

## Water resources for the future

Annual review 2003



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EA - WATER RESOURCES



# Summary

In March 2001, the Environment Agency published *Water Resources for the Future: A Water Resources Strategy for England and Wales*. At the time, we stated our intention to publish an annual bulletin to report on progress made against the strategy. This is the second bulletin. In it, we look at the wider issues considered in the 2001 strategy. We also review the Agency's work in securing the sustainable development of water resources.

The strategy's vision for the next 25 years is:

Abstraction of water that is environmentally and economically sustainable, providing the right amount of water for people, agriculture, commerce and industry, and an improved water-related environment.

Over the past year, the Agency continued to develop its programme of work on each of the strategy actions. Our work, along with that of others, provided additional information that helps us better to understand some aspects of water resources management considered by the strategy.

- In November 2002, the Department for Environment, Food and Rural Affairs (Defra) published '*Directing the Flow*'. This sets out the Government's long-term priorities for water in England. It focuses on our use of freshwater and the inland water environment. *Directing the Flow* identifies the priorities that will improve our understanding of how water policy needs to develop in the future.
- The Water Bill was included in the Queen's Speech in November 2002. It was introduced into the House of Lords in February 2003. When the Bill receives Royal Assent, the Agency will finalise and implement guidance to support the new provisions. We will work closely with affected abstractors and stakeholder organisations. We believe that the new legislation will result in a more efficient regulatory regime. It will also encourage more sustainable use of water resources and lead to a more effective planning system.
- We worked with Offices of Water Services (Ofwat), Defra, the National Assembly for Wales (NAW) and water companies to prepare for the fourth periodic review of water company prices (AMP4). In February 2003, we published a new version of our *Water Resources Planning Guideline*. This provides water companies with a framework for developing and presenting their water resources plans. We also provided information to help them include environmental improvements in those plans.
- Earlier this summer, we reported to Ministers on our second review of water companies' drought plans. We said that all companies have plans in place and that good progress has been made. Most companies' plans are better than before. We also reviewed and updated our own drought plans.
- The Agency and other organisations promoted many water demand management initiatives. We presented our third Agency Water Efficiency Awards, supported by the National Farmers' Union (NFU), Envirowise, and Ofwat, in June 2003. These awards highlight the good work in this area. They reward and celebrate good practice across all sectors.
- We are working with the Government – through the Office of the Deputy Prime Minister (ODPM) – to advise on how water efficiency can be incorporated in the design of developments as part of the 'Sustainable Communities Plan' for 200,000 new homes in the South East.

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Over the next year, we intend to carry out further work on our strategy implementation programme. We will also:

- review water companies' water resources plans;
- report to Ministers on the issues raised by these plans as part of the fourth periodic review of water company prices;
- review the Agency's drought procedures to ensure that we deal with droughts consistently and effectively across England and Wales;
- publish a consultation response document summarising the views we receive on licence trading;
- prepare final proposals by October 2004 to explain how we will facilitate water rights trading under the expected new legislation;
- continue to work with Defra and the Welsh Assembly Government to review the Agency's abstraction charging scheme;
- publish a two-stage consultation that outlines proposals to recover the costs of compensation that arise as a result of variation or revocation of some abstraction licences.

# 1 Introduction and background

Water is essential for the natural world and human use. We use it in our homes and gardens, in commerce and industry, and in agriculture. Water is a renewable but valuable natural resource. The way we use it impacts directly on the environment. It is essential that we plan carefully how we use water resources now, and in the future.

The Environment Agency is the statutory body with a duty to secure the proper use of water resources in England and Wales. In March 2001, we published *Water Resources for the Future: A Water Resources Strategy for England and Wales*. This strategy looks 25 years ahead. It considers the needs of both the environment and society. The strategy is robust enough to provide a secure way forward while protecting the water environment and contributing to sustainable development. The strategy's vision is:

Abstraction of water that is environmentally and economically sustainable, providing the right amount of water for people, agriculture, commerce and industry, and an improved water related environment.

The strategy also contributes to a number of themes in the Agency's Environmental Vision. These include:

- a better quality of life;
- an enhanced environment for wildlife;
- a greener business world;
- wiser, sustainable use of natural resources;
- improved and protected inland and coastal waters;
- limiting and adapting to climate change.

*Making it Happen*, the Environment Agency's corporate strategy, published in July 2003, sets out how the Agency will drive towards that vision of an enhanced environment and a better quality of life for all. Our strategy for water resources contributes significantly to these aims. It also provides a framework to ensure that our local water resources activities contribute towards our vision for the future.

Our national strategy comprises water resource strategies for our seven regions and Wales. For each region and Wales, our recommendations consist of a combination of improvements to the water environment and enhancements to public water supplies. They are based on developing resources and working on existing systems. To complement our recommendations, we identified 30 actions the Agency needs to initiate with other organisations on specific issues to secure the sustainable development of water resources. A summary of the national actions appears at the end of this review.

When the water resources strategy was published, we stated our intention to produce an annual bulletin to report on progress. This is the second of those reviews. It looks at progress on the wider water resources issues considered in the strategy (Section 2). It also examines the work that the Agency has been carrying out to secure the sustainable development of water resources (Section 3). A summary of future activities is given in Section 4. Contact details for further information appear in Section 5. In the future, we will review our national strategy and the strategies for our seven regions and Wales to take account of new information or circumstances that arise. Until then, we will continue to publish an annual update.



## 2 Progress

Just over two years ago, we published our strategy, looking 25 years ahead. Over the past year, the Agency has continued to develop its programme of work on each of the strategy actions. Our work, along with that of others, provided additional information that helped us better to understand some aspects of water resources management considered by the strategy. This section of the review looks at this information and at new work being carried out. We focus first on policy and legislation. Second, on work associated with water resources planning. Third, on demand management followed by climate change. We conclude with research and development.

### 2.1 Directing the Flow

In November 2002, Defra published '*Directing the Flow*'. The document sets out the Government's long-term priorities for water in England. It focuses on our use of freshwater and of the inland water environment. *Directing the Flow* also covers estuaries and coastal waters. It reports on the substantial improvements made in the quality of water in recent years.

The document stresses that water in England policy needs to be clearly grounded in the Government's commitment to sustainable development, covering economic, environmental and social aspects. This means:

- recognising the benefits of water to people, both now and in the future, to use and enjoy;
- respecting environmental limits: obtaining better resource productivity by using water more efficiently, both in the home and in business;
- abstracting neither beyond the rate of replenishment nor causing avoidable damage to the water environment through our use;
- taking a wide view of both the costs and benefits of changes to water policy, including taking full account of environmental impacts;
- considering more fully the effects of water policies on other sectors of the economy and how these sectors can contribute to water objectives;
- considering the effects of our policies on different social groups, including vulnerable groups;
- understanding clearly how the application of policies needs to vary in different parts of the country.

The Agency's water resource strategy already contributes towards this commitment to sustainable development. We will continue to work with Government on the priorities highlighted in the document.

### 2.2 Enactment of the Water Bill

The Water Bill was included in the Queen's Speech in November 2002 and was introduced into the House of Lords in February 2003. Once the Bill receives Royal Assent, the Agency will finalise and implement guidance to support the new provisions. We will work closely with affected abstractors and stakeholder organisations. We expect implementation of the full provisions of the Bill to take some time.

