestic use, businesses can contribute to managing the supply-demand balance, by achieving high levels of water efficiency in their premises, encouraging behavioural changes in the work place, and taking on a community leadership role. The Committee received evidence from SEEDA suggesting that, as well as addressing water efficiency in new business premises through the developing Code for Sustainable Buildings and changes to the Building Regulations, efficiency should be maximised in existing premises. Businesses could be encouraged to seek accreditation under one of the environmental management schemes covering water efficiency, such as ISO14001, EMAS or BREEAM¹⁹⁸.

(7) SEEDA's joint sponsorship with the Environment Agency of the South East Water Resources Forum offers a means to raise levels of awareness in the region's business community regarding the importance of water efficiency¹⁹⁹. The work of the Kent Sustainable Business Partnership also offers an opportunity to encourage businesses to adopt best practice in this respect. SEEDA's evidence re-emphasised the importance of water resources, wastewater disposal, environmental quality and flood risk management to the achievement of sustainable development in the South East, especially the growth areas, and, moreover, stated that *'the Ashford growth area is affected by all these water-related issues, and SEEDA believes that it is vital that the necessary infrastructure is planned, funded and implemented to support the intended levels of growth'*²⁰⁰

Recommendation 11

The Select Committee supports initiatives such as the SE Water Resources Forum, and the Kent Sustainable Business Partnership, which raise environmental considerations further up the business agenda. The Committee would wish to see more businesses applying for environmental management accreditation, and would suggest that more be done to incentivise such accreditation.

¹⁹⁸ Simon Richardson (SEEDA) [written evidence].

¹⁹⁹ Ibid.

²⁰⁰ Ibid.

Non-Mains Water Abstraction

(8) As stated above, the draft consultants' report for the IWMS has highlighted the need for further research into the actual level of non-mains water abstractions, which add to the overall pressure put on water availability in the Stour Catchment²⁰¹. Under the Water Act 2003, abstractors may take up to 20m³ of water in a twenty-four hour period without a licence. Beyond that, application for an abstraction licence must be made to the Environment Agency²⁰². The majority of non-mains water abstractions are for agricultural or horticultural purposes. The Select Committee received evidence from the National Farmers' Union (South East Region) suggesting that the highest levels of agricultural and horticultural demand in the Stour Catchment are experienced in the north eastern half, where potatoes, soft fruit and salad crops all require consistent supplies of water for spray and trickle irrigation²⁰³. Of concern to those cultivating such crops is the fact that, again under the Water Act 2003, trickle irrigation will be brought into the licensing system for the first time from 2006; *'clearly potential trickle licensees in over-licensed or over-abstracted areas, or other areas where there is no water available for further licensing, may have difficulty meeting their irrigation requirements'*²⁰⁴. It may be possible that any pressure on abstractions arising from the need to maintain aquifer flow to rivers under the EU Water Framework Directive could also have an impact on irrigation.

(9) If climate change impacts include hotter, drier summers, and in tandem with this the irrigation of crops such as soft fruit and salad is constrained, it may be that diversification to other crops should be seriously considered as an option²⁰⁵. Opinion regarding diversification was divided; while Phil Sivell (UKCIP) considered it to be an opportunity to proactively adapt to new circumstances and exploit them, NFU South East told the Committee that *'the soft fruits and salads sector is one of the most commercially successful at the moment. It is unlikely that diversification into something less commercially sound would be an attractive solution. Only market circumstances at the time will tell'*²⁰⁶. In the meantime both the NFU and the Environment Agency encourage the use of on-farm reservoirs by all farmers to store winter rainfall; *'But there are issues of planning permission, landscaping and high capital cost that require attention if we are to increase the take-up rate of this method of improving summer supplies for irrigation and animal husbandry'*²⁰⁷. Moreover, as with larger winter storage reservoirs, the questions arises as to how these on-farm reservoirs could be filled if heavy winter rainfalls do not occur.

(10) Accordingly the Committee's recommendations largely suggest the need for further research and policy development in this respect. Given the division by the WFD of surface water management into river basins and sub-divisions, which will probably reflect catchments, the appropriate approach may best be made on a Stour catchment-wide basis. The Committee suggests that actions on non-mains water

²⁰¹ Ashford Water Update no.14 [July 2005], p.8.

²⁰² NFU [written evidence].

²⁰³ Ibid.

²⁰⁴ Ibid.

²⁰⁵ Phil Sivell (UKCIP) [oral evidence, 13th July 2005]

²⁰⁶ Phil Sivell (UKCIP) [oral evidence, 13th July 2005]; NFU [written evidence]; similar points to those of the NFU regarding vulnerable crops were given by Ashford Rural Trust [written evidence].

²⁰⁷ NFU [written evidence].

abstraction, agricultural and horticultural diversification and water use, as well as measures to tackle agricultural diffuse pollution (considered later in this report), could be co-ordinated through the Stour Catchment group proposed in Recommendation 2²⁰⁸. KCC already has a strong rural community leadership role (through Countryside Management Projects, support for the FWAG, Rural Economy etc.) which would greatly benefit the work of the proposed Stour Catchment group²⁰⁹.

Recommendation 12

The Select Committee encourages local authorities, DEFRA and the Environment Agency to take forward the following actions:-

- **compulsory metering of non-mains abstraction within the Stour Catchment, especially any closely linked to water resources for the Ashford growth area, in order to ascertain usage – to be complete within five years**
- **research into the possibilities offered to farmers and horticulturists, through diversification, to proactively adapt to water resource pressures and climate change, and into the best policies and means by which to support such adaptation**
- **research into the means to make the most efficient use of water from abstractions, and into alternative water resources (including reservoirs)**
- **partnership working with farmers and with groups such as the NFU, to give practical advice and support regarding efficient water use and the planning, development and deployment of alternative resources. Within Kent, such work could be facilitated by the Stour Catchment group outlined in Recommendation II above.**

5.8 The balance between Demand Management and Resource Development

(1) The Select Committee welcomes the consideration given to options for demand management through regulation and education being offered in the consultants' draft final report for the IWMS, as a part of a strategy along with making more efficient employment of existing groundwater resources, indirect effluent re-use, and the reduction of leakage. The consultants also highlight the option of schemes for transfer of water from outside the catchment, including the Bewl pipeline and the possibility of Broad Oak²¹⁰. However, opinion is divided as to whether a 'twin-track' approach of demand management and resource development is indeed the best way to balance supply and demand in the Ashford growth area, and the South East in general; and if 'twin-tracking' is the better option, what the respective contributions should be from demand management and resource development.

