NATIONAL AUDIT OFFICE

ENVIRONMENT AGENCY

Efficiency in water resource management

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 73 Session 2005-2006 | 17 June 2005

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EXECUTIVE SUMMARY

Introduction

1 In the 2004 Spending Review the Treasury agreed efficiency targets with all government departments, informed by the results of the Gershon review of public sector efficiency.[1] As part of the efficiency target for the Department for Environment, Food and Rural Affairs, the Environment Agency has been set a target to realise efficiency gains of £73 million by 2007-08 from an annual expenditure in 2004-05 of some £850 million. The Agency is expected to realise these savings principally through efficiencies in flood risk management expenditure, greater emphasis on online services and savings in "back office" services such as finance and information technology. More details of the Gershon Review's approach to efficiency are set out in Appendix 1.

2 Prior to the Treasury and Gershon reviews, we began an examination of the scope for greater efficiency in that part of the Agency's business known as "water resources management", which costs some £114 million a year across England and Wales. The Agency has a duty to manage water resources to ensure that sufficient water is available to meet the needs of people and the environment. To fulfil this duty, the Agency:

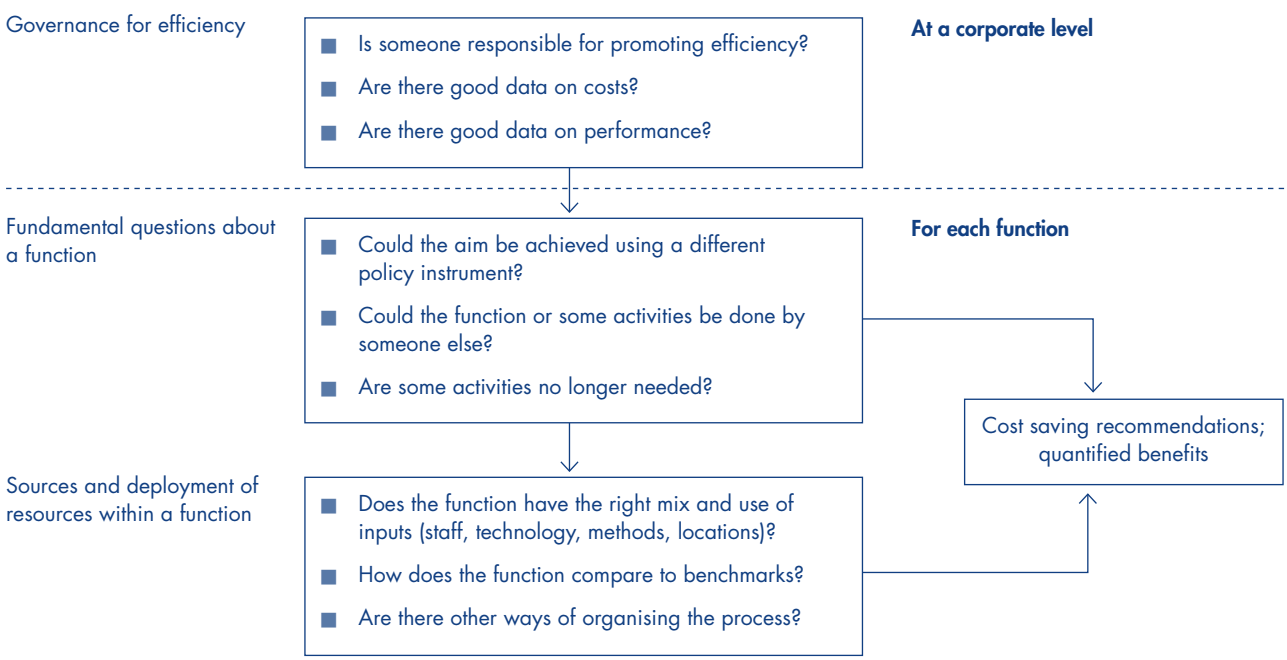
- collects and monitors data from a network of some 14,300 sites across the country; the data are also used to help reduce the risk of flooding.
- regulates the use of water through a system of water abstraction licences, enforcing licence conditions where necessary.

The whole of this cost is met by charges to two-thirds of the 47,600 licence holders. For the other third no charges are levied, where the licensed quantity falls below a de minimis level or where a statutory exemption from charge applies. In England, the Department sets policy for the Agency and provides advice in relation to implementation. The Agency's operations also extend to Wales, reporting to the National Assembly for Wales. Our report covers England only.

3 Our approach to reviewing efficiency, carried out in collaboration with PricewaterhouseCoopers, was to assess the extent to which the management of water resources was efficient in general terms, and then identify those activities where scope for efficiency improvement was greatest. In carrying out our review, a constant key factor was the need to make sure that any proposed changes kept the same level of effectiveness. Our approach is summarised in **Figure 1 overleaf** and explained in more detail in Appendix 2. The approach is generic and could be applied to other parts of the Environment Agency's operations, or to other government bodies.

1 *Releasing resources to the front line, Independent Review of Public Sector Efficiency,* Sir Peter Gershon, July 2004, Annex C.

1 General approach to reviewing efficiency as applied to the Environment Agency's management of water resources



Source: National Audit Office

Findings

4 The legislative framework for licensing was updated in the Water Act 2003.[2] The Water Act should allow the Agency to manage water resources more efficiently and effectively. The changes should simplify access to water resources and will:

- Remove more than 20,000 small abstractors from regulation;
- Bring into regulatory control some 6,500 significant abstractions which are currently exempt;
- Streamline the licence application and modification process, require all new licences to be time limited, and facilitate the trading of licences.

5 The Agency has reviewed the abstraction licence charging scheme to consider a more innovative approach and recover the costs associated with environmental improvement, and the modified requirements resulting from implementation of the Water Act 2003 and European legislation.[3] Proposals for a new scheme were published for initial consultation in 2004 and will be implemented from April 2006.

2 Relevant legislation was previously contained in the Water Resources Act 1991, as amended, and before that the Water Resources Act 1963.
3 Habitats and Species Directive 1992 (92/43/EEC) on the conservation of natural habitats, wild fauna and flora; Water Framework Directive, 2000 (2000/60/EC) establishing a water policy framework.

6 In general, we found that the Agency provides a well-managed and professional service. Our review nevertheless found scope for greater efficiency. In addition to the £1 million of savings which are expected from the Agency's own review of licensing, we estimate our recommendations could lead to further reductions of between £1.4 million and £2.5 million in the cost of managing water resources **(Figure 2)**. We also found savings of some £174,000 in other areas of the Agency, arising from improved control of the hydrometric network. Some of the savings to water resources (£1.0 million to £2.0 million) will result from reallocating costs to other parts of the Agency. The Agency does not currently have the detailed management information it needs to make a full assessment of the scope for efficiencies in its water resource actvities. The Agency is seeking to collate such information and once it is available, it should be possible to make further savings. The rest of this summary sets out where we consider savings are possible.

The Environment Agency needs better information on the cost of different water resource activities

7 The first step in quantifying efficiency is an assessment of the full cost of an organisation's programmes, activities and services. The Agency is required to calculate the full costs of water resource management to calculate abstraction licence charges. However, the Agency does not have sufficient information to show in detail how these costs are spent across the different water resource management activities, such as the monitoring of sites, maintenance of sites, analysis of data or licensing. Costing data have been used in the rest of this report where they were sufficiently reliable.

8 To better identify potential efficiency savings, the Agency will need to generate more robust cost data on its activities. The Agency is developing Activity Based Costing which, once introduced, should ensure that costs can be more accurately allocated, increase the transparency of charges and provide better management information. The Agency expects it will be several years before Activity Based Costing is fully embedded into the business. In the short term, therefore, the Agency is focusing on improving its management information.

2 Our recommendations could lead to reductions of up to £2.7 million

We estimate our recommendations could lead to reductions of up to £2.5 million in the cost of managing water resources, and £174,000 for other parts of the Agency, by:

- better control over the size of the network of monitoring sites;
- improved organisation and a review of the need and frequency of visits to sites;
- the use of new technology to automate data collection and transmission; and
- better organisation of data collection teams.

