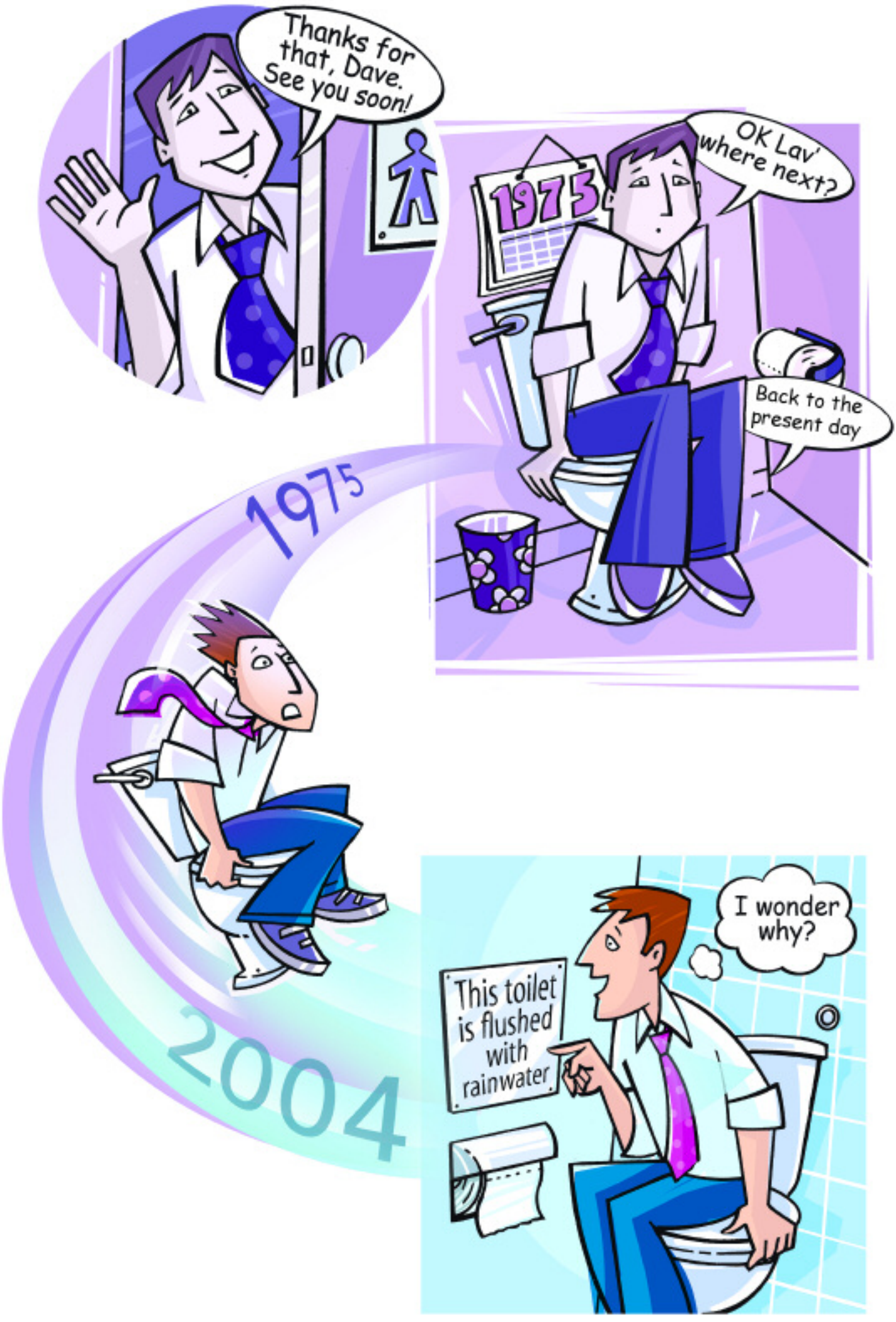


Wessex Water operations centre, Bath

Striking the balance 2004

ABOUT WESSEX WATER SERVICES LTD

Area
Around 10,000 km^2 covering the same area as in 1974 – Dorset, Somerset, most of Wiltshire, the areas around Bristol and Bath that once comprised the county of Avon, and parts of Gloucestershire, Hampshire and Devon.

Water supply
- 1.2 million customers supplied with around 370 million litres per day
- 125 water sources and 119 water treatment plants
- 376 service reservoirs and water towers
- 11,294 km of water mains

Sewerage
- Sewage taken away and treated from 2.5 million customers
- 410 sewage treatment works
- 1,401 pumping stations and 1,051 combined sewer overflows
- 16,000 km of sewers

Ownership
Wessex Water is a subsidiary of YTL Power International Berhad (Malaysia)

Environment

Our long term sustainability vision

A sustainable Wessex Water would mean…

helping to protect or enhance all natural resources and ecosystems used or affected by our operations.

For more information see pages 34-37

WATER RESOURCES

Wessex Water has a duty to meet the public's need for high quality water, with consumption currently standing at an average of 150 litres per person per day and still rising. However, taking water from some sources to meet this need can mean, particularly during dry weather, that less is available for freshwater ecosystems. In future this situation could be compounded by climate change, which will probably cause drier summers and wetter winters. Shorter, sharper bursts of rainfall will mean less water will soak into underground aquifers and drier summers will lead to a rise in demand at times when resources are most scarce.

What we do

We review our use of water resources continually, in a balancing act that takes into account economic cost, impacts on the environment and the needs of our customers.

About 80 per cent of the water we supply comes from aquifer sources and 20 per cent from surface reservoirs. Even in a dry year we take no more than eight per cent of the rain available to us after evaporation and transpiration by vegetation. Furthermore, we believe that we can continue to meet the public's reasonable demands using existing water sources. This can be achieved through a range of measures such as maintaining a robust supply network, controlling leakage, metering and information on using water wisely.

Improving low river flows

While there is a good balance of water supply and demand across our region, there are areas where water abstraction for public supply can contribute to low flows – notably in the rivers Wylye, Malmesbury Avon and Piddle. Low flows can jeopardise aquatic ecosystems such as the chalk stream wildlife based around water crowfoot. Some of these river stretches have multiple environmental designations, eg, the Hampshire Avon system into which the Wylye flows is a Site of Special Scientific Interest and a Special Area of Conservation.

Various solutions have been proposed over the years, including a mass water transfer from the low Hampshire Avon near Ringwood, which proved too expensive. Our current five-year programme, agreed with Defra and our regulators, comprises a range of measures including importing water from neighbouring areas where it is more plentiful, supplementing stream flow with aquifer water and studying the effects of abstraction on river ecology.

The very dry weather in 2003, the second year of these measures, provided excellent conditions in

To ensure customers are aware of seasonal issues, such as frost and water conservation, we run road shows and special campaigns in the press.

which to assess their effectiveness. The results were generally encouraging with healthy flows maintained in the Malmesbury Avon, River Piddle and Chitterne Brook, a tributary of the Wylye, by means of stream support boreholes. However, flows in the River Wylye itself were low, possibly exacerbated by the increased need to use our Chitterne source during the prolonged dry weather in summer and autumn. Local fishing interests consider our measures insufficient to remedy the impacts of abstraction and continue to press for a more comprehensive solution whereby the more damaging abstractions are substituted with alternative supplies. In the meantime, pumping has been altered to allow greater use of an existing bulk supply from Bristol Water and we have successfully secured a time-limited licence to abstract extra water from Wimbleball reservoir in Somerset. Together, these will help reduce our reliance on, and minimise abstraction from, the Chitterne source.

Elsewhere, in conjunction with the Environment Agency, we have continued to make good progress with agreed investigations of the 'Priority two' low flow sites.

We believe we must monitor the effectiveness of our work before we reconsider large scale engineered solutions. This is the essence of the low flow work detailed in our final business plan, which centres on investigations into the impact of groundwater abstraction in the Hampshire Avon catchment, alongside a continuation of the existing measures.

Where problems are proved we will appraise the options and aim to make a solid start on the most suitable before 2010.

In the longer term, we may also need to consider alternatives such as river mouth desalination, preferably powered by renewable energy.