²⁰⁸ The development of a group specifically to target land management issues is an option for action proposed by the IWMS consultants' draft final report: see *Ashford Water Update* no.14 [July 2005], p.8.

²⁰⁹ Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]

²¹⁰ *Ashford Water* newsletter, issue 14 [July 2005].

(2) Several witnesses indicated that they may prefer a 'sequential' approach to be taken to addressing the supply-demand balance. For example, Richard Moyse (Kent Wildlife Trust) stated that given the pressure current abstraction levels placed on the environment, *'the first priority must therefore be to significantly reduce per capita consumption'*²¹¹. Peter Moore, KCC's Environment Strategy Manager, indicated that he would welcome an approach that placed first emphasis on reducing water consumption, based on a hierarchy like that for reducing, re-using, recycling and finally disposing of waste. This echoes national policy guidance on water that *'only where a demand management approach is clearly insufficient or unjustified in terms of cost should companies look to the development of new resources'*²¹². Mr Moore suggests that public education will naturally have an important role in demand management, but that it will take time to have an impact on behaviour, and that in the meantime *'regulatory and fiscal mechanisms to manage demand must also be implemented'*²¹³.

(3) In its work contributed to SEERA through the WRSE Group consultation on the South East Plan, the Environment Agency modelled a solution to the challenge posed by growth to the water supply-demand balance, whereby 74% of the projected deficit is met by the resource development options proposed by water companies, and 26% by demand management (their models of 8% and 21% efficiency in new homes already exceed water companies' baseline assumptions). However, the Agency's representatives told the Committee that they would prefer to see a better balance between demand management and resource development²¹⁴. OFWAT pointed out to the Committee that *'water companies' plans assume the existing work on demand management continues, but do not generally identify competitive options for further savings... Lack of robust datasets currently limits the implementation of further demand management interventions and a framework for considering demand management activity'*²¹⁵. OFWAT, DEFRA, the Environment Agency and the water industry are *'considering a collaborative study to look at this issue'*²¹⁶. The Select Committee is concerned that while research is being considered and undertaken, growth in Ashford continues, and *widespread* public education and the necessary incentives and regulation to optimise demand management measures are not being taken forward. This, in turn, has a detrimental effect on the perceived benefits of demand management, and undermines its attractiveness for water company investment.

(4) However, while advocating water efficiency in private homes and in building and business, Kent County Council and other public bodies must do their part to ensure that they maximise their own water efficiency. It is estimated that water consumption across KCC's areas of business, including schools, is equivalent to the

²¹¹ Richard Moyse (KWT) [supplementary information]

²¹² Peter Moore (KCC) [written evidence], citing *Taking Water Responsibly* [DETR, 1999].

²¹³ Ibid.

²¹⁴ *Examination of Water Supply-Demand Balance Impacts of Housing Growth Scenarios of the Draft South East Plan* (Environment Agency, consultation published January 2005); Richard Dean & Nigel Hepworth [written information supplementing oral evidence, 26th July 2005].

²¹⁵ Nicola Simpson (OFWAT) [written evidence]. This was echoed in the written evidence supplied by Louise Every (IPPR) to the Committee, that the weak evidence base on reducing household demand – except by metering – leads to uncertainty and *'a reluctance by water companies (and the regulators and government to some extent) to pursue demand management strategies more strongly'*.

²¹⁶ Nicola Simpson (OFWAT) [written evidence].

whole town of Ashford²¹⁷. KCC's commitment in the original *Kent Environment Strategy* to a water audit (carried out in all individual buildings) has not been undertaken comprehensively²¹⁸. This action could identify potential savings to be made on a building by building basis and across the authority. Water use levels need to be addressed as part of a shift towards broader sustainability within KCC's procurement and property management functions²¹⁹.

Recommendation 13

The Select Committee would endorse the IPPR's position that *'we do not feel that a lack of evidence should mean an abandonment or down-playing of demand management strategies, but that greater effort should be made to build the evidence base on how effective different strategies are in reducing water demand'*. Given the existing concern regarding abstraction levels and the potential impact of growth on the supply-demand balance, discrepancies between population and demand projections, and uncertainty regarding the viability of some resource development options, demand management measures must be viewed as an immediate priority for action.

- **Public education could be led in the first instance by local authorities such as Kent County Council and Ashford Borough Council, in partnership with water companies, developers and local environmental groups.**
- **The Committee is encouraged by the work of the Kent Water Demand Management Group, led by KCC, in promoting water efficiency in building and business; the work of this Group should be supported and extended to support the mobilisation of stakeholders to systematically address water consumption pressures and develop related business opportunities locally (e.g. in water efficient technology).**
- **Should a Stour Catchment Group such as that proposed in Recommendation II be developed, this group could take forward work in engaging the local population to tackle challenges in the supply-demand balance in their area.**
- **Local authorities should carry out auditing of their own water use, and take action to improve efficiency. KCC should reaffirm and act on its commitment to carry out a water audit across all its areas of business, excluding schools, within three years. Schools should be encouraged to respond to this action within the same timescale.**

²¹⁷ Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]

²¹⁸ Peter Moore (KCC) [written evidence].

²¹⁹ Alan Turner (KCC) [written information supplementing oral evidence, 5th July 2005]

6. Wastewater: Completing the Cycle

6.1 Ashford's Wastewater: Bybrook WWTW

(1) At present, wastewater from Ashford and its surrounding area is treated and disposed of through the wastewater treatment works at Bybrook, which are owned and managed by Southern Water Services. Bybrook serves a population equivalent of 67,000 people, and discharges its treated effluent to the Stour. Its operations are regulated for environmental impact and consented by the Environment Agency, which sets various standards for the volume and quality of the effluent discharged. Southern Water has a statutory duty to meet these consent standards. Bybrook WWTW is consented to discharge a Dry Weather Flow (DWF) of 18,000 m³ per day. Its sanitary standards for suspended solids (SS) and biological oxygen demand (BOD) run at 30/20 SS, 20/15 BOD, -/5 NH₃ (nitrate), and 1P (phosphorus) – one of the tightest phosphorus standards, achieved by phosphorus stripping²²⁰. A chart showing the detailed 'layout' of the treatment process at Bybrook is appended to this report, but in brief, the process is as follows:

Preliminary Treatment:-

- Inlet works screen out debris, which is collected and sent to designated controlled tip sites
- Grit removal (wastewater includes road run-off)
- Phosphate stripping (using ferric chloride to react with the phosphates to create a solid which can be removed)

Primary Treatment:-

- Primary settlement tank: particles settle as sludge on the bottom of the conical tank, and are extracted. Liquid is passed on for secondary biological treatment.