We believe that the Bill will bring three main benefits:

#### *A more efficient regulatory regime*

- Deregulation and simplification for small, mainly agricultural abstractions. Up to 25,000 licences will no longer be required. This proposal is supported by the opportunity to vary the thresholds of local exemptions and create a register of small abstractions. It will help reduce the red tape for small-scale water users (mainly farmers);
- Regulation of significant abstractions that are currently exempt from licensing. These include: trickle irrigation systems for crops, de-watering of mines and quarries, transfers into navigation systems and transfers into internal drainage districts. This legislation will bring abstraction for all forms of irrigation and all significant water movements under licensing control. As a result, about 2,000 to 3,000 abstractions will be brought into the licensing system. This will enable us to manage water resources more effectively by ensuring that all significant activities influencing the availability of water are undertaken in a sustainable manner.

#### *More sustainable use of water resources*

- A requirement for all new water abstraction licences to be time-limited. This will allow greater management flexibility in response to varying pressures such as climate change. In the longer term, it heralds a move away from permanent entitlements;

- Provisions to require water companies to conserve water. The Government has already strengthened these during the Bill's passage through Parliament. Amendments will include a water conservation duty on all public authorities, and specific emphasis on water efficiency as part of the Agency's duty to secure the proper use of water resources;
- The introduction of competition within the water industry for large water users;
- Measures to facilitate the trading of water rights.

#### ***A more effective water resources planning system***

- An obligation on water companies to develop statutory drought and water resources plans. The Bill will reinforce the importance of these plans. The Bill will also require plans to be submitted to Government, rather than the Environment Agency as at present. The Agency, though, will still play a key role advising Government on these plans;
- New Agency powers to facilitate the transfer of abstraction licences between water companies and also to encourage proposals for bulk water transfers. There will also be new powers to enter into water resource management arrangements with abstractors at a local level. These powers will encourage more efficient allocation of scarce resources.

### **2.3 Water rights trading and competition**

Our strategy identified that water rights trading could provide opportunities to improve the environment.

In December 2002, the Agency published an interim leaflet on licence trading and sent it to 20,000 abstraction licence holders. We also developed guidance for Agency staff on how to deal with enquiries and applications arising from water rights trading proposals.

In July 2003, we published a consultation document on water rights trading. The output from a stakeholder workshop in October contributed to this. The document considers how trading may be facilitated by the proposed changes to the abstraction licensing system, contained in the Water Bill, while ensuring that the environment is protected. The consultation raises various issues that are relevant to the facilitation of competition between water suppliers. Trading will be one of the means available for suppliers to secure licences by competition in areas where resources are at a premium. The consultation period will close in November 2003.

The Agency will also agree a memorandum of understanding with Ofwat. This will set out the respective roles of each organisation in relation to water rights trading and competition under the proposed licensing system.

In November 2002, Water Grid Ltd was set up as a joint venture between the public and private sectors involving British Waterways, Anglian Water Group (AWG), Bristol Water Holdings, and Partnerships UK. The enterprise intends to provide opportunities to supply water to industrial, commercial and property development customers using the British Waterways canal network to transfer water resources from one part of the country to another. In time, this could provide further opportunities for competition.

The Agency is neutral on how competition in the water industry should develop provided that it does not have an adverse impact upon sustainable water resources management and the environment.

### **2.4 Catchment Abstraction Management Strategies**

The first of the Agency's 129 Catchment Abstraction Management Strategies (CAMS) was published in April 2003, after two years of development (including public consultation). CAMS are local level strategies that make information on water resources management and licensing practices more available to the public. CAMS ensure that the balance between abstractors, other water users and the environment is considered in consultation with the local community and other interested parties.

Of the 129 CAMS across England and Wales, 126 are catchment CAMS. Three corridor CAMS cover the Rivers Severn, Thames and Trent. By April 2004 about 20 CAMS will have been published.

### **2.5 Hydropower**

After working closely with planning authorities and conservation organisations, our strategy identified actions the Agency needs to take to prevent conflicts or duplication between regulators of hydropower schemes. In recent years, interest in the development of small-scale hydropower schemes has increased. This is largely in response to Government initiatives encouraging the greater use of renewable energy sources. It has resulted in increasing pressures on the Agency and planning authorities, together with the main regulators of hydropower proposals, to grant the necessary permissions, consents, and licences.

In June 2003, we produced a revised hydropower manual to guide Agency staff dealing with proposals for small-scale hydropower schemes. The manual includes the Agency's position statement on hydropower, updated guidance on the



environmental assessments of new schemes and environmental impact assessment processes. It will help ensure that new proposals are dealt with consistently across the Agency. It will also help identify inappropriate schemes as soon as possible. The Agency strongly supports Government targets for green energy. We take a positive view of reasonable, well-designed, sustainable proposals.

## **2.6 National Environment Programme**

Water companies will spend £5.3 billion on nearly 7,000 projects to improve rivers and coastal waters in England and Wales in the five years from April 2000 to March 2005. They will also spend around £400 million investigating and/or providing solutions in 116 water resources related sites as part of their improvement programmes. This will protect more than 100 important wildlife sites. This investment programme is known as the National Environment Programme (NEP). It includes schemes in the water companies' business plans and water resource plans prepared during the third periodic review (AMP3) of water prices. The Government agreed these schemes after discussions with the Environment Agency, water companies and Ofwat.

Since our first annual review of water resource strategies, water companies across England and Wales have made significant progress towards delivering the programme of improvements funded by the third periodic review. Examples of these improvements include:

### ***The East Devon Pebblebed Heaths Implementation Scheme in South West Region***

This heathland is designated under the Habitats Directive. Wetlands within the heathland support the rare southern damselfly and other species. South West Water owns two intakes that abstract water from two critical headwater reaches of the Yettington Stream within the site.

The company undertook an investigation monitored by both the Agency and English Nature. As part of this, abstraction ceased for a number of weeks in late summer 2002, to assess its impact.

The company then considered possible solutions. It agreed to the scheme preferred by English Nature and the Agency. This involved shutting down the intakes, undertaking non-invasive work on-site to seal the intakes off without disturbing the site itself, and applying for revocation of the licence that covers these two intake abstractions. Thanks to the co-operative approach adopted by all parties involved, the solution was implemented this year, two years earlier than anticipated.

### ***The River Dour Scheme in Southern Region***

Groundwater abstractions have significantly reduced low flows along the River Dour and some associated on-line lakes. This has resulted, in the worst case, in some river reaches drying up. As a result, limpets are now extinct within the affected reaches. Populations of brown trout and other species such as fish leeches have fallen significantly. Folkestone and Dover Water have investigated the potential for abstracting more water from lower down the catchment instead of at their current borehole sources. This revised abstraction strategy was submitted and approved by the Agency in June 2002.

Two new production wells have been drilled and tested (September to December 2002). An existing borehole, currently unused, has been developed.

The Agency has issued temporary licences for these while an operating agreement is developed. This agreement will ensure that reductions in abstraction at environmentally sensitive sites take place during periods of low groundwater.

Phase 2 of the scheme is being promoted for delivery in AMP4 so that during severe drought conditions, Folkestone and Dover Water can implement the augmentation arrangements successfully trialed by the Agency.