The Agency does not currently have the detailed management information it needs to make a full assessment of the scope for efficiencies in its water resource activities. The Agency is seeking to collate such information. We have highlighted areas where further savings should be possible, once better activity costing data are available.

Our other main finding was that water resource monitoring sites are unintentionally subsidising the Agency's flood defence work. If the Agency adopted a nationally consistent approach to the allocation of costs it could lead to a reduction in water resources' costs of between £650,000 and £1.7 million a year – and fairer charges to holders of water abstraction licences, who are not meant to be subsidising other Agency activities.

Source: National Audit Office

9 The Agency has devolved water resource management functions to its regions, in England and Wales, and we found a range of different practices in use. Activity Based Costing should also help the Agency focus on variations in regional performance and the practices which underlie that performance, identify and promote more widespread application of best practice, and thereby encourage efficiency and bring further savings. At the same time, the Agency might usefully review the value of allowing some areas of regional discretion, for example on the negotiation or calculation of different charge-out rates, where the exercise of this discretion brings costs without commensurate benefits.

There could be better control over the development of the monitoring network

10 The number of water monitoring sites in England has grown by 12 per cent in the last three years. The additional 1,500 sites, mainly for precipitation and level recording, have been added primarily as a result of the Bye Report on flooding.[4] Further growth is expected as the Agency further improves its flood warning services and responds to the needs of the Water Framework Directive. Despite the network's importance, however, no one group within the Agency is responsible for control of the network as a whole. The Agency could achieve efficiency savings if it looked more critically at the present and future need for sites. The Agency is reviewing its data collection requirements, including the number of monitoring sites. Clearer responsibility for network costs, allowing greater challenge on the need for sites, could realise the potential to reduce the number of new or existing sites needed. Reducing existing site numbers by 5 per cent for example could yield efficiency savings of up to £435,000 a year, of which £261,000 would be related to water resources.[5]

Regional charges for the Operations Delivery Workforce could be more consistent

11 Day-to-day responsibility for keeping data monitoring sites in good condition rests with the Agency's hydrometric teams. For routine maintenance, the Agency uses its Operations Delivery Workforce and contractors to maintain sites. The internal charging rates for the Operations Delivery Workforce in each region are determined and negotiated locally. Therefore, some variation in rates is to be expected, even though the Agency has national pay scales for the Workforce's staff. In practice, however, the rates range from £13 an hour in North East Region to £27 an hour in Thames Region. If all regions were charged at the lowest rate, total costs born by water resources could be reduced by some £330,000. The amount would, however, need to be reallocated to other functions within the Agency.

Visits to water monitoring sites could be prioritised more consistently

12 For those roughly 12,000 sites where data must be collected or equipment checked most often, the Agency makes around 150,000 visits each year – an average of 13 visits a site. However, the Agency does not consistently prioritise its site visits according to risk, importance or its own good practice. It needs to develop a nationally consistent approach to the prioritisation of site visits to challenge the need to visit so frequently. Nor does the Agency have reliable, consistent and comparable data across all regions setting out the cost of visits. We estimate that the organisation and carrying out of site visits costs approximately £3.8 million each year. A 5 per cent reduction in the number of site visits could release savings of £190,000 a year.

Use of new technology allows more efficient methods of data collection

13 The Agency uses various methods for collecting data on water levels and flows from its fixed installations:

- some collect and transmit data automatically (known as "telemetry");
- some collect data electronically on-site, which then needs to be collected periodically and transmitted manually; and
- others require data to be collected and transmitted manually.

14 Technical advances in collection methods allow the Agency to gather data more cost-efficiently. The Agency has introduced continuous electronic data recording where it would be cost-effective and such technology is used at around 35 per cent of monitoring sites. The introduction of new technology has also reduced the frequency of data collection visits and most sites are now visited monthly rather than fortnightly. The Agency has limited information on the costs of its technology and potential alternatives, or the scope for wider deployment of new technology. It needs to obtain such information, and review the options for using more cost-efficient technology, if it is to obtain the potential benefits of greater automation. To address these issues, the Agency established a Technology Evaluation Group in 2004. One of the tasks of the Group is to review the options for rolling out more cost-efficient technology.

4 An independent report by Peter Bye on flooding, and lessons to be learned, published September 1998.
5 The actual saving possible would depend on: the type of site being closed, as different sites have different associated costs; the geographic distribution of those closures; and the proportion of activity attributable to management overheads.

Cross-subsidy with flood risk management needs to be remedied

15 The Agency's network of 14,300 water monitoring sites in England provides data on water flows, levels and precipitation. The network costs some £13.7 million a year to operate. Most monitoring sites within the network serve water resources and flood risk management functions but some support one or the other. However, the cost of these joint sites is not allocated appropriately between the two functions. In most regions, water abstraction licence fees subsidise flood risk management costs. This reduces accountability for costs and the incentive to manage sites effectively. Better arrangements to allocate costs are already in place in two of the Agency's seven English regions, and two more regions are developing similar arrangements. The Agency needs, however, to adopt a nationally consistent approach to the allocation of costs between flood risk management and water resources. This should result in a reduction in water resources' costs of between £650,000 and £1.7 million a year across the Agency. In turn, this should lead to lower charges to licence holders and, where relevant, their customers. However, although total abstraction charges would decrease, the amount would need to be reallocated to the Agency's flood risk management function, the costs of which are largely funded by the taxpayer generally.

The Kielder reservoir agreement reflects the decisions taken at the time of privatisation

16 Under Section 20(1) of the Water Resources Act 1991, the Agency has a duty to enter into arrangements with water companies to secure the proper management or operation of reservoirs and other works related to the supply of water. In England, the agreements, with two water companies, Northumbrian Water and Severn Trent Water, cost £15 million in 2003-04. The agreement for the Kielder reservoir scheme, which costs some £12 million a year, is the largest of the agreements.

17 In line with the statutory aim to secure the proper management or operation of reservoirs, the Agency's Section 20 agreements provide annual payments linked to the value of the assets and, in some cases, payments towards operational and maintenance costs of the reservoir schemes. Kielder is unique among the agreements in that it makes an additional provision for a return on the capital investment incurred in the reservoir. Under the agreement, the Agency is required to pay Northumbrian Water £7.35 million a year in perpetuity, and to increase this amount in line with the Retail Price Index. In accordance with this increase, the Agency paid £11.4 million in 2003-04. Although the return on investment provision in the Kielder agreement is unusual compared to the other Section 20 agreements, it reflects what was needed, as part of the financial structure at the time of privatisation, to ensure the successful sale of the water company.

RECOMMENDATIONS

18 The recommendations below summarise the opportunities for the Agency to reduce the costs of water resource management.

a Assessing the full cost of water resource management activities, to help better identify potential efficiency savings. The Agency is developing Activity Based Costing which, once introduced, should ensure that costs can be more accurately allocated, increase the transparency of charges and provide better management information. *(paragraphs 2.6 to 2.7)*

b Adopting consistent cost allocation between flood risk management work and water resources – this could result in a reduction in water resources costs of between £650,000 and £1.7 million a year across the Agency. Total abstraction charges would decrease by this amount, and the Agency would need to reallocate the amount to its flood risk management function. Better allocation of costs will also result in fairer charges to licence holders. *(paragraphs 2.9 to 2.12)*

c Clarifying responsibility for network costs - this could lead to a reduction in the cost of operating the network of monitoring sites of some £435,000, of which £261,000 is related to water resources. *(paragraphs 3.4 to 3.11)*

d Adopting a risk based approach to site visits – this could reduce the number of visits needed to monitoring sites. The Agency does not consistently prioritise site visits according to risk, importance or its own good practice. It needs to develop a nationally consistent approach to the prioritisation of site visits to challenge the need to visit so frequently. A 5 per cent reduction in site visits could release around £190,000 a year. *(paragraphs 3.12 to 3.20)*

e Improving the information on the costs of technology and potential alternatives, and reviewing the options for using more cost-efficient technology – this could help obtain the potential benefits of greater automation. To address this gap, the Agency established a Technology Evaluation Group in 2004. One of the tasks of the Group is to review the options for rolling out more cost-efficient technology. *(paragraphs 3.21 to 3.25)*

f Reducing the regional variation in hourly charges for site maintenance by the Operations Delivery Workforce - this could lead to the reduction of some £330,000 in water resource costs, although this amount would need to be reallocated to other functions within the Agency. *(paragraphs 3.26 to 3.28)*




19 Our work at the Agency, and the general approach to seeking efficiency which we have set out in Figure 1 and Appendix 2, suggest that there a number of ways in which the Agency and other Government bodies might pursue efficiency, as set out in **Figure 3**.