Progress

Wessex Water continues to provide water efficiency information to all domestic customers along with cistern devices and self-audit packs, as part of our water efficiency strategy for 2000 to 2005. Work with our business customers includes detailed on-site audits for larger customers and water efficiency seminars for small and medium sized enterprises. We circulated a water efficiency pack to every hospital in our area and the second edition of our *Corporate Solutions* newsletter was distributed to more than 500 business customers, detailing ways of reducing leakage and water use. During the year more than 32 gardening road shows were held across the region, involving question and answer sessions with a panel of local TV gardening experts.

Our final business plan includes proposals for a detailed investigation of the effectiveness of low use water fittings and appliances in new houses, to investigate whether these present a viable alternative to more traditional ways of meeting new demands for water.

Performance

While rainfall in 2003 was 89 per cent of long term average, the year was also the driest since 1975. April and August saw some of the hottest temperatures for many years. While average demands were up three per cent on the previous year, the peak demand of 468 Ml/d in mid-July, was up 13 per cent on 2002. The dry autumn led to very low groundwater and reservoir levels, and we had to rely on sources such as the previously mentioned Chitterne borehole on Salisbury Plain to meet demand. Despite the weather, we have still not imposed restrictions on use since the severe drought of 1975/76. We started to implement our drought contingency plan in case winter rainfall was inadequate, but above average rainfall returned resources to a healthy state.

Headline indicators - water resources	2003/04
Water consumption (litres/head/day) unmetered/metered	157/135
Security of supply index score	100%
Compliance with abstraction licences	99%
% of households metered	31%

RIVER AND COASTAL WATER QUALITY

What we do

Following decades requiring considerable investment to sewerage and sewage treatment, improvements are still underway. After privatisation, work focused on schemes to meet the EU directives for Urban Wastewater Treatment and Bathing Waters, with attention centred on reducing biochemical oxygen demand, suspended solids and bacteria in effluent, among other parameters. With much of this completed, our attention is now focused on reducing the levels of nutrients, such as phosphorous and nitrates, in effluent. These affect fresh and marine waters respectively by feeding the algae that take up oxygen that would otherwise be used by other water-based wildlife.

Society's waste products cause damage to watercourses and the sea and environmental sustainability requires us to avoid this. Sewage treatment is essential in this regard, involving the removal of solid matter and dissolved impurities from water and producing effluent and sludge. The stages of treatment include:

- **primary treatment** – removes debris from raw sewage and separates water and sludge
- **secondary treatment** – uses bacteria to break down organic matter carried in the water
- **tertiary treatment** – eg, membrane and ultraviolet treatment, eliminates bacteria and viruses or reduces them to low levels.

Wessex Water's current five-year programme is ahead of schedule and some 2003 work is listed below.

Urban Waste Water Treatment Directive

- Phosphorous removal at Bradford-on-Avon, Devizes, Thingley, Trowbridge and Westbury, to reduce nutrient levels in the Bristol Avon.
- Secondary treatment at Coultings, near Bridgwater.

Bathing Water Directive

- Storm water storage and additional secondary treatment at Avonmouth to help improve North Somerset bathing waters along the Severn Estuary.
- Ultraviolet disinfection at Kinson, Palmersford and Wimborne in south east Dorset to improve bathing waters at the Christchurch beaches.

Habitats Directive

- Phosphorous removal at Ratfyn, Amesbury and Netheravon to reduce nutrient levels in the Hampshire Avon.

River Quality Objective improvements

- Improvements at three sites including Taunton.

Unsatisfactory intermittent discharges

- 86 improved in 2003/04 – these act as occasional overflow points for sewers that carry both foul sewage and storm water. Work recently intensified, with the construction of some major schemes, eg, Bath combined sewer overflow improvement project, now underway.

First time sewerage to rural communities

- Six locations in 2003, of 21 so far in 2000-05. There is still a buoyant demand in our region for first time sewerage where environmental problems arise from existing private systems.

Performance

The situation has greatly improved since 1974 when only 27 per cent of sewage works discharges were satisfactory, as shown in the box below.

Headline indicators - sewage treatment	2003/04
% of rivers good or fair quality	95%
Pollution incidents	152
Bathing water quality - mandatory standards	97.9%
Population connected to compliant sewage treatment works with sanitary standards	100%
Convictions for pollution incidents	3

Crunch issues

The water environment in the UK has undoubtedly benefited from the huge investment of the last 30 years and spin-off benefits have included better conditions for tourists and riverside regeneration in urban areas. However, this improvement brings with it other sustainability issues. Energy consumption has increased considerably because standards must be achieved 24 hours a day, 365 days a year. Without plentiful renewable energy, this increased consumption creates a different environmental problem in the form of carbon dioxide emissions.

Over the years little money has been allocated by Ofwat for capital maintenance and this is crucial; there is considerably more sewerage infrastructure now, much of it more hi-tech than in the past and with a relatively short lifespan.

There is also an absence of catchment-wide action; while it is beneficial to remove phosphorous at the

end of the pipe in a sewage works, if little is done to stem diffuse pollution from agriculture, industry and urban areas, the biodiversity of river ecosystems will still fall short of potential. The EU Water Framework Directive, WFD, is intended to address this point and the UK government's consultation on controlling diffuse pollution shows potential. The WFD target is for good ecological status for all watercourses by 2015, but there is currently little concerted action and all the while the clock is ticking.

IMPACTS ON THE ATMOSPHERE

What we do

Wessex Water is a large user of energy – mainly in the treatment of sewage but also via drinking water production. Tighter environmental regulation for water has resulted in greater energy use and the production of more sludge. A consequence can be higher emissions of greenhouse gas emissions – mainly carbon dioxide and methane – and this paradox means energy use is one of our toughest sustainability issues. The increase in greenhouse gases can only be halted by energy efficiency work, more renewable energy or more focused effluent quality regulation.

In 1974 and 1975 the main energy concern was the rapid increase in prices following the 1973 oil crisis when petrol costs rose by 400 per cent across America and Europe, followed by power cuts, reduced speed limits on motorways and a three day week in industry.

In real terms industrial electricity costs are today, half what they were in the mid 1970s. Energy concerns now centre on diminishing reserves, security of supply, our increasing reliance on imported oil and gas, the impact of fossil fuels on climate change, the contribution that renewable sources can readily make and whether a further generation of nuclear power stations should be built. The UK government's energy white paper, which seeks to 'properly and sustainably' integrate energy, the environment and economic growth, reflects an attempt to balance these concerns. Based on historic power costs, it is estimated that electricity consumption in the mid-1970s was 80m kWh. Consumption has risen mainly because more energy intensive sewage treatment technology is used today.

We aim to take 20 per cent of our energy from renewable sources by 2005 and 50 per cent by 2020. Our carbon management strategy, which is helping guide our work towards these targets, includes these options:

- using existing resources – upgrading biogas CHP engines; using sludge gasification/pyrolysis
- other renewable sources – dedicated wind turbines, purchases from grid suppliers, biodiesel in generators, energy crops.

Progress

A range of activities was undertaken in 2003/04.

Energy efficiency

- Improved provision of energy data on the company intranet, for better monitoring of power consumption.
- Investigation of ways to improve our process efficiency at Avonmouth and other large sites.
- Continuation of our benchmarking system, process area monitoring, which highlighted locations where unexpectedly high amounts of energy were being used, enabling efficiency work.

Renewable energy

- Our 28m kWh/year renewable electricity purchase from SWEB has been extended to September 2006.
- Investigations into direct combustion of waste vegetable oil to generate heat and electricity; also technologies such as sonication to break down sludge to create more biogas for generation.
- Our final business plan included a bid for advanced treatment of sludge at Avonmouth, to

avoid reliance on land applications. Discussions and investigations concerning pyrolysis and gasification of sludge continue.

- Discussions with potential wind energy developers about dedicated wind farms.

Methane emissions

Methane is emitted from sewage treatment and sludge reuse and is 23 times more potent as a greenhouse gas than carbon dioxide. Reductions in our estimated methane emissions have been achieved because considerably less sludge has been sent to landfill since 2000. A combination of sludge use on farmland, for food, fibre or energy crops, and sludge pyrolysis/gasification could secure low annual methane emissions, helping to reduce significantly our overall greenhouse gas emissions.