Secondary Biological Treatment:-

- Circular filter bed; wastewater is sprayed onto clinker hosting micro-organisms, which breakdown and digest organic pollutants in the wastewater
- Final settlement tank: further settlement of any remaining particles of solid waste
- Further ferric chloride phosphate stripping

Tertiary Treatment:-

- Effluent is fed through twograss plots, which are rotated to ensure they do not become waterlogged and unusable. It can be put through a sand bed microfilter, if necessary.
- Discharge to Stour.

(2) In addition to treating wastewater, Bybrook is a 'sludge treatment works'; the sludge removed from the crude wastewater is blended with sludge from smaller treatment works, and chemically thickened. It is then fed into digester tanks,

²²⁰ John Spence, Wastewater & Environment Manager (Southern Water Services) [presentation given to the Committee at Bybrook WWTW – henceforward referred to as 'Bybrook presentation', 26th July 2005]

remaining there for fourteen days at a constant 35°C, allowing bacteria to break down organic matter in the sludge to water, CO₂ and methane gas. The methane created in this Combined Heat & Power (CHP) plant is stored on site in a gas holder, and used to provide renewable energy on-site. Any surplus energy is sold to the National Grid. The remaining sludge is then fed into a centrifuge dewatering plant, which separates solids from any remaining water. The water removed is sent back to the works for treatment. The remaining 'cake' is stored in a sludge cake bay for four months while remaining bacteria die off, before being sold to farmers as fertiliser. In 2008, a drier plant will be built at Bybrook, allowing pellets to be created from the sludge. These have the benefit of acting as a slower-release fertiliser, and of being less malodorous than sludge cake²²¹.

6.2 Past Concerns and Proposals for the Future of Wastewater Treatment for Ashford

(1) Previous sections of this report have highlighted past and continuing concerns about the quality of the River Stour, including specific concerns about the section downstream of Bybrook WWTW to Wye. In the past, the Environment Agency put Bybrook WWTW on formal monitoring when it was found to be in breach of its discharge on volume. However, Sean Furey informed the Committee, '*better housekeeping by Southern Water [has] brought the works back within its consented limits*'²²². Impacts attributable to high levels of pollutants in the Stour were highlighted to the Committee by other witnesses (as shown elsewhere in this report), but these impacts may not all be due to the operation of Bybrook. Upstream of Ashford, river water quality is adversely affected by the poor performance of Lenham Sewage Treatment Works, but proposals to install phosphate stripping at Lenham STW were not accepted for OFWAT funding at PR04²²³. Pressure is also placed on the river by diffuse agricultural pollution²²⁴.

(2) For the forthcoming AMP period (2005-10), Southern Water have plans for a first phase in upgrading Bybrook's facilities, which have already been approved by OFWAT, and are listed with their costs below:-

-	an increase WWTW capacity to 24,000 m ³ per day (DWF)	£9.3m
-	strategic trunk sewers	£4.3m
-	enhanced sludge treatment (pellets)	£21.9m
-	enhanced odour control	£1.7m
-	<i>total cost of the above measures</i>	<i>£37.2m²²⁵</i> .

(3) Both capacity and standards are set to rise in the near future. Southern Water

²²¹ Ibid.

²²² Sean Furey (Environment Agency) [oral evidence, 5th July 2005]

²²³ Richard Dean & Nigel Hepworth (Environment Agency) [oral evidence, 26th July 2005]; Alan Turner (KCC) [supplementary information]

²²⁴ Alan Turner (KCC) [supplementary information]

²²⁵ John Spence & Chris Kneale (Southern Water) [oral evidence, 12th July 2005]; also Sean Furey (Environment Agency) [oral evidence, 5th July 2005].

estimate an increase in Dry Weather Flow from 18,000 m³ per day in 2005, to 26,000 m³/day by 2015 and 37,000 m³/day in 2030²²⁶. In October 2007, the standards set for the works' operation will be tightened to 30/20SS, 20/10 BOD, 7/3 NH₃, 1P²²⁷. However, when asked what the EU Water Framework Directive would mean for Southern Water, John Spence (Wastewater and Environment manager) responded that it was difficult to say what standards would be set²²⁸. For the Committee, this uncertainty reinforces the need for their previous recommendation that the water industry to be given clarification as soon as possible by DEFRA as to the technical standards for implementation of the Directive in England and Wales. This information would benefit companies and regulators, since they could take its requirements and implications into full account in infrastructure development, upgrades and forward planning.

(4) The Ashford Integrated Water Management Study has been considering ways to accommodate an increase in the output of wastewater from Ashford, and treat and dispose of it in a sustainable manner, particularly with regard to the capacity of the Stour to accept discharge²²⁹. The proposed strategy options brought forward through the consultants' draft final report are:-

- Treat wastewater at Bybrook to the highest possible standards using best available technology
- Develop capacity to use treated effluent to irrigate biofuel coppice²³⁰.

(5) The Select Committee particularly welcomes the innovative proposal for biofuel coppice to be used as a natural filter to polish wastewater before it is released to the Stour. This option complements an Ashford's Future plan to introduce coppice CHP²³¹. The use of excess nutrients in wastewater to feed a renewable energy source offers an opportunity for Ashford to pioneer a method of addressing two environmental problems - effluent treatment and carbon emissions.

(6) The continuing use of existing technology at Bybrook has been identified during the study as the solution for wastewater treatment and disposal that carries *'the lowest risk to the environment'* and is the *'most straightforward to implement'*. Nevertheless, it is admitted that there is a risk of *'gradual water quality deterioration unless there are long term (25 year min.) plans agreed between Southern Water, EA and OFWAT'*²³².

(7) While the Committee accepts that the technology at Bybrook is 'tried and tested', previous volume consent failures and current concerns regarding the impact of effluent pollutants, pH and temperature on the Stour suggest that use of Bybrook to service a growing population **must** be undertaken with absolute assurances that, over the next twenty-five to thirty years, the funding for capacity expansion and

²²⁶ John Spence (Southern Water) [Bybrook presentation, 26th July 2005].

²²⁷ Ibid.

²²⁸ John Spence [oral evidence, 12th July 2005]

²²⁹ Other possibilities considered included discharge to the River Beult, to the Royal Military Canal, and discharge to the sea: from supplementary information provided by Alan Turner (KCC).

²³⁰ As set out in *Ashford Water* newsletter, issue 14 [July 2005], p.7.

²³¹ Ibid.