## **2.7 Fourth periodic review of water company prices**

In October 2002, Ofwat began work on the next periodic review of the price limits for charges by water companies for supplying drinking water and dealing with sewage. This will cover the period April 2005 to March 2010.

The Agency plays two important roles in the review. First, we advise on the schemes that we expect water companies to include in their draft environment programmes. These schemes look at ways of improving the water quality of rivers and restoring sustainable abstraction. Second, we advise Ministers on the adequacy of companies' long-term plans to balance supply and demand of water resources.

As part of the fourth periodic review process, the water companies of England and Wales developed long-term water resources plans. These set out how they intend to manage public water supplies to 2030. We agreed with Ofwat that water companies would each submit a single plan covering their water resources activities to include both water company business plans and water resource plan submissions. This will reduce the regulatory burden on water companies. The Agency will evaluate these plans. We will ensure that companies make adequate



provision for their customers' needs in a sustainable way, with proper protection for the environment. Ofwat will use information from the plans to help determine price limits for water companies.

In February 2003, the Agency published a new version of the *Water Resource Planning Guideline* (available on the Agency website) developed jointly with Ofwat. This provides a framework for a water company to develop and present its water resources plans. It builds on the version used for the third periodic review. In April 2003, a supplementary guide addressed a number of key areas. These include:

- dealing with climate change impacts on resources and demands;
- using the new methods developed and proposed by UKWIR (Uncertainty and Risk in Supply/Demand Forecasting and An Improved Method for Assessing Headroom);
- reviewing the process we used to collate target reduction affecting water company licences to achieve sustainable levels of abstraction.

The fourth periodic review process also requires water companies to submit plans that clarify what environmental improvements (or schemes) they intend to deliver. These will be included in their draft water resources plans.

In autumn 2002, the Agency produced a joint paper with English Nature and Countryside Council for Wales, *Environmental Drivers for the 2004 Periodic Review*. This identified for Ministers the current and potential future drivers for environmental improvements that may require action on water company assets during the period 2005 to 2010. Following this and advice from other regulators in the water industry on factors that may affect water company bills, Ministers in England and Wales produced separate guidance in early 2003. This informed the preparation of government policies, programmes and schemes. These in turn will guide water companies' draft business plans.

After publication of this guidance, the Agency, in conjunction with English Nature and the Countryside Council for Wales, developed an environmental programme. This lists sites where water company abstractions may be damaging the environment against a range of drivers (for example to satisfy the Habitats Directive). Ministers asked the three bodies to evaluate the scale or risk of environmental damage to each site, and the extent to which water company abstractions appear to be the cause of the damage. We did this by assigning levels of certainty.

Water companies will include these sites in their draft water resources plans and business plans.

In August 2003, water companies submitted draft water resources plans to the Agency and draft business plans to Ofwat. These plans demonstrate the potential implications on prices and (in the case of water resources) the need for new resource development or demand management schemes. The Agency is reviewing the draft water resources plans and in November 2003 will report to Ministers on the adequacy of the plans including advice on which schemes should be included in the Environment Programme.

Ministers will review our advice along with that of other regulators. Ministers will produce Principal Guidance on policies and programmes that can be expected to affect water companies in the period 2005-2010 in January 2004. This will include confirmation of the schemes that water companies will be expected to carry out over the period 2005-2010 to deliver environmental improvements. Companies will be required to provide final water resources plans and business plans in April 2004.

## 2.8 Annual review of water company water resources plans

In March 1999, as part of AMP3, all the water companies of England and Wales submitted water resources plans to the Agency. These plans set out how the companies plan to manage their water resources over the next 25 years. Ministers asked the Agency to keep these plans under annual review.

We published our third review of water company plans in December 2002. This review covered the period from April 2001 to March 2002. All the companies provided clear and helpful information broadly in line with Agency guidance. We were able to report that all the companies are actively reviewing their supply-demand balance, and that most are making good progress on their water resources plans. We also highlighted a number of issues that require further attention. In particular, water leakage had risen in a number of water resource zones over the previous year. We also reported some anomalies in the reporting of per capita water use.

The issues raised in the report demonstrate once again the value of the annual review of water company plans at a resource zone level. Ofwat has indicated that it finds the annual reviews valuable for monitoring companies' performance in delivering funded outputs. Defra and the Welsh Assembly Government expect us to continue producing these reviews.

## 2.9 Review of drought plans

Earlier this summer, we reported to Ministers on our second review of water companies' drought plans. Drought plans are an important element of prudent water resources management. They detail the operational steps that must be taken as a drought progresses. They complement the long-term strategic plans of companies and cover the range of actions necessary to deal with different drought situations. Actions range from publicity campaigns and communication strategies to customer restrictions and drought permits or orders. Companies have identified the various triggers that will lead to and initiate each action. By planning these actions in advance, there is time to consider potential impacts and mitigation measures.

In our previous report to Ministers in June 2000, we identified a number of areas in water companies' drought plans that needed improvement or further work. Good progress has been made; in general, most plans are better than before. There are, though, a number of plans with work outstanding or areas requiring improvement. We are following these up with the companies concerned.

In July 2002, we commissioned an independent review of the Agency's own regional drought plans. The review identified further work that would improve the plans. We have updated our plans in line with these recommendations, and the revised plans are available for inspection at the relevant offices. We are also reviewing our own drought procedures, to ensure that we deal with droughts consistently and effectively across England and Wales.

## 2.10 Water efficiency

The strategy takes a twin-track approach to water resource planning. It expects both water efficiency and resource development to play a significant role in securing water supplies. Over the past year, the Agency has undertaken water efficiency projects and promotional work relating to the recommendations presented in our strategy. Initiatives that have been promoted regionally are described later, in Section 3.

The Agency has been part of the Water Efficiency Quadripartite Group. Other members are Defra, Water UK and Ofwat. The paper *Water Efficiency – Moving Forward* agreed by all parties, sets out each of our respective roles to promote the efficient use of water. The actions identified by the group are, in brief, to:

- promote a prioritised research programme to develop robust data-sets and improve understanding of water saved and the durability/cost of water efficiency options;
- develop guidance that clarifies how water efficiency measures should be considered along with other supply-demand balance options in water company business plans and water resources plans;
- implement water efficiency measures that are cost-effective in comparison with other supply-demand balance options;
- agree a list of simple and common messages that can be used by all members of the group to promote a consistent message to the public.

The Water Supply (Water Fittings) Regulations have been revised to permit the modification of single-flush siphonic WC cistern to dual flush operation. This followed recommendations made by the Water Regulations Advisory Committee (WRAC). The decision to relax the Regulations was based on a request made by the Water Regulations Advisory Scheme (WRAS), on behalf of the water companies. The request drew on research initiated and part-sponsored (along with two water companies) by the Agency. Research undertaken with Southern Water indicated that the average resulting saving in toilet water use was 27 per cent.

The Agency has contributed to projects to develop benchmarks for water use in public sector buildings, hotels, offices, and some residential properties. These include:

- CIRIA (Construction Industry and Research Information Association) multi-client research and development (R&D) Key Performance Indicators project to establish benchmarks for hotels, offices and some residential properties;
- The Office of Government Commerce 'Watermark' project to identify water use benchmarks for public sector buildings;
- Environment Agency Hotels, project which has developed nine case studies from small hotels and guest-houses. The project has also provided a benchmarking tool, organised a number of seminars for the hotel sector and produced a draft product list for hotel managers. Outputs from this project will appear on the Agency's website later this year.