Progress

Work in 2003 included the installation of bigger CHP at Poole and Berry Hill, which we believe will reduce 'fugitive' methane emission, ie, unintentional leaks, and increase biogas generation from 240kW to 800kW.

Performance in 2003/04

While efficiency savings have been achieved through monitoring and optimising equipment, our electricity consumption reached the highest ever level in 2003. The resulting CO_2 emissions were held in check by our progressive approach to renewable energy.

Headline indicators - emissions to air	2003/04
Energy consumption mkWh	255
Renewable energy	18%
Energy CO_2 (tonnes)	86,000
Methane emissions (tonnes CO_2 equivalent)	58,000
Greenhouse gas emissions (tonnes CO_2 equivalent)	151,000

Looking ahead

Wessex Water aims to follow the emissions reduction path suggested by the Royal Commission for Environmental Pollution. This proposes a 60 per cent cut in UK CO_2 emissions between 1997 and 2050 to avoid further significant interference with the Earth's climate. The reduction of emissions we would need to achieve is shown in the table on page 19.

We have largely stayed on track, with the following factors playing a part:

Increasing emissions

- higher energy use to meet stricter effluent standards.

Reducing emissions

- improvements to biogas CHP engines
- significant quantities of renewable electricity purchased from SWEB
- greatly reduced landfilling of sludge
- the marginally lower carbon density of electricity from the national grid, caused by the move from coal to gas.

IMPACTS ON LAND

Of the environmental issues connected to land, the reuse of sludge is our main concern. Sludge is a by-product of sewage treatment and comprises water, fats, grease, food residues, faeces, paper, grit and controlled quantities of industrial waste. Various biological, chemical and heat methods are used to treat sludge and reduce health hazards and this way 99 per cent of coliforms (as an indicator of pathogen reduction) are destroyed. In the mid 1970s 30 per cent of sludge was disposed at sea, in the Bristol Channel, a practice that ended in 1993, five years ahead of the nationwide ban.

What we do

We believe that the most sustainable use for sludge is to apply it to land, particularly if industrial waste and persistent compounds or elements can be removed upstream of sewage works. Sludge is a resource that can be used in various ways for fertilising farmland, land reclamation and energy generation.

For a long time our strategy has focused on recycling the valuable nutrients that sludge contains in ways that are safe, environmentally sound and economically sensible. However, concerns expressed by the EU, national government and food retailers mean reuse options are becoming more restricted – often this owes more to an inflated perception of risk than to the likelihood of sludge related contamination. Meanwhile, more sludge is being produced because of additional sewage treatment requirements.

The matter of contaminated land is also of concern to us for two reasons:

- leachate from landfill sites where sludge has been disposed - a practice that is being phased out
- we find contaminated soils occasionally when carrying out infrastructure schemes such as mains laying.

Progress

Substantial progress has been made on improving our sludge treatment facilities to meet the draft revised

Greenhouse gas targets	Carbon dioxide	Carbon dioxide and methane combined
What we emitted in 1997	101,000 tonnes	168,000 tonnes
2050 target (60% less than 1997)	40,000 tonnes	67,000 tonnes
Annual reduction needed from 1997 levels	1,150 tonnes	1,900 tonnes

Sludge Regulations and to comply with the ADAS Safe Sludge Matrix. Digestion plants have been upgraded and treatment schemes for sludge treatment, mainly employing lime, have been completed this year at Avonmouth, which serves the Bristol area, and at Taunton.

Changes in the Sludge Regulations mean we have had to move away from our strategy of disposing of untreated sludge to industrial cropping land. We have already halved the amount disposed of by this means and are on target to provide treated sludge for disposal to agricultural land by the December 2005 legal deadline.

In the near future we anticipate that the EU Nitrate Directive and other pressures will mean that some land is ruled unsuitable for the application of treated sludge. For this reason we have included as part of our 2005-2010 final business plan, a proposal for sludge-to-energy at Avonmouth. This would provide the twin environmental benefits of renewable energy and virtually no methane production.

The sewage sludge dilemma – more is being produced with fewer options for using it – was behind our involvement in a project run by Forum for the Future. This is trying to showcase best practice for sustainable and integrated uses of land resources in the south west. Several interests are being pulled together by this project – diversification of the rural economy, skills and training, tourism, flood control, biodiversity, energy crops and the recycling of useful resources such as sludge. With a database of best practice underway, we hope this project will help address the issues raised in the Curry and Haskins reports and raise the profile of work that tries to use the land sustainably.

Performance

In total, 64,800 tonnes (dry solids) of sludge were produced in 2003. A continued decline in the amount of sludge disposed in landfill has been achieved and this reduction has the highly beneficial environmental effect of cutting the emissions of the greenhouse gas methane.

Sludge	2003/04
% of sludge reused for farmland, land restoration or energy	99%

BIODIVERSITY

Biodiversity means the variety of life on Earth. The Wessex Water biodiversity action plan, WWBAP, comprises three components – management of our own land, minimising the effect of new development and a programme of funding for wildlife organisations, the Partners Programme. The UK Biodiversity Action Plan report, *Sustaining the Variety of Life*, praised WWBAP as a good example of how companies can become involved in biodiversity work.

Management of our own land

An ecological database of our own sites provides a record of the most sensitive areas and assists our site management work. Our Geographical Information System includes environmental features that are also built into the profiles of operational sites on our intranet. Environmental procedures incorporating design, construction and maintenance of assets apply to all parts of the business. We use a standard conservation lease to encourage wildlife organisations to take tenancies and to improve access to management grants.

Our river ecology team spends much of its time monitoring the effects of our work to reduce the impact of abstraction on rivers that occasionally suffer from low flows – notably the Wylye, Piddle and Malmesbury Avon. This work involves surveys of fish, invertebrates and river vegetation.

Minimising the effect of new development

Wessex Water considers it important that new treatment works and buildings are sympathetic to the local environment and, where possible, that new habitats for wildlife are provided. Notable examples of this policy include sewage treatment works at Swanage and Weymouth and our operations centre in Bath where the use of local flora and building materials was a priority.

Our environmental procedures define minimum standards and act as reference points for staff planning work such as excavation or tree cutting. They help to prevent disruption of wildlife and, where possible, enhance biodiversity, and often mean planning the timing and design of new development around local wildlife.

Partners Programme – funding for wildlife organisations

This programme is now in its sixth year and has enabled us to encourage innovative projects carried out by wildlife organisations in our region. The funded projects are geared towards integrated catchment management with the aim of contributing to the UK Biodiversity Action Plan targets for freshwater and marine habitats. The following provides a profile of the projects underway.

Avon Wildlife Trust is involved in species recovery focused on the white clawed crayfish and water vole – both threatened by invasive alien species, the signal crayfish and mink respectively.

Dorset Wildlife Trust is in charge of the county's biodiversity strategy and Wessex Water is funding aquatic and marine projects. A Dorset marine programme is being established, while site management and work with landowners are set to benefit southern damselfly, water vole and otter.

The RSPB is currently regenerating 200 hectares of wetland at Ham Wall in Somerset. Fourteen hectares of new reedbed were established in 2003 and a mixture of wetland habitats is benefiting a range of species including bittern, heard booming in spring 2004, and Cetti's warbler.

Somerset Wildlife Trust is focusing on land management for better water quality in the Parrett catchment. This is achieved through work with landowners to introduce methods of cultivation that minimise soil erosion, flooding and siltation of nearby watercourses. Since this work began six years ago, £2m has been secured under the national Countryside Stewardship programme.

Wiltshire Wildlife Trust is coordinating the Wessex Chalk Streams Project under which restoration projects on rivers in the Hampshire Avon system and numerous advisory visits to landowners and fishing clubs are carried out. Last year five site management statements covering 30 miles of river were developed.