3 Key steps to efficiency

Establish a corporate framework

- Allocate corporate responsibility for reviewing efficiency, with review mechanisms to match
- Develop sufficient and reliable accounting information on the costs of activities, through Activity Based Costing
- Ensure the availability of performance data on efficiency and not just effectiveness

Look at the need for and scale of each function or activity

- Review whether there is a continuing need for a function, and that the need justifies the resources applied
- Ask whether a different policy instrument would be a more efficient way to deliver the same aim
- Consider whether the responsibility and cost might be transferred to someone better suited to carry it (and similarly, whether there is scope to share costs with others doing similar work)

Examine the sources and deployment of resources within a function

- Examine regional or sub-organisational variations, in costs, performance and working practices
- Review performance against external benchmarks and trends over time
- Review the mix of inputs (number and type of staff; application of technology), how inputs are procured, and how they are deployed (organisation, processes and location)

Source: National Audit Office

PART ONE
Introduction





The Environment Agency needs to manage water resources in England carefully

Water is a scarce resource in England

1.1 Water is essential for people, industry and the environment. But the natural variability of the UK's climate can cause extremes of drought and flood and there is relatively little water available per person, less in fact than in Spain and Portugal. "Surrey is drier than Syria" may sound alarming, but it is accurate.[6] The UK's water resources therefore need to be managed carefully.

1.2 The UK's system of public water supply, from 23 private water companies, aims to provide people across England and Wales with a reliable, clean and healthy water supply. About 8,000 million litres a day are used by households in England and Wales and restrictions on supply are rare. Only 10 drought orders have been issued over the last five years, for example, and these did not restrict the availability of water to consumers. Another 8,000 million litres a day are used in agricultural and industrial processes, across a range of activities from heavy industry, such as steel-making, to high-tech manufacture, like electronic components. Power generation uses another 16,000 million litres a day from direct abstraction, mostly for cooling. In addition, other industry and agriculture (including the irrigation of crops) use some 4,000 million litres a day from direct abstraction from rivers and groundwater. Many of these industries would not be possible without the use of water. To replace a supply of 1 million litres of water a day would typically cost about £2 million. The Agency's regulation of abstraction, therefore, protects resources worth some £72 billion to licence holders. Clearly, water use is of such importance that its value to the economy as a whole is incalculable.

1.3 The Environment Agency (the Agency) has a duty to manage water resources in England and Wales to provide sufficient water to meet the needs of people and the environment. To fulfil this duty, the Agency:

- collects and interprets data on water levels and flow from a network of sites;
- regulates abstraction through a system of licences;
- provides data on water levels to help protect the environment;
- takes enforcement action in response to serious incidents and breaches of licence conditions; and
- develops strategies to manage future demand for water, including water companies' plans for maintaining water supplies and managing droughts.

6 Syria has 411m^3 of renewable water resources available for each person a year (World Resources 2002-04, World Resources Institute, July 2003, Syrian Arab Republic Country Profile for Water Resources and Freshwater Ecosystems, Annual internal renewable freshwater resources). The Thames Basin has 266m3 renewable water resources available for each person a year (Water Resources for the future - a strategy for England and Wales, Environment Agency, March 2001, Table 3.2).

1.4 The Agency spends some £114 million a year managing water resources, the whole of this cost being met by charges to around two thirds of its 47,600 licence holders. The management of water resources is closely linked to several other Agency functions, particularly flood risk management, and the protection of water quality and wildlife habitats.

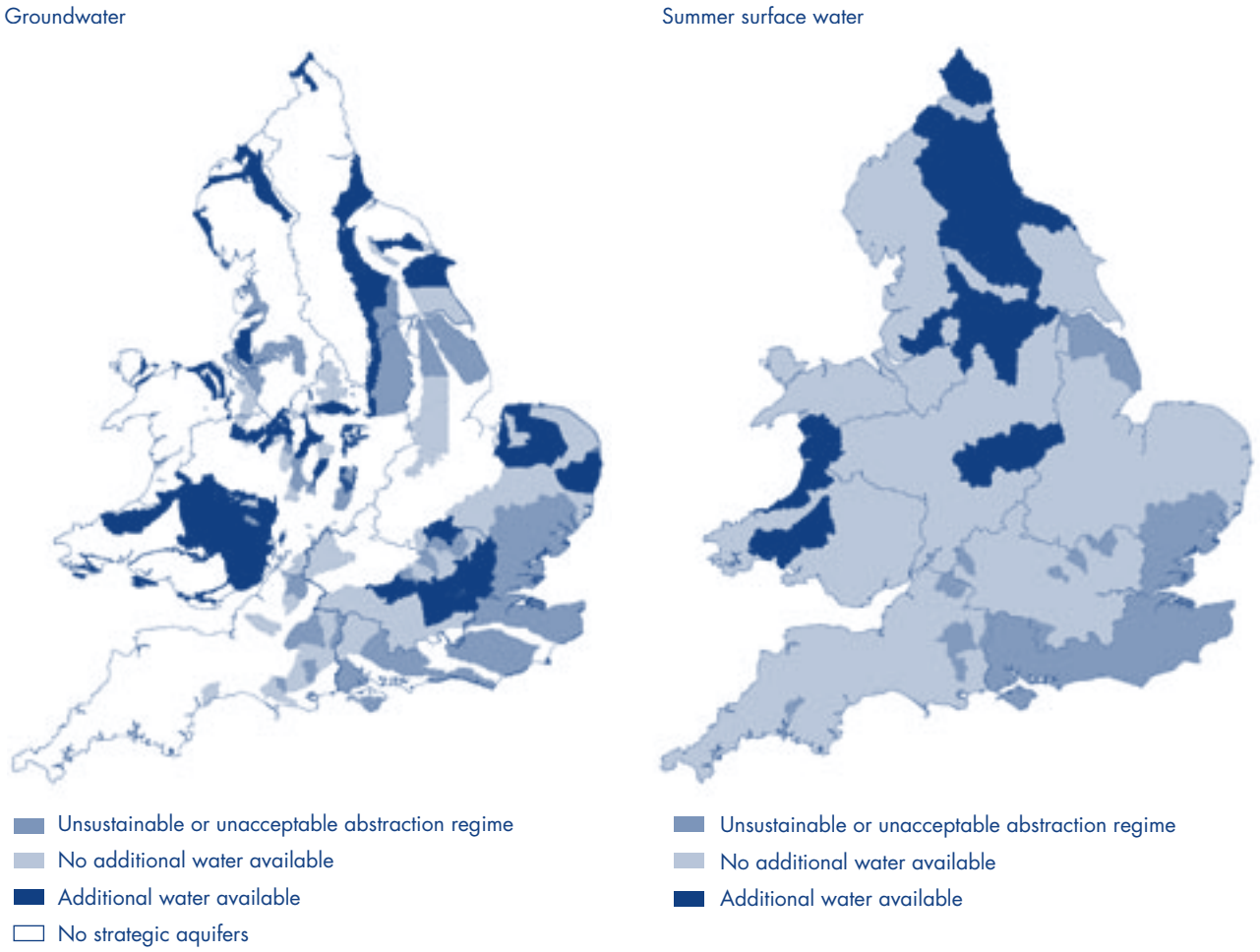
1.5 The Agency was established by the Environment Act 1995 which requires it to contribute to the objective of achieving sustainable development. In addition it has a duty under the Water Resources Act 1991 to secure the proper and efficient use of water resources in England and Wales. The Agency is organised into 23 areas within seven regions in England and three areas in Environment Agency Wales **(Figure 4)**. This report looks at the scope for greater efficiency in water resource management in England. In Wales, the Agency is accountable to the National Assembly for Wales.