The Agency has also contributed to the work of the National Water Conservation Group and Defra's Market Transformation Programme for water-using appliances. We have been actively involved with Watersave. This is an academic network funded by the Engineering and Physical Sciences Research Council (EPSRC) to promote links between academics and industry on water efficiency issues. We have assisted UK Water Industry Research in the 'Quantification of the savings, costs and benefits of water efficiency' and the 'Impact of household metering on consumption' projects and surveyed the attitudes of industrial trade bodies to water efficiency.

We have been involved in several of CIRIA's R&D projects, including the 'Model agreements for sustainable water management systems' and the 'Sustainable water management and land use planning' projects. CIRIA plays an important role in the construction industry. It aims to improve the performance for all those concerned with construction and the environment.

The third Agency Water Efficiency Awards, supported by the National Farmers' Union (NFU), Envirowise, and Ofwat, were announced in June 2003. These awards recognise, reward and celebrate good practice across all sectors. We have collated the case studies from the 32 finalists into a single document to publicise examples of good practice in water use.

The Agency has published a guidance leaflet *Waterwise on the Farm* in partnership with the NFU and Linking Environment and Farming (LEAF). This provides opportunities for farmers to make practical and cost-effective adjustments to their management practices.

## 2.11 Leakage

Our strategy identified that managing leakage will play a continuing role in ensuring the security of supply over the next 25 years. The targets set by Ofwat have contributed significantly to the effective management of water resources over the past five years. Targets are based on achieving the economic level of leakage – the level at which developing a new resource would cost the same as reducing leakage by an equivalent volume.

Most water companies have made good progress in reducing leakage and are at or approaching their economic level. But figures recently released by Ofwat indicate that reported total leakage in England and Wales increased by more than 200 megalitres per day (Ml/d) in 2003. In particular, Severn Trent Water reported an increase in leakage of more than

200 Ml/d (in their region alone) by revising the assumptions used to calculate leakage.

Thames Water's leakage has also continued to rise and is of serious concern to both the Agency and Ofwat. Despite increased leakage control activity, the company's reported leakage rose by over 60 Ml/d in 2002-03 to 925 Ml/d, some 33 per cent of the water the company abstracts. The Agency and Ofwat are working with the company to address these problems, but we are disappointed about the level of progress that has so far been made. Information coming out of this work is improving our understanding of how to manage leakage.

Following the tripartite study into future approaches to setting targets for leakage, Defra, the Agency and Ofwat agreed to continue the current approach including some refinements identified as best practice in the study. For the next five years, we will use the economic level of leakage method. We intend to explore alternative methods of leakage target setting during that period.

Working together with Defra and Ofwat, the Agency has made a request to Water UK to develop a consistent set of industry-wide leakage performance indicators. Water UK has responded positively.

## 2.12 Metering

In our strategy, we said that we believe metering can contribute significantly to the effective management of water resources. In 2002, household metering increased by more than 20 per cent over England and Wales. Some water companies made substantial increases to the number of domestic customers metered. There are now nine water resource zones out of a total of 122 in England and Wales where more than 40 per cent of households are metered. Two of Anglian Water's three water resource zones have more than half of households metered. Tendering Hundred Water Services has also reached a meter penetration of 50 per cent.

Though some companies have made significant progress, there are more than 50 resource zones where metering has increased by less than two per cent. The Agency expects companies with such resource zones to take a more proactive approach and to identify opportunities to promote metering in a way that encourages customers to save water.

## 2.13 Sustainable communities

In February 2003, the Office of the Deputy Prime Minister (ODPM) published its '*Sustainable Communities Plan*'. This outlines plans for addressing the housing shortfalls in the South East. It includes

200,000 additional new homes by 2016, including growth in Ashford, the Thames Gateway, Milton Keynes and the London Stansted-Cambridge corridor.

We are examining the impacts of these proposals and have identified potential savings that may be achieved by designing water efficient homes. We will keep this work under review and will continue to work with the Government to incorporate water efficiency into the sustainable design of these new developments.

## 2.14 Climate change

Climate change is an important issue affecting water resources management over the next century. We based our analysis in the strategy on the information available from the scenarios published by the UK Climate Change Impacts Programme (UKCIP) in 1998. We concluded that, for the next 25 years, the effects could be managed within our proposed twin-track approach combining prudent demand management and the development of water resources.

UKCIP published its new climate change scenarios in April 2002. The new scenarios suggest that, by the 2080s:

- the annual average temperature across the UK may rise by between 2°C and 3.5°C, with greater warming in the South and East;
- winters will become wetter and summers may become drier everywhere, though by the 2020s, changes will still be within the range of natural variations we experience now;
- hot, dry summers will occur much more frequently than they do now.

A preliminary analysis of these results suggested that the effects can be managed within our twin-track approach.

Over the past year, further work has improved our understanding of the impact of the UKCIP 2002 scenarios. The results of a project commissioned by Defra and led by the Stockholm Environment Institute looking at the impact of climate change on the household, industrial and agricultural demand for water (CC:DEW) were published in March 2003. Nigel Arnell, working for UK Water Industry Research (UKWIR), calculated flow factors that allow a simple assessment of the impact of the UKCIP 2002 scenarios on river flows and groundwater recharge for the 2010s, 2020s and 2030s (*Effect of Climate Change on River Flows and Groundwater Recharge: UKCIP02 Scenarios*, UK Water Industry Research Ltd.,

2002). His results suggest that in each scenario, river-flow and recharge will fall across England and Wales by the 2020s. Winter flows may fall by a few per cent, but average summer flows may fall by between 20 and 30 per cent, according to location and scenario. This is likely to have little impact on the reliability of winter abstractions, but it would make summer abstractions less reliable by the 2020s.

Separate Ministerial guidance from Defra and the NAW asked water companies to have water resource plans that allow them to deal with climate as it changes over the next decades. Ministers expect companies to make maximum use of options that will be valuable even if present predictions of climate change prove to be incorrect.

The Agency worked with water companies, Ofwat, Defra and NAW to develop guidance for water companies to use in developing their water resources plans. Companies will use the results from Arnell's work to identify the resource zones that are sensitive to climate change. Where the analysis suggests that significant investment will be required as a result of climate change, companies will carry out detailed modelling work to identify the impact more accurately. Depending on the scale of the impact, this could include using the results of other global climate models to help understand the possible range of impacts.

We have taken account of this new work, and we have issued guidance to water companies on how they should allow for climate change in their water resources plans. We will have a better understanding of the impact of the UKCIP 2002 scenarios on the reliability of public water supplies when we see water company plans produced as part of the fourth periodic review process.

## 2.15 Research and development

R&D is an important part of the Agency's activities. These projects contribute to an improved understanding of the long-term issues for water resource planning and demand management.