²³² Ibid.

quality upgrades will be readily available. Information received by the Committee indicates that the timing of the 2005-10 upgrade programme for Bybrook has been driven by OFWAT processes not in synchronisation with the IWMS²³³. Yet Bybrook seems increasingly likely to play a part in the resulting water management strategy. As such, it would seem reasonable to expect enhancements, which will enable it to play its part effectively, to be carried out to that strategy's timings. Having addressed questions about the short-term nature of price reviews set alongside the need for long-term planning in the water industry, OFWAT responded to the Committee that *'we set price limits within a long-term context. However, we will be consulting later this year on the period between review periods, and if better account can be taken of the long-term nature of this industry'*²³⁴. Bill Murphy, KCC's Head of Planning Applications, told the Committee that it would be preferable if companies such as Southern Water could plan over a twenty-year timescale²³⁵.

Recommendation 14

The Select Committee would urge OFWAT (and its successor as the economic regulator) to give greater long-term financial security, through a revised Price Review process, to water companies' plans for long-term enhancement of their services. The economic regulator is also asked to consider how the process and timing for approval of water companies' asset management plans could be made more flexible, to allow greater synchronicity with local development frameworks and with actions identified through area projects such as the Ashford IWMS.

(8) Kent County Council's Planning Applications Group have a statutory role to play regarding all types of waste treatment and disposal, including wastewater treatment and disposal. The County Council can influence planning for wastewater treatment and disposal as a plan making and development control authority for waste, including sewerage matters²³⁶. The Kent Waste Development Framework, which is currently in development for adoption in 2008, will include a specific document on timetabling for wastewater²³⁷.

(9) The question of timetabling and funding for wastewater infrastructure once more highlights the issue of developer contributions. As was seen earlier in this report, in PR04 OFWAT have made assumptions about the level of contributions which water companies should be able to access²³⁸; for wastewater infrastructure development, Southern Water's representatives told the Committee that *'OFWAT's assumption was that the company could recover the capital [it had invested] through Section 106 agreements; the customers' contribution would be fairly small'*²³⁹.

²³³ Alan Turner (KCC) [supplementary information]

²³⁴ Nicola Simpson (OFWAT) [written evidence].

²³⁵ Bill Murphy (KCC) [oral evidence, 5th July 2005]

²³⁶ Bill Murphy, Head of Planning Applications Unit (KCC) & Leigh Herington, Divisional Director and County Planning Officer (KCC) [oral evidence 5th July 2005].

²³⁷ Bill Murphy (KCC) [oral evidence, 5th July 2005]

²³⁸ Nicola Simpson (OFWAT) [written evidence]

²³⁹ John Spence & Chris Kneale (Southern Water) [oral evidence, 13th July 2005].

However, one developer highlighted a potential problem with over-reliance on developer contributions:-

*'Developer contributions fund a package of measures such as education, libraries, off-site road improvements etc. The size of the purse is development-related, and an increase in money for water would mean a reduction elsewhere'*²⁴⁰.

5.3 Diffuse Pollution: Run-Off

(1) In the section of this report examining the current state of the Stour, it was pointed out that effluent output by wastewater treatment was not the only means by which pollutants may be introduced into the river. A matter of concern is diffuse urban and agricultural pollution through **run-off**.

Urban Run-Off

(2) The Committee received evidence stating that controlling run-off from urban areas could become an increasing problem for Ashford, as growth and development continue and permeable surfaces are replaced with roofs, with hard-standing and with road surfaces: *'run off from roads, people washing their cars, litter, spills, commercial activity will all increase'*²⁴¹. In extreme weather scenarios, rainfall run-off could cause flooding. There are means for addressing this problem; for example, the employment of rainwater harvesting systems, as suggested earlier in this report, would make constructive use of water that otherwise would have contributed to run-off²⁴².

(3) One of the methods most frequently suggested for addressing the problem of run-off in urban areas is through the creation of **sustainable drainage systems** (SuDS)²⁴³. *Kent Design* promotes such systems:-

*'New development should allow sufficient natural drainage to prevent depletion of the local water table. Permeable surfaces should be used for large areas such as car parks. Storm water control systems can be used in these areas by providing a sub-system below the surface which captures and slowly releases rainfall into the ground, or it can be pumped out for re-use'*²⁴⁴.

(4) An excellent example of this type of system can be seen at Singleton Lake, where Ashford Borough Council and Kent County Council bought the land and installed a large SuDS feature²⁴⁵. Ashford's underlying geology means that north of the M20, SuDS would probably employ infiltration through permeable rock to

²⁴⁰ Tony Lee (Bovis Homes) [written evidence].

²⁴¹ Sean Furey (Environment Agency) [written information supplementing written evidence, 5th July 2005].

²⁴² See above; Alan Turner (KCC) [written information supplementing written evidence, 5th July 2005].

²⁴³ Some witnesses called these Sustainable Urban Drainage Systems – the acronym remains the same.

²⁴⁴ *Kent Design Guide* consultation draft (May 2005), para 7.47.

²⁴⁵ Ted Craker, Flooding Manager (Ashford Borough Council) [oral evidence, 12th July 2005].

encourage groundwater recharge; south of the motorway, clay soil means that detention systems will be needed, *'but these can also have benefits in terms of reducing diffuse pollution and increasing habitat and landscape value'*²⁴⁶. SuDS may need to be 'over-engineered' to prevent problems downstream of Ashford²⁴⁷.

(5) The Committee would broadly welcome the enforcement of a requirement for SuDS in all new developments. However, the latest steer from the IWMS suggests that careful arrangements would need to be made for the adoption and management of the drainage system²⁴⁸. Representatives of Southern Water stated that since SuDS *'would not fall under legislation as public sewerage but would be owned by residents, Southern Water had concerns that they were to be properly maintained'*, and where capital would be raised if they needed to be altered in future²⁴⁹.

(6) Another option to reduce run-off, which has also been put forward for consideration by the IWMS consultants, is green roof technology. This has the benefit that it can be used in town centres, where there may not be sufficient space to develop other SuDS measures²⁵⁰. By capturing rainwater and filtering it through the roots of specialist plants, rather like a mini-reedbed or coppice, the system enables rainwater to be used for non-potable purposes. The IWMS consultants suggest that this technology could be used for large public and commercial buildings; for private developments, the challenge would once again be to make firm arrangements for the adoption and maintenance of the roof. The Select Committee has already recommended that further research should be carried out into the potential uses of green roof technology.