4 The Environment Agency is organised into 23 areas within 7 regions in England

Source: Environment Agency

1.6 Water usage fell between 1995 and 2000, reflecting big reductions in leakage from some parts of the public supply network and a decline in industrial use. But the availability of water cannot be taken for granted: 2003 was one of the driest years on record across England. Since then rainfall totals have risen and the situation has improved significantly. Even so the Agency believes that abstraction is unsustainable in some parts of England, notably the South East **(Figure 5)**. The need to manage water resources remains a high priority for the Agency.

5 The availability of water varies significantly across England and Wales



Source: Environment Agency, 2001

NOTE

Groundwater is water within the saturated zone of an aquifer. Summer surface water is water open to the atmosphere in rivers, streams, ponds, lakes, marshes, wetlands and transitional waters.

The Agency controls the volume of water abstraction through licences, strategies and agreements

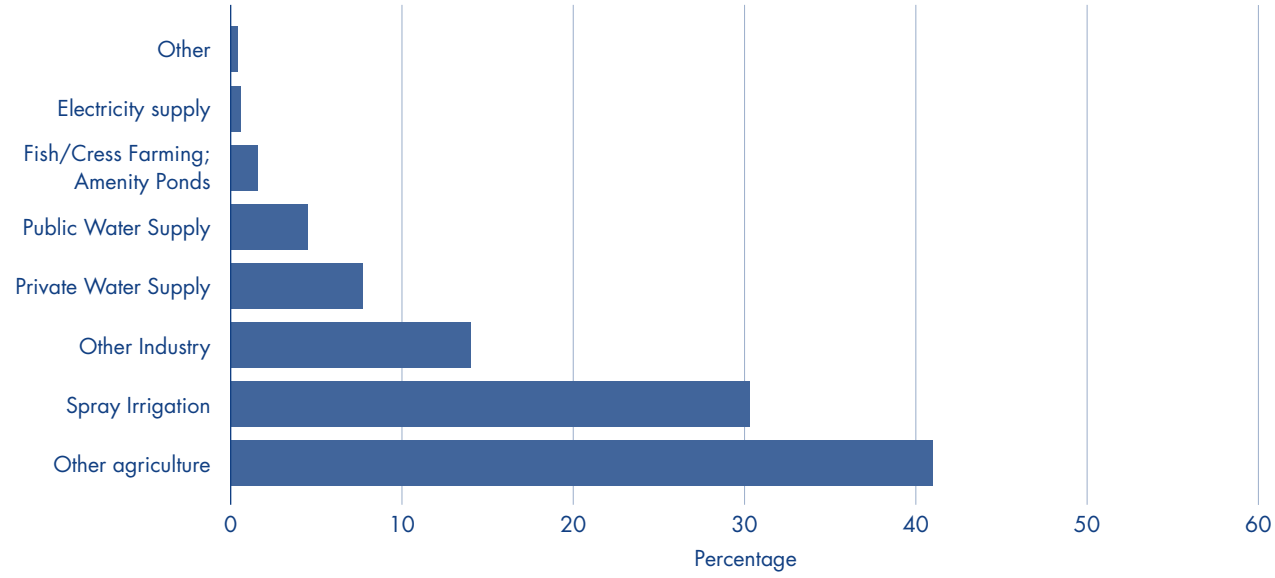
1.7 Those wishing to abstract water over certain limits must obtain a licence from the Agency and, in most cases, pay an appropriate fee. In approving licences, the Agency takes into account the impact on the environment and on existing abstractors. Once the licence is issued, the Agency checks that the terms of the licence are being complied with and, if not, takes enforcement action.

Between 1998-99 and 2003-04, there were 104 prosecutions for non-compliance with abstraction and impounding licences. A further 114 formal cautions were issued, with warning letters sent in another 1,285 cases.

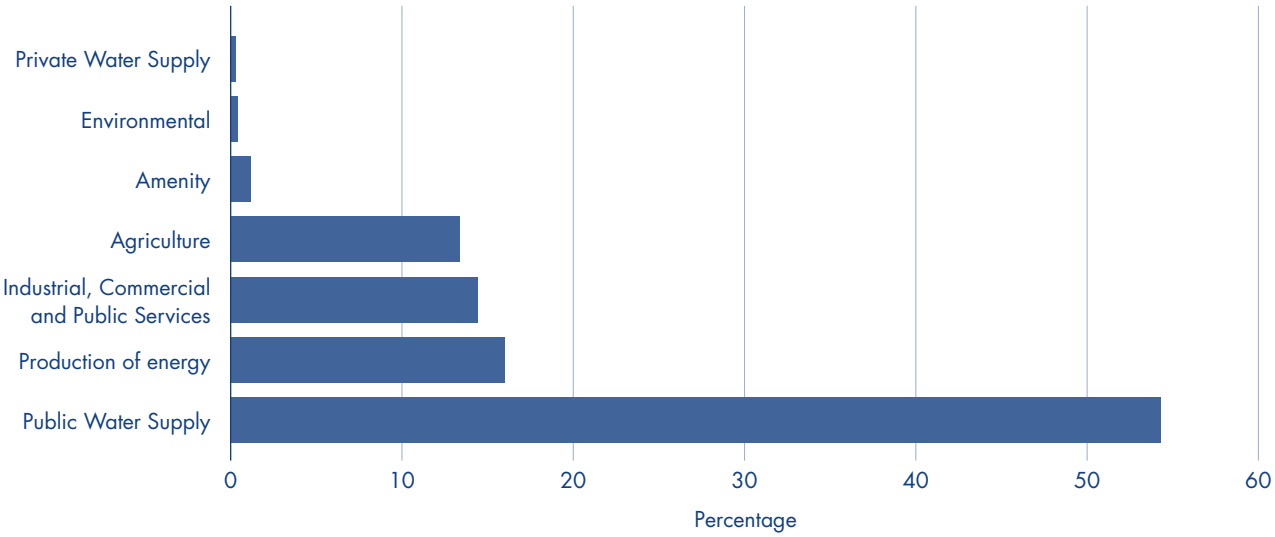
1.8 Most of the Agency's 47,600 water abstraction licences are issued to farms and other types of industry. However, most of the water abstracted is used for public water supply or in energy supply **(Figure 6)**.

6 The majority of abstraction licences are for agricultural use, but most of the water abstracted is for public water supply

Proportions of abstraction licences by purpose, January 2004, England and Wales.



Proportions of chargeable licensed water volume abstracted by sector, January 2004, England and Wales.