Recent and current work includes:

- research on the economics of water efficient appliances;
- a recently completed collaborative project with Thames Water on the effectiveness of media and public relations campaigns in achieving water efficiency savings;
- the third phase of our R&D project 'Optimum use of water in industry and agriculture'. This was completed in January 2003 and builds on earlier



studies into the optimum water requirements of different agricultural and industrial practices. It allows Agency abstraction licensing staff to assess whether an existing or proposed licensed volume is appropriate for an identified purpose;

- Contributions to two projects managed by CIRIA. These are the 'Model agreements for sustainable water management systems' project and the 'Sustainable water management and land use planning' project. Outputs from the latter will include a decision-making guide that will feed into the 'Water management in new developments' (WaND) project. The aim of WaND is to develop tools to improve the design of new buildings to ensure they adopt a holistic approach to all the aspects of water management;
- a unified framework for abstraction licensing and reporting water resource assessments for CAMS;
- the effectiveness of converting WCs to dual flush.

For copies of these documents, write to us at:

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Visit our website at: [www.eareports.com](http://www.eareports.com)

## 2.16 Strategy Implementation Programme

The strategy implementation programme deals with the actions in the Agency's national water resource strategy. Since the first annual review of strategies was published in 2002, the Agency has continued to develop its programme to deliver its long-term actions and recommendations.

Some of these actions were grouped together. This resulted in 24 individual action projects, and detailed plans for their implementation have now been finalised. The Agency has adopted a phased approach to the implementation of strategy actions. We will begin more than half of the action projects in early autumn 2003. The timetable for the remaining projects is currently under review, but they are likely to start in early 2004.

The Agency hopes to work in partnership with many different groups to implement the action projects. Over the coming year, we will talk to various stakeholders about the role they can play. We will report on the progress of each action project.

The programme will be finished by July 2005. This will ensure that outputs from the implementation programme will be available to support the next review of the Agency's water resource strategies.

### 3 Regional activities

Our recommendations in strategies for each Agency region and Wales consist of a combination of resource development, demand management and environmental improvements. The aim of these strategies is to provide local detail and information for those involved with water resource management.

This section provides an update on progress in each of the regions and Wales. It presents work undertaken to implement these recommendations in the year since we published our first annual review of strategies.

#### Anglian Region



In Anglian Region, water companies continue to progress 34 investigations that were funded as part of the AMP3 National Environment Programme. Various mitigation measures were proposed for the extension of Wing water treatment works that would allow greater use of Rutland Water. Anglian Water is consulting stakeholders on these. Essex and Suffolk Water continues to progress aspects of its 'Abberton Trilogy' project. This consists of three inter-related resource development options, including a variation of the Denver licence, uprating of the Ely Ouse-Essex transfer system and the raising of Abberton Reservoir. So far, the company has assessed the impacts of proposed changes to the Ely Ouse-Essex transfer on the receiving rivers.

The Agency is working closely with water companies and local authorities to ensure that planning applications and procedures promote water efficiency. For example, Norwich City Council, in consultation with the Agency, has developed a planning brief for a large housing development that includes demand management measures. We hope that this will act as a catalyst to promote water efficiency in future developments, both in Norwich and other areas.

Anglian and Midlands Region have contributed to the revision of Regional Planning Guidance for the East of England and East Midlands to ensure that water resource issues are included in the guidance. A water resources sub-group of the East of England Sustainable Development Round Table has been re-formed. This will ensure that water resource issues are considered in strategic development planning decisions.

With the support of the Agency, NFU, the UK Irrigation Association (UKIA), and Agricultural Development in Eastern Region (ADER), 10 water abstractors' groups have been set up, based largely on CAMS areas. These promote and improve the efficient use of water in farming. They encourage farmers to think about water use, and an educational video has been produced to improve farmers' understanding of water resource management.

Anglian Region has worked with Defra to create a strategy to promote the Rural Enterprise Scheme. This provides grants to farmers for water conservation initiatives and winter storage reservoirs. This has increased the number and quality of applications for grants compared to those received last year. The Agency will lead on



the water conservation part of the regional delivery plan for the Sustainable Food and Farming Strategy (SFFS). We will identify gaps in the provision of information on demand management across the agricultural sector.

Farmers along the Fossdyke Canal in Lincolnshire have formed a non-profit-making co-operative. This will allow them to share water and use their licences in a sustainable and effective manner. The Agency is considering proposals to license a large storage reservoir off the River Nene that would include environmental benefits – scrapes and marshy areas, for example – and improved public access. In Suffolk, farmers are co-operating to develop a winter storage scheme that will make use of water otherwise pumped to sea.

The joint Agency and water company Water Efficiency Group has produced a proposal for a project in AMP4 to promote water efficiency in small and medium sized enterprises (SMEs) and school projects.

In North Lincolnshire, we have advised Associated British Ports on good water management practices. As a result, many water conservation measures have been adopted, including water recycling.

A temporary telemetry system has been installed in the Anglian regional office. This monitors water use. The Agency intends to review and promote the results of this work. We may install monitoring systems at other offices as part of Agency best practice.

Anglian Region has also actively promoted water efficiency and use to schools across Lincolnshire. For example, the Agency presented information at a Norfolk Farm schools day attended by more than 200 sixth formers.

The Agency helped fund the Wildlife Trust Great Fen Project, and work to create a 3,000 hectare wetland at Woodwalton/Home Fens has now begun. Funding has also been secured for the Fens Waterway Link project. Stakeholder consultations have taken place, and an implementation plan has been scoped.

In Anglian Region, stakeholders' interest in water rights trading continues to grow. A small number of trades have taken place within the current legislative framework.

The second phase of groundwater investigations on the Yare and North Norfolk and Ely Ouse areas is nearly complete. In the Essex area, phase one has begun. A future project has been scoped for the Cam and Bedford Ouse area. Stage 3 of the Habitats Directive review of consents continues to progress well on all high priority sites.

In May 2003, Anglian Region began consultation on the Witham CAMS. The results will be published in early 2004. Anglian and Midlands Region have worked together on the Trent Corridor CAMS consultation document to ensure that those who depend on the Trent Witham Ancholme transfer scheme are considered as part of the consultation process.

## Midlands Region



Midlands Region has completed much of the development of phases 4 and 5 of the Shropshire Groundwater Scheme. Twenty-one new boreholes have been constructed, and the associated infrastructure has been installed. The scheme will be commissioned by the end of 2004. It will provide around 100 MI/d of additional water for releases to the River Severn. This will enhance flows during dry weather.

Severn Trent Water has been granted a new licence to allow 10 MI/d abstraction of groundwater in the Birmingham area. Water abstracted from the borehole will be discharged into surface watercourses to support downstream abstractions at Shardlow on the River Trent. This is the first stage of the Birmingham Groundwater Scheme to improve reliability of water resources in the East Midlands.

Progress has been made at a number of sites as part of the National Environment Programme. Over the past year, a scheme to pump groundwater to support flows and maintain pool levels in the upper reaches of the River Worfe has been in use. Trials have also been carried out to restore flows in another part of the catchment. Further improvements are being achieved in the Blakedown Brook catchment. Here a new borehole has been constructed to provide releases of water

to maintain levels in a pool system that was formerly dry as a result of abstraction from the underlying aquifer.

Regular liaison meetings with the NFU ensure that local representatives in the region are updated on important water resources issues. Farmers in the Upper Severn Area receive a weekly newsletter to inform them of the current water resources situation and any potential restrictions on water use.