Headline indicators - biodiversity	2003/04
SSSIs in favourable/recovering condition	83%

Customers and Communities

PAYING FOR SERVICES, AFFORDABILITY AND THE PRICE REVIEW

Our long term sustainability vision

A sustainable Wessex Water would mean…

having relationships with all our stakeholders that are responsible, clear and cooperative, with governance structures and policies that support sustainability outcomes.

For more information see pages 34-37

Income from customers' bills contributes to running water and sewerage services and partially covers the cost of environmental and quality improvements, the rest being raised from loans.

Affordability is an increasingly important issue and Wessex Water is concerned that water bills should be affordable across the board because water and sanitation are essential elements for human wellbeing. In 1974, approximately 1.5 per cent of the average household income was spent on water and sewerage bills but today that figure has dropped to 1.2 per cent.

While 31 per cent of households pay their bills on the basis of metered water consumption, 69 per cent pay on the basis of the rateable value of property. The option to switch to a metered supply has been offered for free in the Wessex Water region since 1996.

Headline indicators - customer service and affordability	2003/04
Monthly survey - customers rating our services as good or very good	93%
Registered vulnerable customers	294
% of households metered	31%

Bills and the 2004 price review

Wessex Water has submitted draft and final business plans to Ofwat, in preparation for the forthcoming price review that sets investment levels and bills for the period from April 2005 to March 2010. We aim to combine the needs of the public, the environment and investors.

The draft plan was a consultative document that was designed to achieve a sustainable balance between our stakeholders' requirements and proposed price increases of 12 per cent over five years. We were guided by the following three objectives:

- an understanding of what our customers are prepared to pay – market research showed that bill increases of around two per cent a year

above inflation to pay for improvements would be acceptable

- recovering the costs of meeting our existing core obligations
- giving priority to environmental investment that offers the maximum environmental benefits.

Reaction to this plan was low key, but varied. WaterVoice Wessex and our Customer Liaison Panels were broadly in favour of our proposals for a balance between bills and the pace of improvements. By contrast, English Nature and other environmental bodies were concerned that some statutory schemes had been excluded from the five year plan. For them the threat of legal proceedings by the EU concerning the Habitats Directive is a real concern.

These views were reflected in the final business plan, submitted in May 2003, which addressed the following range of issues.

Maintaining levels of service
With successful outperformance to date and the scope for making further efficiencies in the future, we would be able to continue to meet existing standards and invest significantly more in maintaining our assets without bills having to rise faster than inflation. However, new costs beyond our control, eg, changes in Inland Revenue tax rules, higher property rates and taxes, abstraction charges, pension costs and bad debts, all push costs upwards.

Balancing demand and supply
We have some of the fastest population growth in the country, but the low level of infrastructure charges set by Ofwat means that growth is not self financing. Despite this, we plan to continue to meet all new demands for water and sewerage services unless we face drought conditions worse than those of 1975/76. In conditions more severe than these it may be necessary to impose restrictions on use since it is neither practical, economic nor environmentally sustainable, to meet all demands under extreme circumstances.

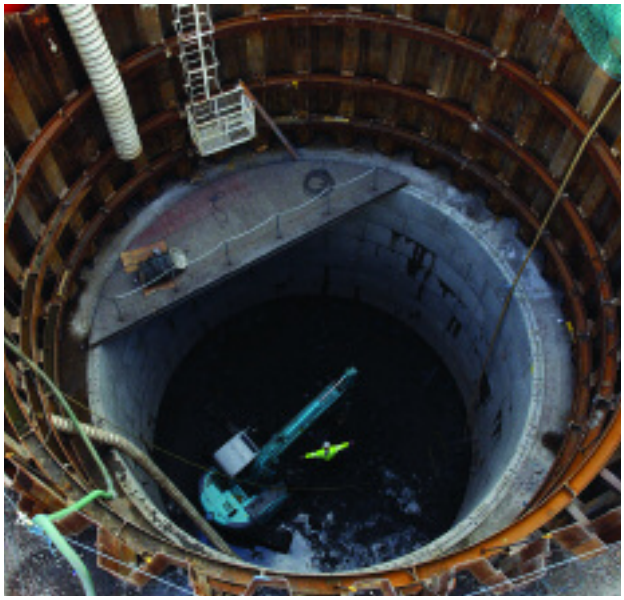
Sewage flooding
We proposed to eliminate virtually all risk that customers' properties would be flooded internally with sewage more than once in 10 years, and to deal with the worst cases of external flooding.

Environmental and quality improvements
The quality and environmental improvements stipulated by ministerial guidance will mean a substantial rise in customers' bills. The additional investment is mainly directed at phosphorous removal from effluent discharges to the Hampshire Avon, and accelerated work to eliminate low flow problems.

Final business plan
The bill increases in the final business plan are 32 per cent above inflation over the five years. This is significantly higher than Wessex Water's draft business plan which limited price increases to 12 per cent above inflation. This is mostly due to the pace and scale of the required environmental investment. While Wessex Water fully supports the need for this investment, it continues to question the timing given the major impact it will have on customers' bills. Ofwat's draft decision on bill rises cut investment by 17 per cent and consequently bill rises were reduced to 20 per cent above inflation. This is still nearly double our own preferred plan. Ofwat makes its final decision in December 2004 following further ministerial guidance.

Looking ahead

Advocates of sustainable development argue that society should not expect cheap water, that its full cost should be recognised and at the same time that the least affluent should be protected. Although measures such as vulnerable users' tariffs do exist, they are underutilised and more could be done to devise tariffs that incorporate the ability to pay and actual consumption. However, water companies do not have the power to bring this about unilaterally and the relatively low incidence of metering in the UK and inertia in government are obstacles in the way of change. Either way, we neither have, nor seek,



Some of the tunnelling work involved in Wessex Water's £28 million scheme to upgrade Bath's sewerage system.

the powers to disconnect households, believing instead that legal proceedings to recover payment can be taken as a last resort.

Wessex Water recognises that debt is a genuine problem for many and we are working on ways to distinguish more clearly between those who 'can't pay', and those who 'won't pay'. We have also been improving our joint working with Citizens' Advice Bureau offices to assist customers who cannot pay their bills.

PUBLIC HEALTH – WATER QUALITY

Good drinking water quality is vital to public health. Intensive investment over the past 10 years to meet increasingly strict EU standards means that we supply some of the best quality water in the UK, achieving around 99.9 per cent compliance with drinking water regulations since 1997.

What we do

Producing high quality water for human consumption involves different levels of treatment depending on its source. Groundwater is relatively clean and only requires chlorine disinfection before it is suitable for consumption. Surface water from reservoirs requires separation of solid matter such as silt and sand using coagulants, as well as carbon filters or ozone to remove pesticide residue, taste and odour. In both cases continuous monitoring checks that treatment and storage is operating correctly, implementing automatic shutdown systems if chlorine levels are outside pre-set limits.

Our strict quality assurance system meets the quality standard ISO 9002 and extensive investment in the infrastructure ensures we maintain and meet ever tightening standards. This has included modernisation of more than 900 kilometres of water mains in recent years.

Progress

We have maintained good progress with our water supply quality enhancement programme and investment is focused on tackling water quality issues such as iron, nitrates, cryptosporidium and lead.

Modernising mains

Operation Clearflow is a £38m project to modernise nearly 600 kilometres of mains between 2000 and 2005 with the principal aim of meeting the iron drinking water standard. Work is currently ahead of schedule with 484km already renovated against the regulatory target of 470km for the corresponding period. During the year we relined or replaced 116km of iron mains, principally in Yeovil, Sherborne, Wincanton, Ilchester and Bridgwater.

Improvements at treatment works

Nitrate levels in the raw waters at some of our sources are rising as a result of groundwater pollution from intensive agriculture. Improvements are being made at various locations to ensure that the water we put into public supply meets the prescribed limits for drinking water. Work was completed at Black Lane, Blandford; Belhuish, Lulworth; Milborne Wick and Milborne St Andrew and is underway at Shepherds Shore, while options are being appraised for Fovant and Clarendon.