Flooding

(7) It has not been in the remit of this Committee to look specifically at the question of flooding in great detail, but it is impossible to consider the water system around Ashford without flooding in mind. If urban development creates an increase in the area covered by impermeable surfaces, and measures such as SuDS are not widely employed, then this means that there is a significantly greater chance of heavy rainfall causing flood conditions. Parts of Ashford proposed for development lie within existing floodplain – for example, parts of the proposed 'Canal District'. This town centre development has been put forward in the GADF as offering benefits: the aesthetic improvement of the southern approach to the town, and clustered development near the town centre and railway station to create a viable public transport link and maximise walking and cycling²⁵¹. Generally, there has been a close working relationship between planners and the IWMS steering group, and the GADF and IWMS have complemented each other²⁵². However, the latest position taken by the IWMS consultants is that *'development in the 'Canal District' will require*

²⁴⁶ *Ashford Borough Council LDF – Core Strategies Preferred Options* (March 2005), p.53 Tony Lee (Bovis Homes) stated in written evidence that SuDS in the southern area required *'positive drainage with attenuated outflows, due to the clay subsoil'*.

²⁴⁷ Ted Craker, Flooding Manager (Ashford Borough Council) [oral evidence, 12th July 2005].

²⁴⁸ *Ashford Water* issue 14 [July 2005] p.8.

²⁴⁹ John Spence & Chris Kneale (Southern Water) [oral evidence, 12th July 2005].

²⁵⁰ *Ashford Water* issue 14 [July 2005] p.5.

²⁵¹ Ted Craker, Flooding Manager (Ashford Borough Council) [oral evidence, 12th July 2005]; Sean Furey (Environment Agency) [written information supplementing oral evidence, 5th July 2005].

²⁵² Sean Furey (Environment Agency) [written information supplementing oral evidence, 5th July 2005]

measures that may be better held back for mitigating the effects of climate change'²⁵³. This echoes Richard Moyses's statement to the Committee that:-

*'...building close to the river would mean the need for Flood Risk Management measures...Building close to the river has changed the nature of the river. The more hard engineering there is, the more it will change the urban river walls... The Canal District is not based on the way that rivers operate. The Canal District has water that is constant, and I don't know how you would achieve that without creating a pond. Where there is a natural system, you should work with what you have'*²⁵⁴.

Recommendation 15

The Select Committee recommends that not only flood risk implications but also the protection and enhancement of the River Stour should be taken into account in the consideration of all proposals for development in the Ashford growth area. (This recommendation supports the Committee's Recommendation III, above).

(8) The Government announced in March 2005 that it intends to prepare a revision of PPG25 – which deals with planning and flood risk – into a new style PPS, and take this out to consultation later this year. ODPM told the Committee that the Government intends to clarify the 'sequential test', strengthen requirements for flood risk assessments at all levels of the planning process and reinforce the requirement for local authorities to consult the Environment Agency on proposals in designated flood risk areas. ODPM also told the Committee that *'the Government has also signalled that it will consult on the proposition that it should introduce a flooding Direction under which authorities would be required to refer to the First Secretary of State, for him to consider whether or not to call in, proposals for major development (which would include applications for ten or more houses) which they were minded to approve, notwithstanding sustained objections on flood risk grounds from the Environment Agency'*²⁵⁵. The Select Committee awaits the Government's formal proposals with interest.

Combined Sewer Overflows

(9) Linked to flooding and diffuse pollution is an issue brought up in several hearings, regarding the permitted discharge of storm water from Combined Sewer Overflows (CSOs), including a level of imperfectly treated effluent, into the Stour. It was felt by the Committee that queries regarding the frequency with which such a discharge has been permitted in the past, and may be permitted in future, did not receive a satisfactory answer. This may partly be due to the fact that *'only more recent discharge consents (1990s onwards) for CSOs require the monitoring and reporting of storm events as a condition of consent'*²⁵⁶.

²⁵³ Ashford Water newsletter, issue 14 [July 2005] p.5.

²⁵⁴ Richard Moyses (Kent Wildlife Trust) [oral evidence, 8th July 2005].

²⁵⁵ Mel Lea (ODPM) [written evidence]

²⁵⁶ Richard Dean & Nigel Hepworth [written information supplementing oral evidence, 26th July 2005]

(10) However, Southern Water did inform the Committee that the consent for such discharges generally set out the requirements for:-

- the amount of flow that needs to be retained in the system (pass forward flow) before spills can occur
- whether the spills need to pass through a screening device (and if so, the spacing of those screens)
- whether the storm flows need to be stored prior to spilling (this effectively limits the number of spills)²⁵⁷.

(11) There are 22 CSOs in the Ashford catchment. The Committee received assurances from the Environment Agency and from Southern Water that those six CSOs which were identified as unsatisfactory in Ashford, under the Urban Waste Water Treatment Regulations (UWWTR) had been improved during the AMP3 (2000-05) period²⁵⁸. The Committee heard that redevelopment of Ashford town centre offers an opportunity to replace combined sewers, where possible, with separate storm and foul water sewers, thus reducing the risk of storm overflows²⁵⁹. However it also heard that the Environment Agency has concerns that this rarely happens, and that existing CSOs will be allowed to deteriorate in performance until unacceptable impacts are detected – only when the Agency can demonstrate that a CSO is unsatisfactory can funding for improvement be sought through the Price Review process²⁶⁰.

Recommendation 16

The Committee recommends that separate storm and foul sewerage should be installed in place of CSOs, as and when redevelopment work takes place in the vicinity. It also recommends that OFWAT (and its successor as the economic regulator) should ensure there are financial means to fund the replacement of CSOs before unacceptable impacts are detected.

The Committee also recommends that the Environment Agency should be required to advise the public through posting of notices and through public journals of all untreated or unsatisfactorily part-treated discharges – both licensed and unlicensed - of sewage and effluent into the sea, watercourses or over land. A record of such discharges should be maintained and be available to members of the public.

Agricultural Run-Off

(12) As well as the problems caused by an increase in the amount of land covered by impermeable surfaces in urban areas, there is also evidence to suggest that some agricultural practices – for example, ploughing in line with slopes, and planting up to

²⁵⁷ John Spence (Southern Water) [supplementary information].

²⁵⁸ John Spence (Southern Water) [supplementary information]; Sean Furey (Environment Agency) [supplementary information].

²⁵⁹ Sean Furey (Environment Agency) [supplementary information]

²⁶⁰ Richard Dean & Nigel Hepworth [written information supplementing oral evidence, 26th July 2005]

the edge of fields that border watercourses - may contribute to the problem of run-off. The effects of agricultural run-off include soil erosion, siltation of watercourses and chemical and nutrient pollution, collectively known as diffuse pollution²⁶¹. Estimates of agricultural contribution to phosphate levels in watercourses are approximately 50%²⁶². The impact of the Water Framework Directive and the requirement for all surface waters to reach 'Good Ecological Quality' undoubtedly means that diffuse pollution from all sources, including agricultural, must be reduced as far as possible.