Agency offices, recently re-opened in Kidderminster, have rainwater harvesting incorporated into the building design. Rainwater collected from the roof of the property is transferred to a storage tank and then used to flush toilets in the building. Waterless urinals have been also been installed. The water consumption of the building will be monitored closely to check how much mains water the systems have saved.

Midlands Region published the Trent Corridor CAMS consultation document in January 2003 and the Severn Corridor CAMS final document in June 2003. There are particular issues relating to the management of the Trent and Severn catchments that make it necessary to look at them as a corridor. The Severn Corridor CAMS discusses the use of control rules to ensure best management of water resources, and the ecological requirements of the River Severn.

We organised and held two seminars in the Midlands Region to promote water efficiency in public buildings. Over 150 delegates from the education authorities, hospitals and prisons attended, all keen to learn about water saving ideas. A follow up survey is planned to establish which water efficiency initiatives the delegates have actually taken up in their buildings.

Progress has been made on the Blakedown Brook National Environment Programme Scheme. Flows in the river have increased by 2 MI/d due to river support and a reduction in groundwater abstractions. This will add extra flow into two Sites of Special Scientific Interest (SSSI) and the river should no longer dry up during prolonged periods of dry weather.



## North East Region



As part of the AMP3 National Environment Programme, North East Region is monitoring sites at risk from abstraction. There is concern that abstraction from the River Derwent at times of low flow – combined with poor water quality – is reducing the rivers invertebrate population and harming the wetland habitat. We formed a partnership with Yorkshire Water Services, English Nature and the Internal Drainage Boards to investigate the impact of abstraction on the River Derwent. Our initial conclusions suggest that abstraction has very little effect on the surrounding environment. We will continue the study until March 2005 to examine impacts further. In particular, we will look at the impact on the flood-meadow grassland, on bird habitats and on sea lamprey in the river.

We continue to progress river sustainability studies to monitor the aquatic environment and the geomorphological factors affecting it. The environmental monitoring studies will be used to devise plans recognising all the different interests and uses of water resources in a catchment. A draft action plan for the sustainable management of the River Ure (known as the

'Ure Initiative') has been presented to stakeholders. This will identify issues and actions needed for sustainable management of the Ure catchment. Progress has also been made on the Wharfe Sustainable Management Project. A draft action plan will be issued to stakeholders within that catchment, too.

The Agency has investigated a Section 20 operating agreement with Yorkshire Water Services. This looks at the water supply grid and the impact on the river environment. Following our investigations, the Agency has concluded that the development of an operating agreement is not appropriate for the Yorkshire Water supply grid. Protection for both the environment and resources will be achieved through CAMS and through provisions in drought plans. Investigations into a flexible approach to reservoir compensation flow management, to achieve optimum protection for the river environment, continue to progress. These are now at the data collection phase. This work will produce a method with which to assess the impacts of varying compensation releases.

The North East Regional Water Resource Strategy stressed the importance of preventing long-term pollution to ensure that surface and groundwater resources are not lost. Accordingly, the Agency is continuing its partnership with the Coal Authority to effect solutions to the minewater discharges that cause water quality problems in Northumbria. A pump-and-treat scheme at Whittle in Northumberland was opened in October 2002. The system has proved to be a great success. It has an iron-removal rate in excess of 95 per cent. Work is also well underway on a treatment scheme at Blyth in Northumberland. In Durham, options are being considered for control of groundwater levels to the east of the River Wear.

In July 2003, North East Region published the Northumberland Rivers CAMS and began consultation on the Swale, Ure, Nidd and Upper Ouse CAMS. This CAMS will be published in early 2004. The Agency also continues to work on the Don and Rother CAMS, which will be finalised this summer.

## North West Region



The North West Region had three abstraction-related sites in the AMP3 National Environment Programme:

- on the River Gelt, work to provide more than five kilometres of spawning grounds and nursery areas and a 400 metre previously dewatered section of river restore to allow fish movement has been completed;
- a fish pass and a revised abstraction arrangement have been installed on Heltondale Beck, a tributary of the River Lowther. This opens up a further five kilometres to allow movement of young salmon and increase flow in dry reaches on the beck. The scheme was completed in January. The Agency's Chairman, Sir John Harman, officially opened it in April 2003;
- options have been developed to alleviate drying out and low flows in approximately seven kilometres of the Brennand and Whitendale Rivers. United Utilities is consulting the Agency, English Nature, local councils on an environmental assessment of all options.

The Agency is considering an application from United Utilities to improve the security of supply in the Carlisle zone by increasing its existing public water supply abstraction from the River Eden.

The Agency is also liaising with United Utilities on proposals to integrate further the public water supply to Penrith. United Utilities proposes using water from Haweswater Reservoir rather than a number of small, less reliable abstractions. The Agency believes that this may have environmental benefits in catchments upstream, where the existing small abstractions occur, as well as securing a more reliable water supply, treated to a higher standard.

In March 2003 we reported on two projects to promote and assess the level of water efficiency on farms in the North West region. These were joint projects with the Farming and Wildlife Advisory Group (FWAG) and the Lancashire Rural Futures. Farmers across the region welcomed this information. The research showed that many farms, especially dairy farms, already practise water conservation.

We also reported on 'Efficiency of Water Use' in a small-industries and businesses in March 2003. The aim of this project was to establish the degree of water conservation initiatives in 19 industrial and commerce sectors across the North West. The results indicated that water conservation initiatives in the North West are quite patchy. Some sectors recognise the value of conserving water, while others give it a low priority. The Agency intends to use the results of this survey to target specific sectors in the future.

Center Parcs, who operate a large holiday village, worked with the Agency on conserving water. They installed water efficient shower-heads in 1,600 of their showers. This has significantly reduced water consumption, and the company is continuing this work. It is striving to achieve a 30 per cent reduction in water usage in the village over the coming year.

In April 2003, we published the Douglas, Sankey and Glaze, and Leven and Crake CAMS. The licensing strategy allows for further abstraction – provided that new licences contain safeguards to ensure that there is no impact on the environment or on existing abstractions. To increase our understanding of these catchments, we intend to implement a monitoring programme. This additional information will be taken into account when the licensing strategy is reviewed in six years' time.



## Southern Region



Water companies in Southern Region, have implemented solutions at two sites impacted by abstraction to prevent further environmental damage as part of the National Environment Programme (NEP). There has been progress on investigations to improve our understanding of abstraction-related concerns at existing NEP sites across the Region.

Southern Water has closed its Broughton groundwater source in Hampshire, to alleviate impacts on the Wallop Brook. The Agency anticipates that further water company abstractions known to be causing damage to the environment will be varied or closed this summer. Portsmouth Water's application to vary its Northbrook and Soberton licences has been determined this summer. This allows closure of its Hoe source to alleviate impacts on the Moors SSSI at Bishops Waltham. Thames Water is expected to apply for a licence to abstract from the Swanscombe Chalk, enabling closure of an existing groundwater abstraction in the Darent valley. South East Water has applied for a variation to their Ardingly Reservoir and River Ouse licences in East Sussex, to improve the reliability of the source and protect the environment better.

Two years ago the Agency revoked unused industrial licences in the lower River Dour catchment. The resources released have been licensed to Folkestone and Dover Water. This will allow a reduction in abstraction by the company in the upper catchment which will benefit the environment.