As a result of earlier investment all our surface water treatment plants meet the Drinking Water Inspectorate's guidelines for removing cryptosporidium. At some groundwater sources there is a risk that under extreme weather conditions this parasitic protozoan could enter raw water supplies. To avoid this we are taking action to safeguard 18 sites and have already completed 14, with six of those in 2003/04. The range of solutions includes membrane technology, improved monitoring and source control and replacement of sources by less vulnerable ones. Investigations at three sites indicate that the risk of contamination can be ruled out, so no treatment improvements will be necessary at these.

We continue to make good progress towards meeting the long term standard for lead in drinking water and have installed 10 new orthophosphate treatment plants to reduce the leaching of lead in the water supplied to properties with lead service pipes. We are also investigating the effectiveness of lead service pipe replacement in one zone in west Somerset.

Performance

Headline indicators - drinking water	2003/04
Drinking water - compliance with quality standards	99.93%

Looking ahead

Although water treatment at the point of abstraction has contributed to public health significantly for many years, increasing amounts of energy and chemicals are being used in order to achieve very marginal improvements, often on the basis of extreme precaution. We are keen to see the development of more low-tech and sustainable methods and two years ago trialled an innovative way of lowering nitrate levels in groundwater. This used a glucose solution as a carbon source to activate the bacteria that assimilate nitrates.

It is a promising approach but the local geological strata meant that the location was unsuitable for this technique. It is clear to us that in the medium to long term we must consider better catchment management. This requires farmers to adopt best practice methods of applying fertilisers and pesticides – commonplace in much of Europe, but not in the UK. We hope that the Voluntary Initiative for pesticides reduction will provide lessons on how to improve agricultural input management, without imposing punitive measures on the farming community.

CUSTOMER SERVICE

Good customer service is central both to social sustainability and to Wessex Water's own success as an organisation. Our policy is to remain at the forefront of customer service and standards and pursue the delivery of ever higher standards. During Wessex Water Authority's early years, the quality of service provided was neither assessed nor measured and the very concept is absent from early Authority reports, with defined customer standards not included until 1980. Today, such standards and data are crucial for ensuring that our 'contract' with our customers is being fulfilled.

Ofwat plays a key role in this process and the price limits it sets every five years based on our business plan largely determine our income and our investment in improving service standards. Our 2000-05 Target Standards and Public Monitoring Plan describes the outputs to be achieved within the price limits allowed for customers' bills. Ofwat also monitors a core set of service standards and, combined with certain environmental criteria, carries out an annual operational performance assessment exercise.

What we do

- We run a joint billing venture with Bristol Water that has improved standards of service and reduced costs. All customers in the Bristol Water/Wessex Water area benefit throughout the year from a single point of contact for billing and customer services.
- Our Customer Care Plus scheme offers additional customer services for the elderly, disabled and customers who have additional needs, eg, literature in braille, large print or a language other than English.
- The Wessex Water Promise scheme for customer guarantees and compensation exceeds the statutory Guaranteed Standards Scheme.

Progress

Standards and guarantees

- Ofwat's price limits legislate for customer service standards to reach a certain level. We have committed to using efficiency savings to make improvements beyond these standards, with efforts directed at alleviating sewage flooding and low water pressure.
- The Wessex Water Promise remains one of the best overall guarantee schemes in the industry. Minimum compensation payments were retained at £35 but improvements have been made in areas such as sewer flooding, direct debit payments, debt collection agencies, replacement bills and unoccupied properties.
- We introduced further new promises based on Customer Care Plus.

Communicating with customers

- We have improved the design of our bills still further to help the visually impaired and provide more information to customers.
- We have set up direct debit arrangements over the telephone and used *People Matters* training for all call centre staff. This helps agreement on payment methods with the customer and ensures calls from customers who are behind with payments are handled appropriately.
- Our magazine ***Inflow***, covering a range of issues, was sent out with bills to every household.
- We raised the profile on frost protection by means of a newspaper campaign and 'naughty' postcards, which proved highly effective; we also ran a water efficiency campaign.

- We continue to improve our communication with industrial and commercial customers through our *Corporate Solutions* newsletter, seminars, individual site visits and an improved website.

Performance

Headline indicators - water for customers	2003/04
Properties at risk of low pressure	299
Properties with unplanned supply interruptions > 12 hours	331
Water supply restrictions	0

Headline indicators - sewerage services	2003/04
Properties at risk of sewage flooding - once in 10 years	480
Properties flooded by sewage	90

Headline indicators - customer service	2003/04
Billing contacts dealt within five days	100%
Written complaints dealt within 10 days	100%
Metered customers - bill based on meter reading	100%
% of calls answered within 30 seconds	97%
Infringements of Wessex Water Promise for service	803

WORK IN THE COMMUNITY

We are committed to playing a full part in the communities we serve and the wider global community and have an extensive range of services to that end.

What we do

Our education service is run by dedicated and trained education advisers and thousands of children benefit from access to nine education centres, a dedicated website section, supporting literature and our advisers.

Our extensive speaker programme and numerous guided tours around operational sites cover a range of issues, notably water efficiency and the work of WaterAid. For 10 years the Wessex Watermark grant scheme has supported hundreds of environmental projects throughout the region.

Through both financial and in kind support Wessex Water assists the work carried out by charities and non-profit making organisations within our region. Our staff raise thousands of pounds for charity in their own time through the Community PlusFund and for every £1 they raise the company matches it up to a total of £250.

Every year customers and staff in the region give their support to WaterAid, the water industry's charity, by donating money and organising fundraising events.

Clean water is essential for life but 1.1 billion people have no access to safe water and 2.4 billion lack adequate sanitation. It is estimated that half the world's hospital beds are occupied by people suffering from diseases associated with dirty water and poor sanitation. Since 1981, WaterAid has been working through partner organisations and using low-cost technologies. It helps poor communities in developing countries achieve sustainable improvements in their quality of life by improved domestic water supply, sanitation and associated hygiene practices.

Progress

In 2003 Wessex Water became a signatory of the United Nations Global Compact. Based around nine principles covering human rights, labour standards and the environment, this seeks to advance responsible action by business. The global compact is a voluntary initiative relying on accountability and transparency and there are 37 signatories in the UK, of which Wessex Water was the first water company. We were also instrumental in enabling the city of Bath to become the first UK city to commit to the compact.

In 2003/04 we opened a new study area at our sewage treatment works in Holdenhurst, near Bournemouth, offering an indoor teaching area with facilities to study micro-organisms. The 10th anniversary of the Wessex Watermark scheme was marked by three £10,000 special grants. These supported the creation of 10 wildlife ponds in Dorset schools, the renovation of a derelict cemetery in Somerset to create an urban nature reserve and environmental projects at four primary schools in Bristol and Bath. In 2003/04 around £615,000 was raised in the region for WaterAid.

Headline indicators - community involvement	2003/04
Community investment	£430,000
Children educated through school visits	15,000

TALKING TO OTHERS

What we do

Partnership can be dismissed as an easy soundbite concept, but working with organisations and interests outside Wessex Water is crucial to fulfilling our obligations successfully and improving the way we work. This was recognised and acted upon when Wessex Water Authority was first founded, with formal consultation arrangements set up in the early years, and remains as true as ever today.
As part of a highly regulated industry we come into contact with an extremely broad range of environmental, social and economic activities. A

broad spectrum of individuals and groups is interested in the day to day running of water supply and sewerage, in our medium term programmes of work, and our long term direction. We believe in listening to the point of view of others and building constructive relationships. The following is a profile of our regular and ongoing stakeholder dialogue.

Customers – our call centres based in Nailsea and Bath are staffed by people, not machines. Staff are trained to respond to customers to the best of their ability and have stretching targets for their speed of response. Wessex Water staff are encouraged to treat customer enquiries as a top priority and a monthly tracking survey allows us to assess customers' views on the services we provide. We maintain close contact with industrial and commercial customers, discussing issues such as water efficiency measures.

Customer representation – we attend all meetings of WaterVoice Wessex, the independent customer watchdog, and convene two Customer Liaison Panels ourselves which bring together local authorities and other customer interests. Their chair sits on the board of Wessex Water Services Ltd as a non executive director.

Community groups and local business – in order to minimise disruption where infrastructure schemes are underway, such as mains relaying, we meet with parish and town councils and local traders to discuss the scope and timing of work.