Source: Environment Agency

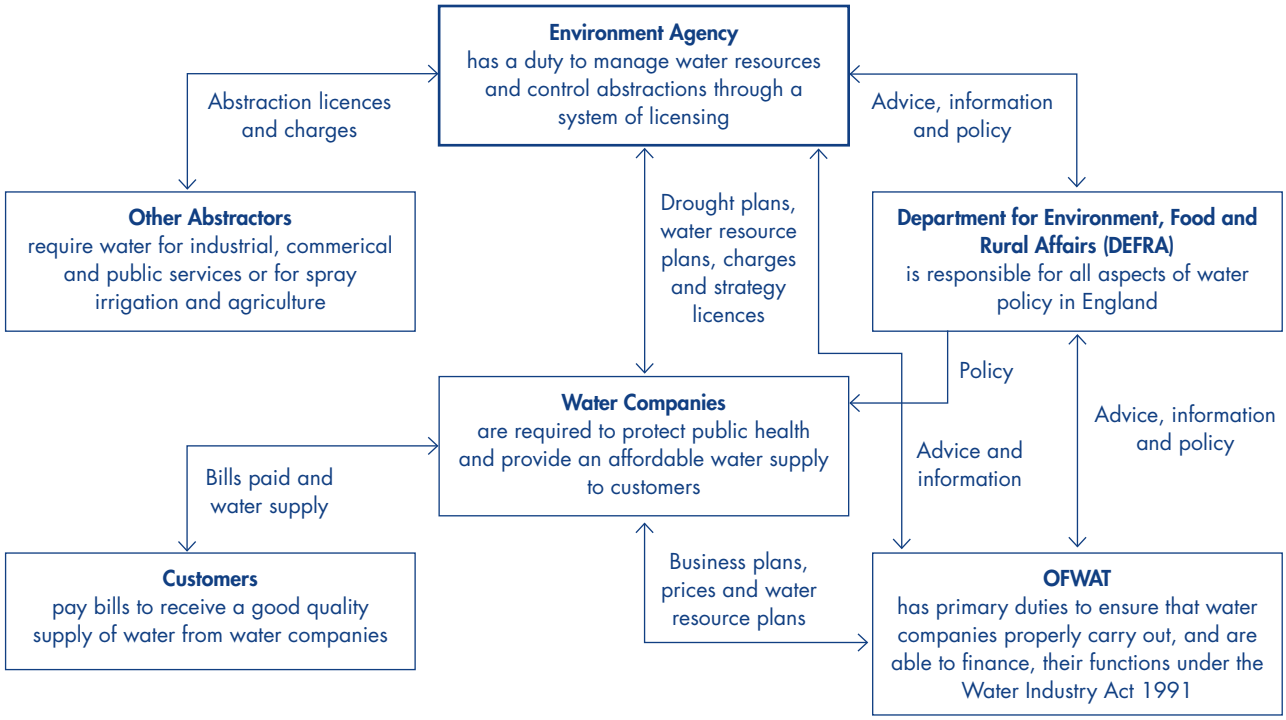
1.9 In 1999 the government published "Taking Water Responsibly" in which it set out its decisions, following consultation, on necessary changes to the abstraction licensing system.[7] In 2001, the Agency published "Water Resources for the Future", a strategy which looked ahead 25 years.[8] In catchments where abstraction is out of balance with the available resource, the Agency is seeking to redress the situation through its Restoring Sustainable Abstraction Programme. The Agency is developing strategies for each of the 126 river catchment areas in England.[9] The Agency is consulting local stakeholders to ensure the strategies balance the needs of abstractors, other water users and the aquatic environment.

The Agency works with a number of other bodies in its management of water resources

1.10 The Department for Environment, Food and Rural Affairs (the Department) is responsible for all aspects of water policy in England. The Department has a duty to interpret policy, law and quality standards set at European level and works closely with the Agency.

1.11 The Agency works with a number of other organisations in the management of water resources, including water companies and the Office of Water Services **(Figure 7)**.

7 The Environment Agency provides policy, regulation and advice to a wide range of stakeholders in England



Source: Environment Agency

7 Taking Water Responsibly, Government decisions following consultation on changes to the water abstraction licensing system in England and Wales, Issued jointly by the Department of the Environment, Transport and the Regions and the Welsh Office, 1999.
8 Water resources for the future: A Strategy for England and Wales, Environment Agency, 2001.
9 The strategies are known as "Catchment Abstraction Management Strategies" (CAMS).

There have been recent major changes to the legislation governing water resource management

1.12 The legislative framework for water abstraction licences was established in the Water Resources Act 1963 and amended and consolidated in the Water Resources Act 1991. Since the Water Summit in 1997, the government has moved towards greater protection for the environment and greater control over abstraction and the management of water resources.[10] As a result, a new Water Act was passed in 2003. The Act should enable the Agency to manage water resources better and give it stronger powers against abstractors who cause environmental damage.

1.13 In 2000, the Government asked the Agency to review the abstraction licence charging scheme. The Agency published a consultation document in January 2004 on the options for a new charging scheme, including a proposal for a national standard unit charge.[11] The aim is to consider a more innovative approach to the use of charging and provide a mechanism for the recovery of costs associated with, for example, environmental improvement, changes to the scope of licensing introduced by the Water Act 2003 and European legislation.[12] Once approved by the Secretary of State the new scheme will be introduced in April 2006.

Report issues and methods

1.14 Our report reviews the scope for potential efficiencies in the £114 million the Agency spends each year on water resource management. We focused on those areas that offered the greatest potential for efficiencies without affecting the Agency's effectiveness. The areas examined were:

- The arrangements for paying for water resources (Part 2 of this report);
- The collection of data on water resources (Part 3).

Our work did not extend to the effectiveness of the abstraction licensing system or charges. The former was the subject of extensive consultation prior to the Water Act 2003, and the latter is subject to an ongoing review by the Agency. The report focuses on the management of water resources in England.

1.15 This report draws on a wide range of sources of evidence, including meetings with Agency managers and staff, reviews of files and management information, process mapping, regional surveys and comments from stakeholders. The fieldwork for the report was assisted by staff from PricewaterhouseCoopers LLP, working with a team from the National Audit Office. Our methodology is set out in more detail in Appendices 2 and 3. A summary of responses from stakeholders is set out in Appendix 4.

10 Water Summit, UK Government water conference, London, 19 May 1997.
11 Review of the water abstraction charges scheme, Consultation Document, Environment Agency, January 2004.
12 The Habitats and Species Directive – Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, 1992. The aim of this Directive is to promote the maintenance of biodiversity. The Water Framework Directive – Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy. The aim of the Directive is to encourage Member States to introduce a co-ordinated approach to water management based around river basins.

PART TWO
Management of costs and charges





The Environment Agency is required to fund the whole cost of managing water resources from water abstraction licence fees

2.1 The Environment Agency is required by statute to recover its entire expenditure on the management of water resources through licence fees.[13] The total operating cost of water resource management in England and Wales for 2003-04 was approximately £114 million. Since 1996-97, total costs have risen by some 13 per cent in real terms. A breakdown of costs by type is shown in more detail in **Figure 8 overleaf**. Costs are mainly incurred on:

- Collecting and analysing data from the network of 14,300 river, rainfall and groundwater monitoring stations;
- Improving, developing and maintaining the monitoring network;
- Issuing and updating licences;
- Drawing up Catchment Abstraction Management Strategies (CAMS);
- Augmenting river flow;
- Technical assessments, including modelling, associated with the above activities.

2.2 The Environment Agency manages water resources through integrated operational teams located in its 26 Areas across England and Wales. The teams are broadly split into the following groups:

- **Hydrometric teams**, who provide the data on river flows, rainfall, and groundwater levels, either for catchment-wide assessments of resources or for specific studies in relation to proposals for new abstractions. They also provide a service to flood risk management and other functions of the Agency such as water quality.
- **Hydrology and hydrogeology teams**, who analyse hydrometric data and advise on the extent to which a new abstraction would alter patterns of flow.
- **Fisheries and ecological specialists**, who advise on the potential effect of a new abstraction on the water environment, and whether mitigation or adaptation might be required.
- **Compliance monitoring teams**, who "inspect" abstractions, including verification of self-monitoring undertaken by the abstraction licence holders.
- **Water Resources Regulatory teams**, who administer and determine applications for new licences, maintain public registers and deal with changes to existing licences.
- **Other teams**, such as legal and finance staff, customer services and business planners.

2.3 The Agency does not have detailed central records of how many people it employs on these tasks. However, estimates of staff numbers by function are shown in **Figure 9 overleaf**. As the Figure shows, most of the Agency's water resources management staff work in operational and policy teams covering hydrometry, hydrology, hydrogeology and the administration of the licensing system.