(13) The Committee received the following information regarding existing action to encourage sustainable farming practices. Farmers' agricultural practices are formally regulated by the Environment Agency in regard to licences, consents and exemptions, and DEFRA in regard to qualifications for Common Agricultural Policy (CAP) payments. In addition, major customers (e.g. supermarkets) may have their own requirements²⁶³. The National Farmers' Union told the Committee that, as part of its plan to meet the objectives of the EU Water Framework Directive, the Government has implemented a Catchment Sensitive Farming (CSF) project, providing free advice to farmers on reducing diffuse pollution, including risk assessment on a field scale, and advice on cultivation methods and timings, and crops. Other voluntary projects exist giving similar advice. The Voluntary Initiative (VI) provides training, inspection and registration to encourage best practice in use of chemicals. The UK Nitrate Vulnerable Zone action programme, enforced by the Environment Agency, regulates the use of fertilisers and manure on vulnerable land (much of the Stour Catchment is classified NVZ)²⁶⁴. Measures available under the Entry-Level Stewardship (ELS) of the new agri-environment scheme Environmental Stewardship, and under the Single Payment Scheme cross-compliance requirements as part of CAP reform also encourage more sustainable management of assets, for example, horizontal ploughing, or leaving buffer strips of unplanted, unsprayed ground between the main crop and watercourses²⁶⁵. However, because of the nature of diffuse pollution, it is difficult to quantify benefits from any or all of these schemes to the environment.

(14) The draft IWMS includes an option to promote best land and water management through a local land management group (for example, a 'Stour Land Management Group')²⁶⁶. As stated previously in this report, the Committee received evidence suggesting that Kent County Council could have a role in co-ordinating work on land management²⁶⁷. The Committee considers that this might best be done through the Stour Catchment group proposed in Recommendation II above.

²⁶¹ NFU [written evidence].

²⁶² Alan Turner (KCC) [written information supplementing written evidence, 5th July 2005]

²⁶³ Sean Furey (Environment Agency) [written information supplementing oral evidence, 5th July 2005]

²⁶⁴ *Stour CAMS*; Richard Dean & Nigel Hepworth [written information supplementing oral evidence, 26th July 2005]

²⁶⁵ NFU [written evidence]; Sean Furey (Environment Agency) [written information supplementing oral evidence, 5th July 2005]

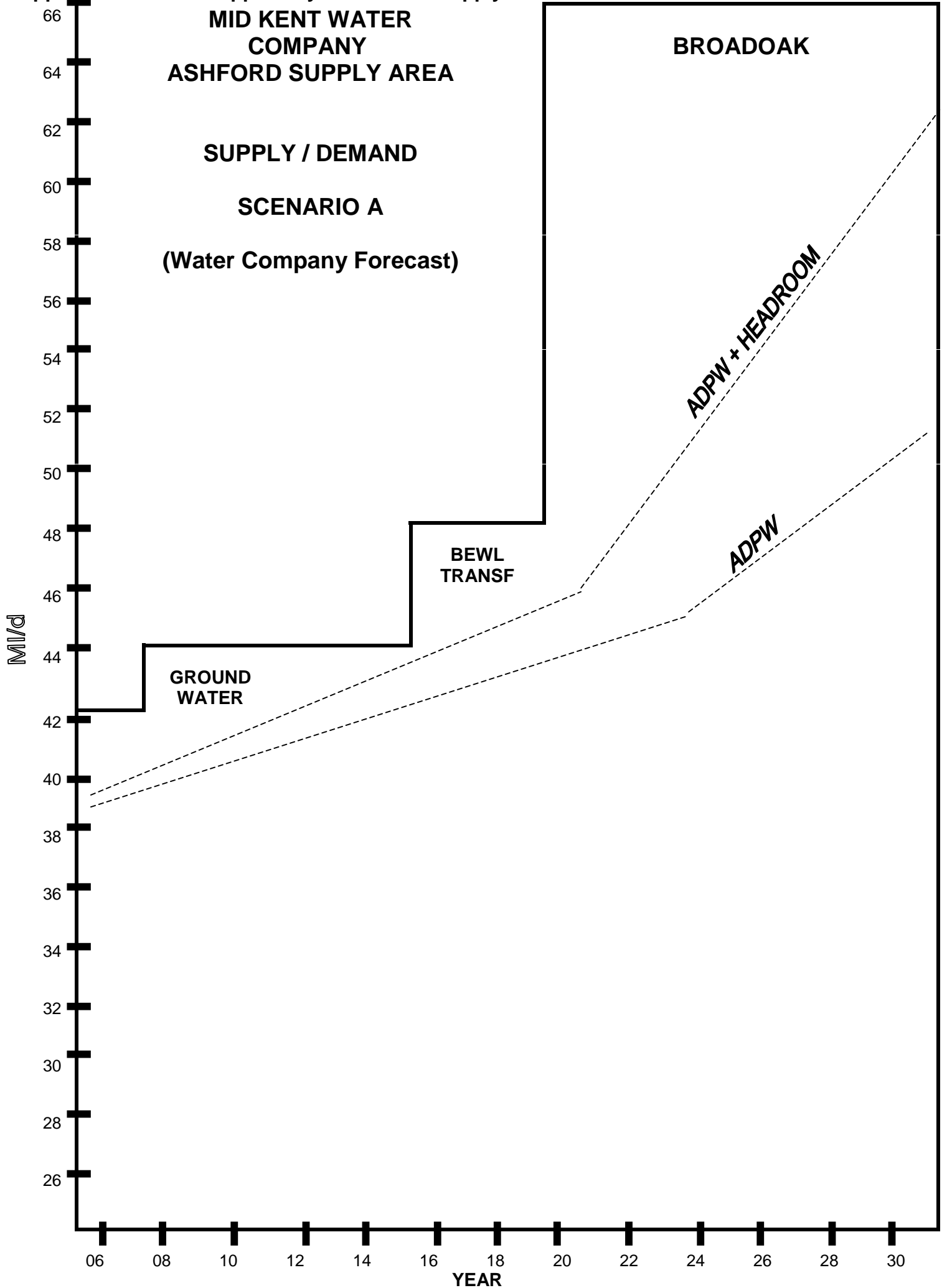
²⁶⁶ *Ashford Water* newsletter, issue 14 [July 2005] p.8.