Regulators – discussions with Defra, Ofwat, the Drinking Water Inspectorate, the Environment Agency and English Nature occur on a daily basis, covering both detailed technical points and broad strategy.

Land-based industries and developers – a panel meets twice yearly with representatives of the National Farmers' Union and the Country Land and Business Association. Among other issues it covers water resources and the reuse of sludge in agriculture. On a day to day basis, our developers' group handles planning application discussions with local authorities and property developers.

Strategic advice – our Environment and Public Health Advisory Panel reviews the company's approach to a range of sustainability issues. The panel's chairman, a non executive director of Wessex Water Services Ltd, passes its recommendations to Wessex Water's board. We have a long-standing relationship with the sustainability charity Forum for the Future in a joint work programme which has covered renewable energy, biodiversity, ethical investment, sustainability and water sector regulation and the company's long term sustainability vision. We also take part in regular discussions with organisations such as Oxera, the Centre for Regulated Industry and the Fabian Society.

Non-governmental organisations – we strongly believe in establishing a dialogue with bodies that have a particular interest, such as the Wildlife Trusts and Surfers Against Sewage, and this has helped build constructive relationships.

Employees

CONDITIONS, TRAINING AND DEVELOPMENT

Our long term sustainability vision

A sustainable Wessex Water would mean…

positively contributing to the health, skills, knowledge and motivation of all our employees

For more information see pages 34-37

Our employees are key stakeholders in Wessex Water and critical to the success of the company both now and in the future. This year a number have been celebrating 30 years with Wessex Water and together with those who have joined since 1974, comprise a workforce with extensive experience and expertise in the water industry. Their dedication and the sustained commitment of our parent company, YTL Power, puts Wessex Water in a strong position to develop for the future.

From the early years of the old authority the water industry has incorporated the latest advances in technology, transforming all aspects of the company's functions and requiring from employees a willingness to change working practices. Today, video cameras examine and record the condition of sewers, computers calculate flows in the distribution and sewerage systems, aid design work for all kinds of schemes and are an essential part of the intricate and complicated billing and customer contact procedures. Everyone is keenly aware of the importance of the customer and the absolute necessity of putting them and quality of service and standards before all else.

Changes in the water industry have asked a great deal of Wessex Water's employees and in response they have shown an outstanding willingness to adapt and move with the times. Alongside, there have also been changes of benefit to them with suggestions and

innovations welcomed, performance related productivity plans and profit sharing schemes introduced. A wide range of benefits, such as healthcare plans, are now available and whenever possible employees have been shareholders in Wessex Water, or its parent company, making them an integral part of the success of their business.

What we do

Developing employees

Employees can benefit from a number of initiatives to develop their own skills and careers. These include online learning either at work or home, National Vocational Qualifications, apprenticeships, graduate programmes and a four year programme tailored for Wessex Water through the Chartered Institution of Water and Environmental Management.

As part of Wessex Water's senior management development programme managers are encouraged to work in the community. This has meant involvement in a wide variety of schemes and organisations, eg, school governorships, a review with the Friends of the Earth recycling business to help it decide on the way forward and a youth crime prevention project to provide mentoring and education support.

Head of planning and developer services Mohammed Saddiq project managed a leaflet campaign for the Prince's Trust and is now a business mentor for ethnic minorities in Bristol. Head of asset management James Rider began working with Julian House, the Bath based charity for the homeless, in April 2003. He worked on installing a PC-based lone working system that staff operate via their mobile phones, and has now joined the board of management.
We are initiating a scheme to help young offenders within our region to gain skills and qualifications within our distribution teams.

Rewarding success

Flexible employment packages and attractive benefits enable Wessex Water to attract the best staff. To ensure we remain competitive, our pay practices are reviewed regularly and benchmarked with appropriate external organisations. All employees benefit from our performance related pay schemes which measure personal, team and company performance in relation to each individual's job.

Employee communications

News and developments within the business are regularly communicated through a variety of methods. All employees have access to the Wessex Water intranet with its extensive information about each department and all receive *Source*, a bimonthly magazine containing news and features about the business and staff.

After careful research, the monthly team brief has been relaunched to make team meetings more effective and to reflect more closely the needs of the business.

Pensions

We remain committed to providing good pension arrangements and employees may choose which pension scheme suits them, from a defined benefit, defined contribution or personal pension.

Whistleblowers' policy

Wessex Water provides opportunities for employees to express their concerns about malpractice or misconduct. In order to maintain the highest standards of honesty, openness and accountability a whistleblowers' policy, taking into account the Public Interest Disclosures Act, protects employees who voice concerns.

Headline indicators - employees	2003/04
Employee turnover	13%
Employees with access to formal bargaining	100%
Number of employees having an annual appraisal	54%

Looking ahead

The recruitment and retention of skilled, knowledgeable and committed employees is a crucial sustainability issue and is potentially one of the most difficult issues for the water sector in the medium to long term. This is partly connected to restructuring in the employment economy as a whole, in which short spells with any given employer become the norm. There is a need for employees at all levels of the company to be competent with technology, particularly as water treatment infrastructure becomes more hi-tech. Furthermore, as water services operate 24 hours a day, ways of ensuring adequate coverage around the clock are essential. As Wessex Water drives towards sustainability it will be crucial for all employees to understand what the company is trying to achieve and how, individually, they can contribute.

HEALTH AND SAFETY

The water industry encompasses potentially dangerous working environments such as confined spaces, deep waters, areas containing complex machinery, electrical apparatus and hazardous substances. All these make health and safety of paramount importance and positive measures and preventative action are needed to reduce the risks to

Wessex Water's head of economic regulation Andy Pymer works flexible working hours so that he is able to take his turn in caring for his two young children.

all. It is essential that we have safe, well maintained plant operated by trained, safety conscious staff.

Wessex Water is committed to protecting the health, safety and welfare of our employees and actively promotes good practice through education and information. An ongoing campaign under the slogan 'Not an Optional Extra' has helped to bring the issue of health and safety and good working practices to the attention of all employees.

What we do

We employ a number of measures to promote health and safety in the company including:

- a team of health and safety professionals and an occupational health service
- comprehensive training at all levels
- regular assessment of staff likely to be exposed to greater health risks
- thorough incident recording and monitoring
- auditing to ensure implementation of best practice
- communication of health and safety issues via a safety committee, a health and safety management group and departmental groups
- regular meetings with our contractors to ensure they meet the health and safety standards, and use of an approved list for the purchase of equipment.

We also actively encourage work/life balance initiatives and employees have welcomed these flexible arrangements.

Progress

This year proved challenging in that it was the first full operational year since the formation of Wessex Utilities Contracting. Considerable advances in health and safety have been made through the year and this is to be commended particularly in view of the mixed workforce that transferred into the business and the differing attitudes to health and safety.

The health and safety risk assessment programme has continued during this year. The programme includes review, assessment and reporting. As a result of new risk assessments being continually developed from site inspections and audits, there is a continual list of safety improvement measures.

Performance

Headline indicators - health, safety and wellbeing	2003/04
Reportable accidents per 1,000 employees	12
Sickness/absence - days/employee/year	9

Infrastructure

Our long term sustainability vision

A sustainable Wessex Water would mean…

the elimination of materials from all our construction operations and asset maintenance programmes that used inappropriately can result in damage to human health or the environment.

For more information see pages 34-37

ASSET INVESTMENT AND MANAGEMENT

Since privatisation, Wessex Water has spent around £2 billion on delivering higher standards and maintaining infrastructure. Driven by the need to meet European and national standards, around £750 million is being spent during the current asset management plan to accommodate population growth and increasing water consumption, to maintain our infrastructure and to improve customer services and the environment.

These projects bring with them tight delivery timescales and challenging capital efficiency targets. The environmental and social impacts of construction are also key issues and we consider the planning implications of new developments very carefully. Environmental assessments covering protected species

and habitats, cultural heritage, contaminated land, noise, odour, watercourses and drainage, rights of way and air quality, are carried out. As a reference point for engineers and operators, we use an environmental standard for design, construction and maintenance that covers these issues. We have also devised a measure that allows engineers to assess the likely carbon dioxide emissions in operating new schemes.