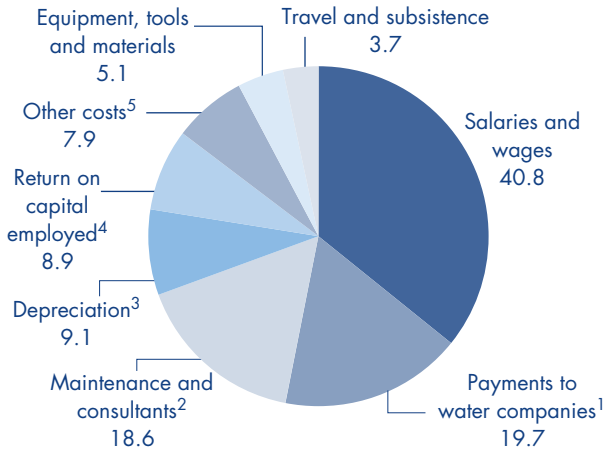
2.4 The Agency sets licence charges each year for the seven regions in England, with the approval of the Secretary of State.[14] Government guidance states that the charging scheme should "emphasise the fundamental principle that the expenditure to be defrayed must be shared by licence holders in proportion to the net effect on water resources of their respective abstractions".[15] As each region is self-funded, in effect required to cover its own costs, there are different charge rates in different parts of the country.

2.5 As **Figure 10 on page 19** shows, there are nine different charge rates, ranging from £10.03 per 1000m^3 of water abstracted in Yorkshire to £23.57 per 1000m^3 in Northumbria (2005-06 figures). The costs vary because, as noted above, each region is required to cover its own costs. Charges are higher in those regions with expensive water resource infrastructure, such as reservoirs, or where there are more extensive or complicated monitoring networks. Charges are high in Northumbria, for example, because of the cost of operating the Kielder reservoir, and in Anglian where there is the most extensive monitoring network. Real terms increases in charge rates since 2003-04 range from 2 per cent in South West Region to 9 per cent in Yorkshire Region, reflecting increased workload and costs.

13 Water Resources Act 1991, Part VI Financial provisions in relation to the Authority, Chapters I and II.
14 In accordance with powers under the Environment Act 1995, s41-42.
15 Review of the water abstraction charges scheme, Consultation Document, Environment Agency, January 2004, paragraph 2.1, quoting paragraph 8, Memorandum of advice on the preparation of charging schemes, HMSO (1967).

8 The total cost of water resource management in England and Wales in 2003-04 was £114 million, the largest part of which was spent on salaries and wages

Areas of expenditure in £millions. Total operating costs in 2003-04 were £113.8 million.



Source: Environment Agency

NOTES

1 Payments to water companies to operate assets, such as reservoirs and dams, for the benefit of other water users and the environment (known as Section 20 agreements).

2 Transport, plant hire expenses, maintenance of grounds and buildings, and use of consultants, contractors and computer services.

3 Depreciation accounts for the cost of wear and tear on assets.

4 The rate of return accounts for the opportunity cost of the amount water resource capital assets could have earned if they were put to an alternative use (a notional cost of capital). The Accounts Direction for the Agency requires a notional cost of capital to be included for each class of business. The notional cost of capital is calculated as a percentage of the net current cost value of assets, as directed by the Department for Environment, Food and Rural Affairs.

5 Other costs include operational office, computer and communications equipment.

9 Most of the Agency's water resources management staff work in operational and policy teams covering hydrometry, hydrology, hydrogeology and the administration of the licensing system

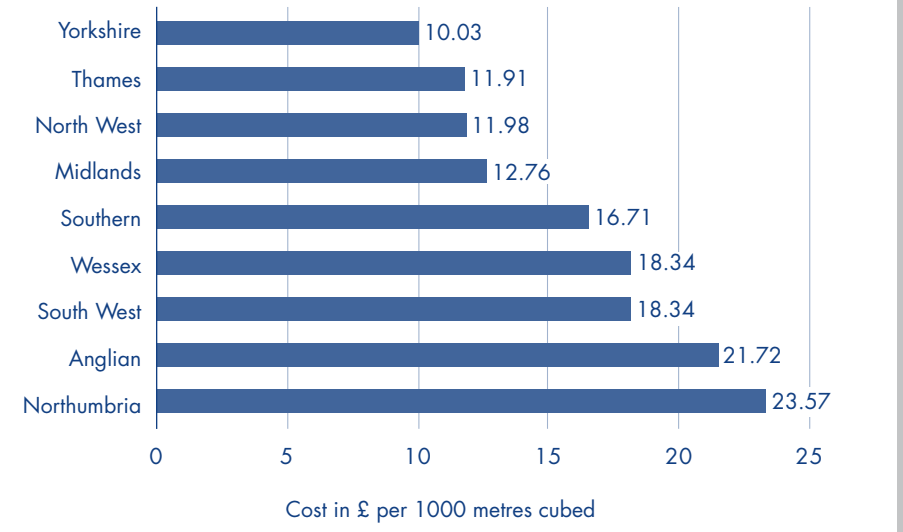
Area of activity	Number of staff
Operational and policy teams: hydrometry (office and field teams), abstraction licensing and technical specialists (hydrology, hydrogeology)	760
Specialised advice and analysis of environmental impacts (from fisheries, ecology and scientific staff)	136
Technical support for licensing and charging (from legal, charging and information technology systems teams)	85
Strategic planning and information (from cross-functional planning and customer liaison teams)	26
Total for front-line services	**1,007**
Information technology and other support services:	
Information technology support and regional finance, human resource business planning, facilities teams	237
Corporate communications and Head Office support (liaison with government and industry, corporate strategies for finance, human resource and planning, standard setting and performance monitoring)	156
Grand Total	**1,400**

Source: Environment Agency

2.6 To deliver good value for money, the Agency needs to be able to demonstrate that licence costs are justified. The Agency also needs to ensure that abstraction charges reflect only the costs arising from its water resource activities and not the costs of other functions as well. The first step in quantifying efficiency is an assessment of the full cost of an organisation's programmes, activities and services. However, although the Agency is required to calculate the full cost of water resource management, as set out in Figure 8, to calculate abstraction licence charges, it does not have sufficient information to show how these costs are spent across the different water resource management activities (such as the monitoring of sites, maintenance of sites, analysis of data or licensing). Costing data have been used in the rest of this report where they were available and they were considered to be sufficiently reliable.

2.7 To better identify potential efficiency savings, the Agency will need to generate more robust cost data on its activities. The Agency is developing Activity Based Costing which, once introduced, should enable costs to be allocated more accurately, increase the transparency of charges and provide better management information. In adopting such an approach, the Agency will not need, for example, to collect costs in detail for each site, but will need to understand who is benefiting from each site, and apply average values. The Agency expects it will be several years before Activity Based Costing is fully embedded into the business. In the short term, therefore, the Agency is focusing on improving its management information.

10 Water abstraction charges for the year commencing 1 April 2005



Source: Environment Agency

NOTE

The Agency applies a single charge in five of its seven English regions. In North East Region, there are different charges for the Northumbria and Yorkshire areas. In South West, there are different charges for the Wessex and South West areas. This is due to the split of charges applied in the former National Rivers Authority regions.

2.8 The rest of this part of the report examines:

- Separating the costs appropriate to water resource management from other costs;
- Payments to water companies to operate assets, such as reservoirs and dams, on behalf of the Agency (known as Section 20 agreements);
- Potential efficiencies resulting from a new licensing system and the changes brought about by the Water Act 2003.