The Agency has granted Portsmouth Water a variation to its Eastergate group licence. The

licence variation will become effective when a planned bulk supply to Southern Water becomes operational in 2004/05.

Southern Water and South East Water have submitted applications for new and varied licences to allow an increased transfer between the Bewl and Darwell Reservoirs. The increased transfer will support a new abstraction by South East Water from Darwell Reservoir to Hazards Green, north of Eastbourne to improve the reliability of water supplies in this area.

The Agency has awarded a contract to Hydrosave UK Ltd to offer free water use audits to agricultural, industrial and commercial abstraction licence holders. The project aims to carry out a minimum of 25 audits by November 2004.

Southern Region's schools water efficiency grant scheme is making good progress. The Agency has supported 32 schools since the project started in August 2002. We have another 11 applications under review. We plan to install monitoring systems at a small number of the schools to measure the impact of the water efficiency devices introduced.

Each Agency Area has published one CAMS and has a second underway. The Arun and Western Streams CAMS was published in April 2003, and the Stour CAMS and the East Hampshire CAMS were published in May 2003. Each CAMS sets out a number of actions for improving the sustainability of water resource management. These include working with local abstractors to review and amend unused and under-used licences and to investigate the impact of abstractions that may damage the aquatic environment.

A joint project with Thames and Anglian Region is evaluating the strategic resources options for the South East of England. This assessment of options, costs and possible transfers of water will help us review water resources plans. The 'Water Resources in the South East' (WRSE) Group comprises Southern Region's five water companies, Ofwat and ourselves. WRSE has begun work to model the strategic resources system and future options for the Region. The project will apply the approach recommended in the

UKWIR/Environment Agency guidance on the *Economics of balancing supply and demand*, published in October 2002. We hope that the model will help water companies, Ofwat and the Agency to develop the best overall programme of supply-demand management measures for inclusion in water companies' final water resources plans.

The WRSE Group has also been a forum for progressing water metering in households. The region's water companies are well aware of all the opportunities provided by legislation to introduce water meters, including metering on change of house ownership and the opportunities to apply for 'water scarcity status'. If granted by the Secretary of State, this status allows companies the widest compulsory metering powers. The Agency believes that high levels of household metering (with protection to vulnerable groups), are both achievable and necessary to secure the long-term supply-demand balance of the region and to protect the environment.

We have also worked closely with SEEDA (South East England Development Agency), SEEDA's Water Forum and SEERA (South East England Regional Assembly) in connection with housing and economic development proposals. Particular focus has been on the 'Sustainable Communities' debate and SEERA's preparation of the Regional Spatial Strategy. We have developed a work plan to assist SEERA with the development of the Regional Spatial Strategy. We recently began a review of the Regional Water Resource Strategy against the latest housing forecasts. At a more local level, collaboration with Hampshire County Council on the Hampshire Water Strategy and liaison with Kent County Council's Water Policy Group help promote aspects of our strategy.

Our regional strategy identified the potential for re-using coastal effluent discharges. We are considering a proposal to review this.



## South West Region



South West Region continues to hold regular meetings with water companies to promote adoption of best practice in leakage assessments. Leakage reduction in the Region continues to fall, and Wessex Water achieved its economic target level in March 2003.

Good progress is being made on a project with Bristol Water. The work brings earlier investigations into resource development options for the Gloucester Sharpness Canal and Chew Valley Reservoir sources up to date.

An Operating Agreement details the respective actions of the Agency, Wessex Water, English Nature and Ofwat to secure improvements in flows for the Wylfe (including the Chitterne Brook), River Piddle and Upper Bristol Avon Tributaries (all NEP sites). The first annual summary on progress was published in January 2003. A local consultation group has been established and has held its inaugural meeting.

Phase 2 of the investigation into impacts of water company groundwater abstractions on the River Bourne and Nine Mile River has made good progress. The initial modelling work allowed us to assess the scale of licence modifications required for these local water company sources to achieve a sustainable level of abstraction. These proposed modifications have been put forward by the Agency for inclusion in water company water resources plans as part of the AMP4 Environment Programme.

Operational rules for abstraction from the River Camel have been clarified. This ensures that the favourable status of the River Camel SSSI at the De Lank site operated by South West Water is protected.

We have been actively promoting water efficiency measures to farmers and factory owners. We have specifically targeted abstractors in catchments where water resources are scarce who find it difficult to remain within their licence limits. The effort to reduce abstraction has been concentrated on enhanced leakage monitoring, repairs and improving water efficiency. As a result, a range of simple measures has been implemented. This includes replacing old, leaking galvanised pipes, installing check-meters to pinpoint leaks, providing storage to facilitate recycling and fitting water saving devices on taps and urinals.

Five hydropower schemes have been successfully developed in Somerset. These are the first hydropower schemes authorised in this area for several years. We are working with developers on a number of further schemes.

South West Region continue to progress consultation on the Tone, Stour, and Seaton, Looe and Fowey CAMS. We also continue to work on the Exe CAMS, which will be published late 2003.

## Thames Region



Thames Region is working with Ofwat and Thames Water as part of a tripartite group to help resolve issues surrounding Thames Water's water balance deficit. The company has made progress with the day-to-day management of its water distribution system. It also continues to work towards establishing active leakage control. This process has produced more accurate figures on actual leakage, which is greater than previously estimated.

The Agency is working closely with Thames Water to identify water resources development schemes to reduce the company's current supply-demand imbalance. Options include developing groundwater resources, enhancement of existing resources (such as the North London Artificial Recharge Scheme), and opportunistic new developments (such as the East London Resource Development). The largest single proposal is for a 100-150 Ml/d desalination plant at Becton. The Agency is waiting for clarification of the proposal, both in terms of implementation and sustainability.

Thames Water is carrying out investigations to assess the need for, and environmental impacts of, a major new strategic reservoir scheme. The Agency and Thames Water are working together to identify areas where further work is needed.

Thames Region continues to investigate environmental flow requirements and the potential environmental impacts of regulated releases on the River Thames. It is working with Thames Water on the hydrogeological impacts of such a proposal.

Increasing pollution (especially due to petrochemicals and nitrates within the urban and fringe areas of London) poses real risks to groundwater supplies with potential impacts on the output and viability of some sources. The Agency is working closely with Three Valleys Water to find temporary alternative sources to replace those lost to bromate pollution. The loss of sources to pollution may bring forward the need for strategic water resources developments.

AMP3 National Environment Programme and Habitats Directive stage 3 investigations are ongoing at sites in Thames Region. These include the River Lambourn, the Kennet and Lambourn floodplain, the Lee Valley and the Oxford Meadows on the River Thames. The Thames Corridor CAMS consultation document will be published later this summer. The final strategy is due to be completed in early 2004. Further investigations into the environmental flow requirements and potential impacts of abstraction at Teddington and Oxford will be used to inform the revision of the Thames Corridor CAMS in six years' time. Thames Region is undertaking six other CAMS. Three are due to be completed by early 2004.

We have been working closely with the Greater London Authority to influence the consultation phase of the London Plan. The London Plan sets out how development will be progressed over the next 15 to 20 years. We have focused on promoting the efficient use of water in new and existing developments, and on active leakage control by the water companies. We have also been working with the Office of the Deputy Prime Minister to progress the concept of sustainable communities in London and the surrounding area.