Progress

Around £170 million was spent in 2003/04 on new assets and maintaining the existing infrastructure. We are expecting to complete all the outputs agreed with our regulators for the current investment period on or ahead of time.

Investment 2003/04	Supply £'000	Sewerage £'000
Quality enhancement	11.400	81.090
Volume (pop. nos.)	6.196	5.325
Customer standards	1.995	3.107
Asset maintenance	27.024	33.643
Total	46.615	123.165

While some of this work is being carried out using contractor alliances, much has been brought in-house to be carried out by Wessex Engineering and Construction, WEC. WEC was formed from Wessex Engineering Services and Wessex Utilities Contracting and is in charge of three broad areas of work. These are: small schemes such as routine capital maintenance, design and construction of some capital schemes and the management of construction projects to be carried out by contractor alliance partners.

MAINTENANCE

It is critical that we maintain our existing assets in order for our network to function correctly and for water and sewage to continue receiving top quality levels of treatment. If an asset is vital to service provision or the cost of failure is more than the cost of replacement and repair, we carry out proactive maintenance. All maintenance investment proposals are rigorously analysed using whole-life costing.

Progress

Flow and pressure loggers have already been installed throughout our network so current efforts to reduce leakage involve the extension of pressure control, improvements to the metering of trunk mains, replacement of old polyethylene pipes known to leak badly and night flow monitoring.

Maintenance of our sewerage network principally involves renovation, refurbishment and replacement of sewers, intermittent discharges and sewage pumping stations, as well as jetting to clear blockages. The table below shows our progress within the current asset management programme (2000/05).

Performance

Headline indicators - infrastructure	2003/04
Leakage	20% (75Mld/d)
% of intermittent discharges in satisfactory condition	94%
Burst water mains per 1,000km	144
Sewer collapses per 1,000km	16
Water supply and sewerage investment (£m)	174.8

Looking ahead

It is unacceptable that assets should fail and compromise public health or the environment. Consequently, asset maintenance is of paramount importance if today's high standards are to be continued. Money allocated for capital maintenance is determined by Ofwat at each five-yearly price review and on the last occasion the money available to us was restricted, requiring further efficiency savings to compensate for the shortfall.

The problem is compounded because the average age of assets increases and the newer, more hi-tech assets we are installing now have shorter lives. We are in discussion with Ofwat on how much investment will be needed to maintain our existing infrastructure between 2005 and 2010. We believe that a sensible long term approach must involve the allocation of a reasonable level of funding for capital maintenance.

AMP3 progress	AMP3 so far	AMP3 originally planned
New or refurbished water treatment works	30	24
Renewed, relined or new water mains (km)	774	945
New or refurbished water pumping stations	17	8
New or refurbished water service reservoirs	9	5
Renewed, relined or replaced critical sewers (km)	136	120
Intermittent discharges improved/refurbished	442	526
Sludge treatment works new/refurbished	15	7
Sewage pumping stations new/refurbished	134	57

Finances

FINANCIAL PERFORMANCE

Our long term sustainability vision

A sustainable Wessex Water would mean…

maintaining a robust balance sheet and long term stable relationships with shareholders and creditors who share the company's commitment to sustainability.

For more information see pages 34-37

Introduction

Wessex Water aims to give all investors a good and secure return on their investment and the health of our finances is therefore of real importance to us.

A strong financial position is essential for water companies to maintain their contribution to the environment, the economy and social wellbeing since a company that makes consistent losses is not sustainable.

Financial indicators are inter-related and influenced by Ofwat, partly on the basis of our previous performance, eg, the regulator sets the levels of bills and this determines the cashflow to the company. Cashflow must be enough to enable a sufficient ratio of cash to the interest payable on loans, which in turn influences the balance of investment from equity, shareholders, and debt, and also our credit rating. A good credit rating means we can obtain finance from lenders on reasonable terms.

Similarly, Ofwat sets the minimum cost of capital for water companies, which affects profitability and the return required by investors. The consequences of a failure to provide satisfactory returns to investors would ultimately mean shareholders and loan investors withdrawing finance. In this event, intervention by our regulator and the government would be required to run and maintain our infrastructure and enable our regulatory investment in environmental and service improvements to continue.

Profitability

The results for 2003/04 reflect the ongoing impact of the 1999 price review and in particular Ofwat's decision progressively to reduce returns towards their assumed cost of capital – 4.75 per cent. In the regulated business profit before tax reduced by £8.5m or 13 per cent to £59.0m. Returns on the regulatory asset base were 6.4 per cent, on a post tax equity/pre-tax debt basis – a one per cent outperformance against the figure assumed by Ofwat at the time of the last review.

The reduction in regulated profit before tax comprised:

- turnover up by £19.2m or 7.3 per cent principally as a result of the price increase set by Ofwat of 3.8 per cent plus inflation of 2.6 per cent on average
- regulated operating costs up by £4.5m to £88.5m. This increase was caused by £3.6m additional costs to meet new standards and £2.4m inflation, partially offset by efficiency savings of £1.5m
- depreciation and infrastructure maintenance charges up by £2.2m as the quality investment and capital maintenance programme continued. Other operating income reduced by £0.4m.

Interest is our single largest expenditure and this year interest payable increased by £20.6m to £60.2m, but despite this our effective financing rate was only 5.8 per cent. The increase in interest charges reflected the additional debt following the refinancing in March 2003 which had a full year impact in 2003/04.

Taxation was a £4.3m credit in the year compared with the £7.4m charge last year. The credit comprised:

- a £5.8m current year corporation tax charge
- a prior year corporation tax credit of £15.8m
- a deferred tax charge of £5.7m.

The normal dividend policy of the board is to declare ordinary dividends equal to the return on the regulatory asset base. This is defined as the current cost profit available to shareholders after current year corporation tax but before prior year corporation tax, and deferred tax. Dividends declared in the year were £42.4m.

Cashflow and finance

Net debt increased by £65.6m to £1,073.2m and the regulatory asset base increased by £106m to £1,580m, leaving a debt to RAB ratio of 68 per cent. The net cash outflow of £65.6m comprised:

- an operating inflow of £199.3m
- capital expenditure and financial investment outflow of £163.6m
- dividend payments of £48.7m
- interest payments of £52.6m.

Following the refinancing of Wessex Water Services Ltd last year, we put in place sufficient facilities this year to meet the cash needs until the end of this regulatory cycle.

Environmental accounts and sustainability investment

Developing transparent and integrated accounts and accounting systems is essential if we are to know that we are heading towards sustainability. To this end, we have been developing two elements of sustainability accounting:

- environmental cost accounts: the hypothetical cost of reducing our environmental impacts to a sustainable level
- investment towards sustainability – a statement of our investment in the environment, communities, employees and infrastructure, split between mandatory and discretionary expenditure.

Environmental cost accounts

Conventional accounting practices rarely explain an organisation's impacts, such as carbon dioxide emissions and soil erosion, on the environment. If these costs are not adequately considered then future generations could pay an additional price in terms of further investment costs when the effects of environmental damage become more obvious.

Such costs increasingly need to be taken into account because of environmental regulation and taxes. Environmental accounting can help identify cases where moving towards environmental best practice reaps financial rewards in the form of cost savings, tax minimisation and environmental grants. All economic value flows from products and services provided by the environment and people, so an awareness of environmental costs and benefits and potential future problems can aid strategic planning and help reduce exposure to risks and liabilities.

Although environmental accounting is still evolving, we believe the figures shown below help clarify the financial cost of our main environmental impacts. They are based on an approach developed by the sustainability charity Forum for the Future to illustrate the hypothetical cost of reducing our environmental impacts to a socially acceptable and sustainable level.

First, we identify the most significant environmental impacts that are not already represented by costs embedded in the profit and loss account. These are often known as externalised environmental impacts and most companies would usually leave them to be managed by wider society or future generations.

Secondly, a financial value is placed on these impacts and in some cases this involves real market values for the avoidance of pollutants. In other cases, they come from our own estimates of restoration or abatement costs.