²⁶⁷ Alan Turner (KCC) [written information supplementing written evidence, 5th July 2005]

7. Conclusion

- 7.1 Several dominant themes have emerged from the Final Report of Kent County Council's Select Committee on *Water & Wastewater, particularly in Ashford*.
- The Committee has frequently noted its concern at a lack of clarity regarding projections for population and demand, and regarding future regulatory requirements, such as the Water Framework Directive, considering the impact these factors could have on planning for water system management and investment to benefit Ashford.
 - The Committee has also been concerned that the phasing and funding of water infrastructure development is not necessarily synchronised with or linked to the pace of growth in Ashford, but to water industry funding mechanisms.
 - The Committee wishes to encourage all those with an interest in Ashford's growth and the preservation and enhancement of its environment to work still more closely together to create a community where development takes account of the needs of people and of the environment. These stakeholders include central Government, local authorities, water companies and industry regulators, developers, community leaders, farmers and environmentalists. Such key stakeholders should work together to ensure that Ashford is a place where potable water is used wisely and wastewater is treated and disposed of sensitively.
 - The Committee noted a lack of information concerning the licensed and unlicensed discharge of untreated sewage into watercourses.
- 7.2 The overall impression received by the Select Committee is that plans for demand management, water resource development and wastewater disposal provision should be more closely linked to plans for growth, so that one takes full account of the other. The question that appears to be being asked is the capacity of the environment to meet the needs of growth and development in a tight timescale. The Select Committee feels that if development should be to the detriment of the River Stour, then this should be raised at the highest level as a serious problem.
- 7.3 Although the remit given to this Select Committee has been to consider water and wastewater particularly in Ashford, the Committee firmly believes that the concerns it has highlighted in this report, as a 'pilot', could be equally relevant to other areas in the South East of England. As such, the Committee wishes to highlight the wider implications of its findings for the whole South East region.