Thames Region is working with Gleeson Homes and Sutton and East Surrey Water to demonstrate the benefits of incorporating rainwater harvesting systems into new homes. A housing development in Surrey has been monitored since the beginning of the year. Monitoring will continue for 12 months.

Thames Region has set up a water resources forum. This comprises water companies in the region, Ofwat, Watervoice and English Nature. Regular meetings are held at both managing director and technical levels.



## Environment Agency Wales



Dŵr Cymru Welsh Water is progressing a scheme to transfer water from the Claerwen reservoir to the treatment works at Strata Florida. This will serve customers in the mid and south Ceredigion resource zone. The company has scoped alternative pipeline routes to assess the possible environmental impacts. The Agency is awaiting detailed proposals to assess the appropriateness of any abstraction licence application.

In August 2002, the regional head office moved to refurbished offices in the centre of Cardiff. This building includes a rainwater harvesting system, dual flush toilets, waterless urinals and push-timer action taps with spray attachments. These contribute to the 'Excellent' award given to the office under the Building Research Establishment's Environmental Assessment Method (BREEAM) 98 office rating system. Building specifications for new offices planned at Llandarcy in South West Area also include water efficiency devices.

Environment Agency Wales co-funded a project with Mandix Consultants, the BOC Foundation, Wales Tourist Board, Corus, Envirowise, the Hotel and Catering International Management Association and Green Globe to assess the scope for water efficiency in the hotels sector. The results of the project *Water Demand Management in the Hotel Sector through Demonstration Projects* (to be published later this year) indicate that significant savings can be achieved. Workshops for hotel

managers have been held across Wales. These demonstrate the potential savings that can be achieved through the implementation of simple measures. The results are now informing the development of benchmark figures for use in the hotel sector across England and Wales.

Water resources staff in South East and South West Areas have been promoting the benefits of water efficiency with abstraction licence holders. During routine enforcement visits at industrial sites, they discussed the scope for water efficiency. They focussed on the simple, low-cost measures with quick payback periods. Some of the successes include:

- a bottling plant now monitors the water level in its tanks to manage water levels and prevent overflow. The company is also looking into metering issues;
- a large industrial site has just upgraded its metering and monitoring systems. It is now examining water use across the site;
- a creamery has improved metering and monitoring of water use across its processes. Significant savings have been achieved by reviewing water management on site. It has, for example, introduced re-use and recycling technologies and the use of trigger hoses, as well as educating staff on water efficiency good practice.

In 2000, we identified groundwater problems in five catchments where the abstractions were close to the aquifer yield. The Agency has undertaken modelling work to understand the nature of these problems. We have completed studies in the Rheidol catchment and the Yazor gravels in the Wye catchment. Further work is proposed for the lower River Dee, Dyfi, and Aeron catchments. A research project in the Yazor catchment has also been completed. This developed a simple economic model to identify the impact of four alternative scenarios of demand on groundwater resources in the catchment.

Environment Agency Wales began consultation on the Conwy CAMS and Teifi CAMS this summer. Final CAMS documents will be published late 2003.

## 4 Future activities

Over the next year, we expect to:

- receive draft water resources plans from water companies in August 2003;
- report to Ministers in late autumn on the issues raised by those plans for both the supply-demand balance and the environment;
- identify those companies from which we require draft final water resource plans and consider progress on these when received;
- receive final water resource plans from water companies in March 2004;
- report to Ministers on the issues raised by those plans for the supply-demand balance in early summer 2004;
- review the Agency's drought procedures to ensure that we deal with droughts consistently and effectively across England and Wales;
- publish a consultation response document summarising the views we receive on water rights trading;
- prepare final proposals about how we will facilitate water rights trading under the expected new legislation by October 2004;
- Complete 50 per cent of CAMS by 2005. All 129 will be produced by 2008. Further information on the local timetables is available on the Agency's website at [www.environment-agency.gov.uk/cams](http://www.environment-agency.gov.uk/cams);
- participate in discussions with Defra and Ofwat regarding the submission to Defra of a joint Ofwat and Agency paper *Demand Management – Regulatory Issues and Incentives*;
- continue to work with Defra on the Agency's review of the abstraction licence charging scheme;
- continue to work with Defra on the implementation of a new abstraction licensing system arising from the Water Bill;
- publish a two-stage consultation that outlines proposals to recover the costs of compensation that arise as a result of variation or revocation of abstraction licences.

We will report again on progress against the Agency's water resources strategy in a year's time.

## 5 Further information

For further information on the issues discussed in this review, please:

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# Annex

The recommendations from *Water Resources for the Future*

	Action
A1	Where possible, water companies should consider sharing water from existing or new developments.
A2	Government should ensure that the Water Supply (Water Fittings) Regulations continue to contribute to the efficient use of water.
A3	Water companies should promote waste minimisation schemes with their industrial and commercial customers.
A4	Ofwat, Government, water companies, trade associations and the Agency should promote water efficiency and monitor results.
A5	The Agency will work with water users and water companies to improve water efficiency.
A6	Government should ensure that competition and restructuring of the water industry encourage the efficient use of water.
A7	The Agency will seek better access to information on leakage and leakage control.
A8	Water companies should continue to develop new and better methods of leakage control.
A9	The system for setting annual leakage targets should be maintained and developed.
A10	The Agency will work with Government and Ofwat to ensure that existing and proposed legislation assists in achieving good leakage control.
A11	The Agency will work with Government, Ofwat and the water industry to provide information to householders on metering and in the development of tariffs that encourage water efficiency, while considering the Government's social and environmental policies.
A12	Water companies should take a positive attitude towards targeted household metering, where appropriate and where opportunities arise.
A13	The Agency will look for opportunities for farmers to benefit from existing and new water resource developments.
A14	The Agency will encourage farmers to adopt best practice in water use around the farm.
A15	The Agency will work with agriculture to continue to develop indicators of good practice in water use.
A16	Farmers should seek ways of minimising their water use.
A17	Farmers should consider working together on shared schemes.
A18	The Agency will assist in the trading of abstraction licences, provided that no harm to the environment will result.
A19	Farmers should consider the possibility of trading abstraction licences to meet their needs.
A20	The Agency will talk with supermarkets and the food processing industry to help them understand the effects of crop requirements on water use and the water environment.
A21	The Agency will work with hydropower developers to achieve viable schemes.
A22	The Agency will work with others to identify the actions needed to improve the water environment.
A23	The Agency will work to help people understand how water use affects the natural environment.
A24	Navigation authorities should investigate their need for reliable water resources.

	Action
A25	The Agency will encourage the development of water transfers, provided that they take account of the needs of the environment.
A26	The Agency will work with Ofwat to rationalise the way we gather information from the water industry.
A27	The Agency will work with planners to look for water efficiency in new developments.
A28	The Agency will work with Government to streamline approval processes for essential schemes while maintaining public accountability.
A29	The Agency will explore the idea of an independent water efficiency body.
A30	The Agency will work with others on research and development.



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We welcome views from our users, stakeholders and the public, including comments about the content and presentation of this report.

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### Published by:

Environment Agency  
Rio House  
Waterside Drive, Aztec West  
Almondsbury, Bristol BS32 4UD  
Tel: 01454 624400 Fax: 01454 624409

ISBN : 1857059212

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