Finally, these environmental values are combined with the financial accounts for the period in question. This leaves an estimate of the profit, or loss, that would remain if expenditure were made to tackle our most significant external environmental impacts.

Using this methodology, we estimate our activities may have caused environmental harm that would cost £4.1m to avoid or restore. This figure is sensitive to the scope of environmental impacts being considered, assumptions used in the valuation of those impacts and to the degree to which life cycle impacts are taken into account.

Environmental cost statement - unaudited

Component	Consumption	Emissions (tonnes)	Target level (1997 - 60%)	Avoidance / abatement cost £	2003/04 £'000
Emissions to air Grid electricity	194.362 m kWh	CO_2 - 83,692 NOx - 234 SO_2 - 487	CO_2 - 36,074 NOx - 132 SO_2 - 400	CO_2 - 47,618 tonnes at £6.50 NOx - 102 tonnes at £14,000 SO_2 - 87 tonnes at £2,400	(310) (1,428) (209)
Natural gas	9.469 kWh	CO_2 - 1,799	CO_2 - 1,577	CO_2 - 222 tonnes at £6.50	(1)
Diesel oil	3.569 kWh	CO_2 - 899	CO_2 - 616	CO_2 - 283 tonnes at £6.50	(2)
Vehicles	2.303 m litres	CO_2 - 6,695 Other - 41	CO_2 - 2,176 Other - 144	CO_2 - 4,519 tonnes at £6.50 Other - NA	(29)
Methane (CO_2 equivalent)	-	CO_2 - 57,822	CO_2 - 29,403	CO_2 - 28,419 tonnes at £6.50	(185)
Other principal impacts Abstraction	Meeting Defra guidance on low flows at 'Priority Two' sites				(1,850)
Contaminated land	An estimated cost for dealing with land used for sewage disposal. The value is based on the current market cost for remediation.				(120)

CO_2 - carbon dioxide
SO_2 - sulphur dioxide
NOx - oxides of nitrogen
Other - transport NOx; non-methane Volatile Organic Compounds; Particulates <10 microns

Environmental cost	(4,134)
Profit after taxation as per the financial accounts	63.300
Environmentally sustainable profit	59,166

Headline indicators

Water resources	Change over the last five years	2003/04	Targets
Water consumption (litres/head/day) unmetered/metered	✖	157/135	
Security of supply index score	✔	100%	
Compliance with abstraction licences	~	99%	100%
% of households metered	✔	31%	
Comments - while the water we supplied was within our available resources, the dry summer and autumn of 2003 resulted in relatively high daily consumption.			

Sewage treatment	Change over the last five years	2003/04	Targets
% of rivers good or fair quality	~	95%	
Pollution incidents	✔	152	
Bathing water quality - mandatory standards	✔	97.9%	98% 2000-05; (s)100%
Population connected to compliant sewage treatment works with sanitary standards	~	100%	
Convictions	~	3	0
% of sludge reused for farmland, land restoration or energy	✔	99%	100% by 2005
Comments - water company investment in sewerage systems and sewage treatment works continues to benefit river and sea water quality. Better data systems and monitoring have helped us to identify weak spots in the sewerage system and reduce pollution incidents as a result.			

Emissions to air	Change over the last five years	2003/04	Targets
Energy consumption mkWh	✖	255.2	
Renewable energy	✔	18%	20% by 2005; (s)50% by 2020
Energy CO_2 (tonnes)	~	86,390	60% cut from 1997 to 2050
Methane emissions (tonnes CO_2 equivalent)	✔	57,822	
Greenhouse gas emissions (tonnes CO_2 equivalent)	✔	150,907	
Comments - process monitoring controls our energy use, in the face of the higher energy use demanded by treating sewage to tight standards. Reducing the sludge disposed in landfill has greatly reduced emissions of methane (a greenhouse gas).			

Biodiversity	Change over the last five years	2003/04	Targets
SSSIs in favourable/recovering condition	not available	83%	
Comments - English Nature monitors the condition of Sites of Special Scientific Interest. We estimate that around 380ha of our land is classified as SSSIs.			

Value for money and affordability	Change over the last five years	2003/04	Targets
Monthly survey - customers rating our services as good or very good	~	93%	95%
Customers on special needs register	✔	294	
% of households metered	✔	31%	
Comments - detailed surveys are carried out monthly to determine the views of our customers on the services we provide. Affordability is a concern as bills reflect the cost of major capital investment; water companies also take vulnerable customers into account when setting bill tariffs. The free meter option is publicised through billing literature, leaflets and our website. Wessex Water has the second highest proportion of households on a meter outside the relatively dry south east of England.			

Drinking water	Change over the last five years	2003/04	Targets
Drinking water - compliance with quality standards	✔	99.93%	99.9%; (s)100%
Comments - samples of the quality of the water we supply showed the equal highest ever compliance, aided by investment focusing particularly on nitrates, cryptosporidium, iron and lead.			

Community involvement	Change over the last five years	2003/04	Targets
Community investment (based on PerCent Club)	not available	£430,000	
Children educated through school visits	✔	15,000	
Comments - this community investment number is based on a calculation used by the London Benchmarking Group and includes charitable support, cause-related marketing and community and education work.			

Water for customers	Change over the last five years	2003/04	Targets
Properties at risk of low pressure	✔	299	600 by 2005
Properties with unplanned supply interruptions > 12 hours	~	331	Avg of 100, 2000-05
Water supply restrictions	✔	0	0
Comments - no supply restrictions have been imposed since 1976, due to careful balancing of water supply and public demand. Water pressure has been steadily improved through investing in pumping stations and larger pipes. The number of properties experiencing supply interruptions can be disproportionately influenced by a small number of incidents. The creation of our in-house labour force should help improve this situation.			

Sewerage services	Change over the last five years	2003/04	Targets
Properties at risk of sewage flooding - once in 10 years	✔	480	740 by 2005; (S) 690 by 2005
Properties flooded by sewage	✔	90	Avg 160 2000-05
Comments - more regular sewer jetting, pumping station improvements and the creation of storm tanks have reduced the numbers of properties at risk of and experiencing sewer flooding. We hope to expand this work in 2005-10.			

Customer service	Change over the last five years	2003/04	Targets
Billing contacts dealt with in five days	✔	100%	99% by 2005
Written complaints dealt with in 10 days	✔	100%	99.8% by 2005
Metered customers - bill based on meter reading	✔	100%	Avg of 99.9% 2000-05
% of calls answered within 30 seconds	✔	97%	97% by 2005
Payments under guaranteed standards scheme	✖	803	
Comments - ongoing investment and training at our call centres has kept our performance at or near 100% in this area.			

Health, safety and wellbeing	Change over the last five years	2003/04	Targets
Reportable accidents per 1,000 employees	~	12	
Sickness/absence - days/employee/year	~	9	
Comments - The reportable accident rate increased last year and this is due in part to the fostering of a 'no blame culture' which has meant more comprehensive reporting of accidents.			

Employees	Change over the last five years	2003/04	Targets
Employee turnover	~	13%	
Employees with access to formal bargaining	✔	100%	
Number of employees having an annual appraisal	~	54%	

Infrastructure	Change over the last five years	2003/04	Targets
Leakage	✔	20% (75Mld/d)	20% (75Mld/d)
% of intermittent discharges in satisfactory condition	✔	94%	100% by 2005
Burst water mains per 1,000km	✖	144	130
Sewer collapses per 1,000km	~	16	15
Water supply and sewerage investment (£m)	✔	174.8	
Comments - leakage is controlled through water flow and pressure loggers, night flow monitoring, pressure control, metering of trunk mains and customers' supplies and replacement of old pipes. Investment to improve intermittent discharges, eg, better screens and more stormwater storage is paying off in the form of less frequent sewage spills to watercourses. Unfortunately, it is rarely possible to predict where mains bursts or sewer collapses are going to occur. We are focusing on ways to remedy these problems more quickly when they occur.			

Key

✔ improvement or maximum position maintained (S) Stretch target

✖ decline ~ no continuous trend Water UK indicator