Appendix 1: Tables supplied by the CPRE – Supply/Demand Scenarios

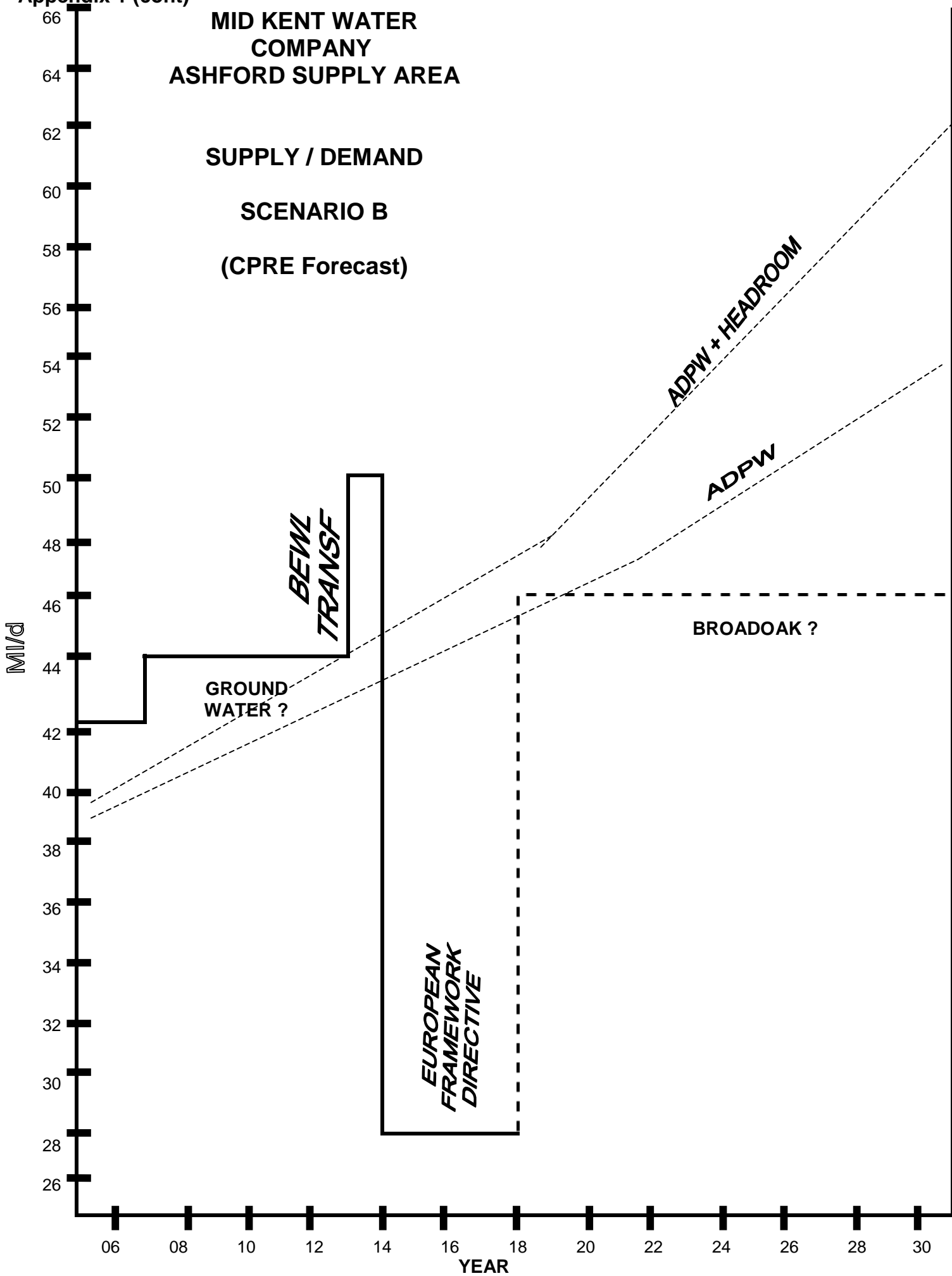


**MID KENT WATER
COMPANY
ASHFORD SUPPLY AREA**

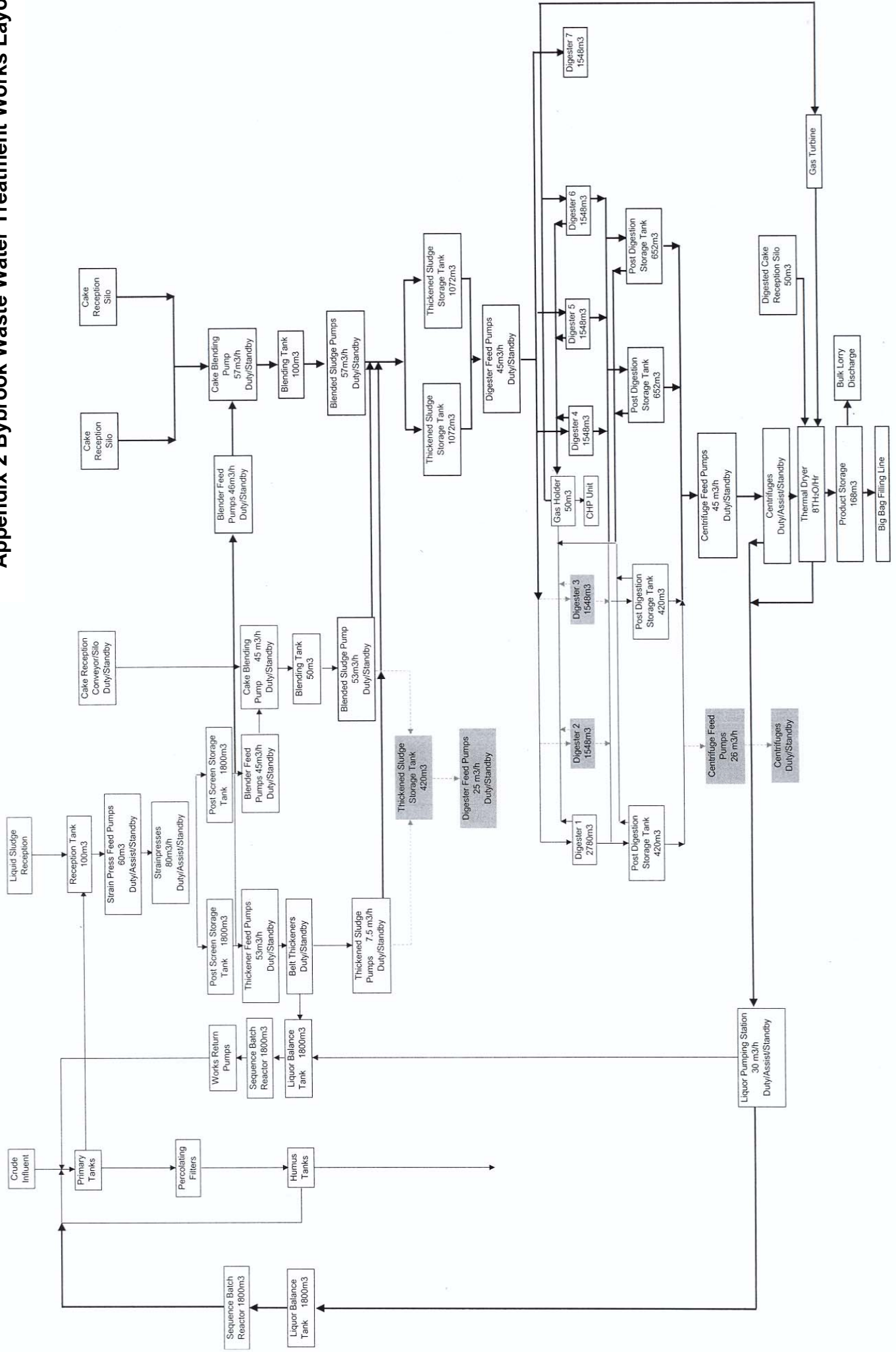
SUPPLY / DEMAND

SCENARIO B

(CPRE Forecast)



Appendix 2 Bybrook Waste Water Treatment Works Layout



List of Hearings (Witnesses heard in person)

Tuesday 5th July 2005

Mr Sean Furey, Project Manager: Ashford Integrated Water Management Study (Environment Agency)

Mr Alan Turner, Principal Officer: Regeneration & Projects (Kent County Council)

Mr Leigh Herington, Divisional Director & County Planning Officer (Kent County Council)

Mr Peter Davis, Regeneration & Projects Manager (Kent County Council)

Mr Bill Murphy, Head of Planning Applications Unit (Kent County Council)

Friday 8th July 2005

Mrs Caroline Field (Moat Housing Group)

Mr Graham Warren (Campaign to Protect Rural England)

Mr Richard Moyse (Kent Wildlife Trust)

Tuesday 12th July 2005

Mr Chris Kneale, Planning Manager, and Mr John Spence, Wastewater & Environment Manager (Southern Water)

Mr Steve Boxall (Ashford's Future Strategic Partnership Delivery Board)

Mr Simon Cole, Policy Manager and Mr Ted Craker, Flooding Manager (Ashford Borough Council)

Mr Peter Bracher, Secretary and Mr Anthony Falcon, Member (Stour Fishery Association)

Wednesday 13th July 2005

Mr Paul Donnelly (Crest Nicholson Plc)

Mr Phil Sivell (Surrey County Council; UK Climate Impacts Programme and UK Inter-regional Climate Change Group)

Tuesday 26th July 2005

Mr Richard Dean, Water Quality Team Leader and Mr Nigel Hepworth, Regional Resource Planning Officer (Environment Agency)

Mr Trevor Bishop, Regulatory Manager and Mr Paul Seeley, Asset Director (Mid-Kent Water)

Mr Gavin McHale, Head of Operations (Folkestone & Dover Water)

Guide to the most common acronyms and abbreviations used in this Report

ABC	Ashford Borough Council
BOD	Biological Oxygen Demand
CAMS	Catchment Abstraction Management Strategy
CPRE	Campaign to Protect Rural England
CSO	Combined Sewer Overflow
DEFRA	Department for Environment, Food & Rural Affairs
DWF	Dry Weather Flow (discharge from wastewater treatment works)
DWI	Drinking Water Inspectorate
EA	Environment Agency
FDWS	Folkestone & Dover Water Services
GADF	Greater Ashford Development Framework
GOSE	Government Office for the South East
IDB	Internal Drainage Board
IPPR	Institute for Public Policy Research
IWMS	(Ashford) Integrated Water Management Study
KCC	Kent County Council
KWT	Kent Wildlife Trust
LDF	Local Development Framework
MKW	Mid-Kent Water
MI/d	Megalitres per day
ODPM	Office of the Deputy Prime Minister
OFWAT	Office of Water Services
PCC	Per Capita Consumption (of potable water)
PPG	Planning Policy Guidance Note
PPS	Planning Policy Statement
RPG	Regional Planning Guidance (e.g. RPG9)
RQ/RQO	River Quality/River Quality Objective
RSS	Regional Spatial Strategy
SEEDA	South East England Development Agency
SEERA	South East England Regional Assembly
SuDS	Sustainable Urban Drainage Systems/Sustainable Drainage Systems
STW	Sewage Treatment Works
SWS	Southern Water Services
UKCIP	UK Climate Impacts Programme
UKWIR	UK Water Industry Research
WFD	(EU) Water Framework Directive
WWTW	Wastewater Treatment Works