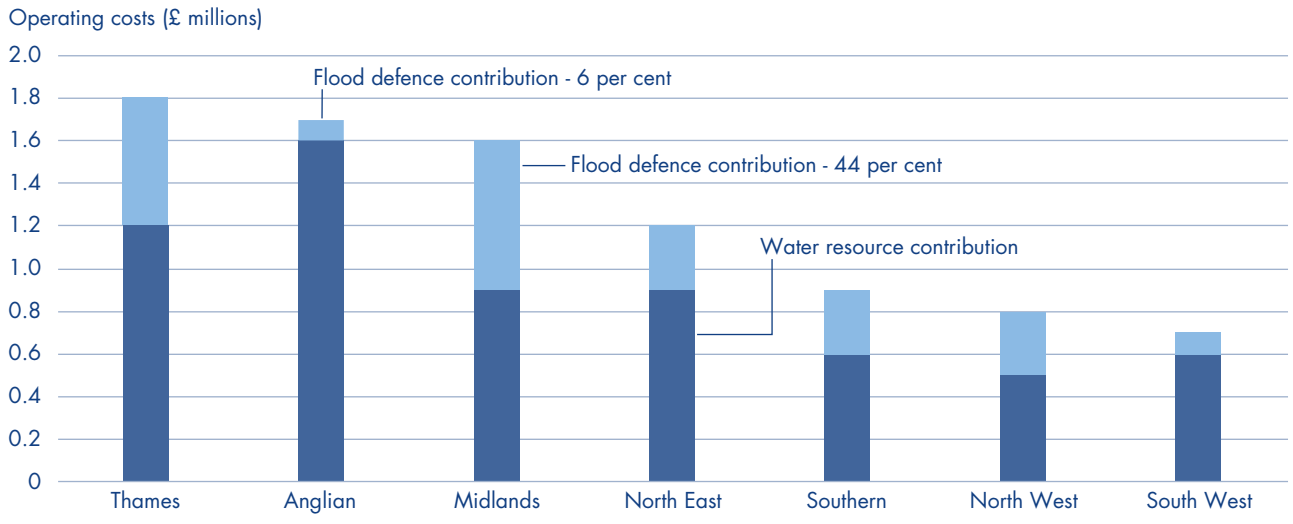
An inconsistent approach to cost allocation means that water resources are unintentionally subsidising flood risk management work

2.9 The Agency's hydrometric monitoring sites mainly serve both water resources and flood risk management functions. Following the 1998 Bye Report on flooding, the Agency has invested in improvements to the flood warning network in all regions by increasing the number of monitoring sites and the range and quality of data collected.[16] A timely assessment of flood risk is impossible without high quality data on river level, flow and rainfall. The total water resource operating cost in 2003-04 was £8.7 million.

2.10 As the Agency's monitoring sites mainly serve both water resources and flood risk management purposes, the costs should be allocated equitably between the two. However, the appropriate flood risk management contribution is only calculated rigorously in Midlands and Southern Regions. In the other regions, the contribution is agreed without the benefit of a systematic calculation, although North East and North West Regions are in the process of developing more rigorous cost allocation arrangements. In practice, therefore, flood risk management contributions in the different regions vary from 6 per cent in Anglian (£100,000 out of the total regional water resource operating cost of £1.7 million in 2003-04) to 44 per cent in Midlands (£700,000 out of the total regional water resource operating cost of £1.6 million) **(Figure 11 overleaf)**.

16 An independent report by Peter Bye on flooding, and lessons to be learned, published September 1998.

11 Flood risk management contributions to water resource operating costs in each region vary from 6 per cent in Anglian to 44 per cent in Midlands



Source: National Audit Office

NOTE
Proportions based on total operating costs in 2003-04 and flood risk management contributions in 2004-05.

2.11 In the two regions where a more rigorous assessment has been made, Southern and Midlands, the flood risk management contributions are 33 per cent and 44 per cent respectively. In Southern Region, for example, the flood risk is mainly coastal. Because coastal flooding requires a more limited warning network than inland river flooding, the region has calculated that a 33 per cent contribution from flood risk management is appropriate. In Midlands Region, where the risk of inland river flooding is higher, 44 per cent is charged to flood risk management. A higher apportionment of 50 per cent could be justified in regions if flood risk is considered to be particularly high. These considerations suggest that other regions could more appropriately charge between 33 and 50 per cent of water resources costs to flood risk management.

2.12 The introduction of a consistent cost allocation approach across all regions, with flood risk management contributions between 33 per cent and 50 per cent, could result in a reduction in the costs to water resources of between £650,000 and £1.7 million a year across the Agency. In turn, this should lead to lower charges to licence holders and, where relevant, their customers. However, although total abstraction charges would decrease, the amount would need to be reallocated to the Agency's flood risk management function, the costs of which are largely funded by the taxpayer generally.

The Kielder reservoir agreement reflects the decisions taken at the time of privatisation

2.13 The Agency has a duty under what is now Section 20(1) of the Water Resources Act 1991 to, so far as reasonably practicable, enter into arrangements with water companies to secure the proper management or operation of reservoirs, or other works, related to the supply of water (Section 20(1) is set out in full in Appendix 5). There are six "Section 20" agreements in England **(Figure 12)**. Under these agreements, the Agency reimbursed water companies some £15 million in 2003-04. Five of the Section 20 agreements shown in Figure 12 were agreed in 1989 by the then Department of the Environment, when the water companies were being created from the then public water authorities. The other agreement – Cow Green – was finalised in 1998.

2.14 The most significant of the six agreements, by value, is that with Northumbrian Water for the Kielder reservoir. Kielder is the largest reservoir in Western Europe and was opened in 1982. It regulates flows in the rivers North Tyne, Tyne, Wear and Tees. The Kielder Section 20 agreement was signed on 30 August 1989. Northumbrian Water Limited assumed its new responsibilities from the Northumbrian Water Authority with effect from 1 September 1989. The water authorities were privatised in December 1989.

12 The Section 20 agreement for Kielder is the largest such scheme in England

Scheme	Region	Cost[1] (£ million)	Water Company
Kielder	North East	12.1	Northumbrian Water
River Severn – Clywedog	Midlands	1.8	Severn Trent Water
Cow Green	North East	0.8	Northumbrian Water[2]
River Severn - Vyrnwy	Midlands	0.1	Severn Trent Water
River Derwent	Midlands	0.1	Seven Trent Water
River Leam	Midlands	0.1	Severn Trent Water
Total value		15.0	

Source: Environment Agency

NOTES

1 Based on costs in 2003-04.

2 Operational aspects incorporated in Kielder scheme.

2.15 In line with the statutory aim to secure the proper management or operation of reservoirs, the Agency's Section 20 agreements provide annual payments linked to the value of the assets and, in some cases, payments towards operational and maintenance costs of the reservoir schemes. The Kielder agreement is unique in that, in addition to a sum to reflect operating and maintenance costs, it makes a specific provision for a return on the capital investment incurred in the reservoir's works and facilities. Under this provision, the Agency is required to pay Northumbrian Water £7.35 million a year in perpetuity, and to increase this amount in line with the Retail Price Index.[17] In accordance with this increase, the Agency paid £11.4 million in 2003-04.

2.16 The Department's remaining records from that time reveal three differing, and to some extent inconsistent, reasons for providing a financial return on Kielder:

- **Servicing of debt:** The agreement would provide a sum equivalent to the debt payments which formed the basis of the previous water authority's charges to abstractors. Following negotiations between the Department and Northumbrian Water, the level was set at £7.35 million a year, as this gave a Net Present Value in 1989 approximately equal to the outstanding debt of £105 million. However, the Department's records also stated that the payments should not be directly linked with the debt as this was to be restructured as part of the privatisation process (see next point).
- **Earnings from share capital:** Shortly before privatisation, the debt of Northumbrian Water to the government, in relation to Kielder, was written off. In exchange share capital was increased.[18] The effect was that Northumbrian Water, instead of having to service the government debt, had instead to provide earnings for the increased share capital. The size of the share capital was based on the ability of the group's assets to earn profits related to those earnings, which in the case of Kielder Water was mainly equal to the payments due under the Section 20 agreement.
- **Retain asset value:** The payment was designed to reflect the Kielder scheme in Northumbrian Water's accounts, at the time of the privatisation, at its historical cost net book value. This amount was equal to the value of the flow of annual payments under the Section 20 agreement, discounted at the appropriate rate.

Although these rationales differ, they all need to be considered in the context of water company privatisation in 1989. Kielder's size and importance made the Northumbrian Water agreement unlike that of any other water company; a special arrangement had to be made to allow a successful privatisation. For Northumbrian Water, the provision for a return on investment in Kielder was one part of the creation of a financial structure needed to ensure a successful privatisation. An alternative to a series of payments in perpetuity, albeit one that was not pursued, would have been to have paid a one-off lump sum to Northumbrian Water.

17 Perpetuity is defined in the Kielder agreement as "The agreement shall continue for so long as the Kielder Scheme or any part thereof […] remains as a water resource available inter alia for regulation of the Rivers Tyne, Wear and Tees and the operation and management thereof remains with [Northumbrian Water]."

18 The debt on Kielder was written-off on 15 November 1989. The Department of the Environment increased the share capital of Northumbrian Water Group on 20 November 1989.

2.17 The agreement was written so that it could only be changed with the consent of both parties (i.e. the Agency and Northumbrian Water). In the mid 1990s, the Environment Agency, and its predecessor the National Rivers Authority, were concerned that the rationale for the Kielder Section 20 agreement was not clear, that it appeared to be out of line with other Section 20 agreements and that it led to high charges for the other 300 water abstractors in the Northumbria region. The Agency raised these issues with the Department of the Environment who set out the position along the lines of the first two bullets of the previous paragraph. The Agency's review of the Kielder agreement therefore concluded that, in the absence of any obvious driver for change and of any pressure from other abstractors, it was difficult to justify any further action.

2.18 The following issues are relevant:

- The higher charges affect only a small number of other abstractors in the region. Northumbrian Water is itself the dominant abstractor in the region and 98 per cent of the Kielder Section 20 cost is charged back to the company through abstraction licence fees.
- The agreement provided for payments in perpetuity, reflecting the Department's and Agency's need for Kielder to be operated indefinitely. It should be noted that, in addition to the payment for the return on investment, Northumbrian Water is reimbursed actual operational and maintenance costs (£660,000 in 2003-04). These vary considerably from year to year, mainly as electricity costs for pumping vary according to weather conditions. Operating cost payments are net of all Northumbrian Water revenues from a hydro-electric power plant at Kielder Reservoir, which recovers useful energy from water releases made from the reservoir.
- The agreement was based on a 7 per cent discount rate which correctly reflected Treasury guidance at that time. In 2003, the Treasury established new baseline real rates of return for services to the wider public and private sectors. The guidance suggested 3.5 per cent where a body provides a low risk commercial service, perhaps in support of an activity required by statute, and there is no competition and no realistic likelihood of competition from the private sector. Where there is, or may be, competition from the private sector, it suggested an average real return on capital employed should be set, to reflect market pricing, of between 5.5 per cent for a low risk commercial activity and 15 per cent for a high-risk activity.[19] The rate of 7 per cent used for Kielder is not out of line with the guideline costs of capital and equity used by Ofwat in regulating the water industry. Ofwat assumes a cost of capital of 5.1 per cent on a real, post-tax basis, equivalent to 7.3 per cent on a pre-tax basis, and a post-tax cost of equity of 7.7 per cent real.[20]

2.19 Although the return on investment provision in the Kielder agreement with Northumbrian Water is unusual compared to the other Section 20 agreements, it reflects the need to create an appropriate financial structure at the time of privatisation and ensure the successful sale of the water company.

The Agency's review of the water abstraction licensing process has identified a number of efficiency improvements

2.20 In June 2003, the Agency reviewed the opportunities to improve the whole process of issuing abstraction licences, from first application through to licence issue.[21] The review found there was scope for improvement in various areas, including enforcement and compliance with licences, administration of the licences once they are issued and data transfer, to avoid manual re-keying of data. This last issue was raised by several of the organisations consulted during our study. The Agency is developing a business case for changing the system and carrying out a more detailed review of the improvements that the new system could offer.

2.21 During the Agency's review, a number of areas were identified where significant benefits might be obtained by changing the process. These included eliminating unnecessary work, automating processes and introducing online application and registration. The Agency estimates that implementing these changes could result in savings of nearly £1 million a year, excluding implementation costs. To date there has been no assessment of the costs of implementation. This should be done as part of the business case for changing the system.

19 The revised cost of capital rate in fees and charges recovery policy, DAO(GEN) 13/03, HM Treasury, paragraph 6 and Annex 1.
20 Future water and sewerage charges 2005-10: Final determinations, Ofwat Periodic Review 2004, Chapter 15, Financial Issues.
21 Water resources abstraction licence process transformation analysis, Opportunities for change, Environment Agency, June 2003.

2.22 Following the licensing review, the Agency aims to develop common information technology systems that can be applied to a range of related business processes. It has identified that a modified version of the system used in issuing Integrated Pollution Prevention Control consents could be the basis for issuing all future water abstraction licences and permits. The project to complete the business process re-engineering and build the new computer system is due to be completed in 2008.

2.23 In terms of developing services online, decision statements on contentious licence determinations are published on the Agency's website and there are plans to develop a web-based register of traded abstraction licences. The Agency also provides internet access to much of its guidance and encourages the electronic exchange of documents. In the future, it plans to allow licence applications, application progress checks, compliance monitoring data returns and payments to be made online.

Reduction in number of licences following the Water Act should lead to further efficiencies

2.24 The Water Act 2003 introduced a number of changes that will have an impact on the abstraction charging scheme as follows:

- Time limiting all licences issued from 1 April 2004;
- Licensing for purposes previously exempt (e.g. dewatering of quarries, transfers into canals, trickle irrigation);
- Introducing a common 20 cubic metres per day threshold for abstraction licences, irrespective of the purpose of water use (this minimum threshold will exempt from the need for licences more than 20,000 of the smallest abstractors);
- Withdrawing the right to compensation for revocation of non-time limited licences which are causing serious environmental damage from 15 July 2012;
- Charges for new types of licence (temporary, transfer, full) and for advertising licence applications;
- Recovery of Agency costs resulting from drought orders and permits.

2.25 There are currently 47,600 water abstraction licence holders in England and Wales, with the number having been at this level for the last 10 years. The Water Act will reduce the number of licence holders by more than 20,000. The licences thus removed will tend to be those that are simpler and lower risk. However, the extension of the system to cover previously exempt activities will lead to some 6,500 new more complex licences. The net reduction in licences should contribute to the improved efficiency of the licensing process, although there may be additional costs associated with the implementation of new processes to administer the more complex licences and in dealing with a proportion of these licences that come up for renewal with greater frequency each year.

2.26 The Agency has identified areas of additional cost that are likely to be incurred as a result of these changes, for example through the setting up of a protected rights register, new authorisations and the setting of alternative abstraction thresholds. Following a detailed cost benefit analysis, and an assessment of the risks to water resources and the environment, it has decided that it will neither set up a register, nor set alternative thresholds, for the foreseeable future. The Agency will nevertheless need to monitor the cost implications of compliance with other parts of the Act and seek to identify other opportunities for further savings to ensure that the cost of implementing the Act is minimised and potential cost savings are realised in practice.

PART THREE

Collecting data on water resources

The collection of data is a major cost in the Environment Agency's management of water resources

3.1 A significant element of the Environment Agency's water resource management cost is the national network of sites to monitor rainfall, river flows and water levels in rivers and in the ground. There are some 14,300 monitoring sites in England. The monitoring and maintenance of existing sites, the development of new sites and data processing, validation and archiving cost some £13.7 million in 2003-04.

3.2 The primary purposes of the network are:

- To provide data on flows, levels and precipitation to enable water resources to be measured and, with this information, to be managed effectively;
- To provide data for flood risk management purposes, to reduce flood risk and to improve flood warning.

Data from monitoring sites are also used for the secondary purpose of environmental protection.

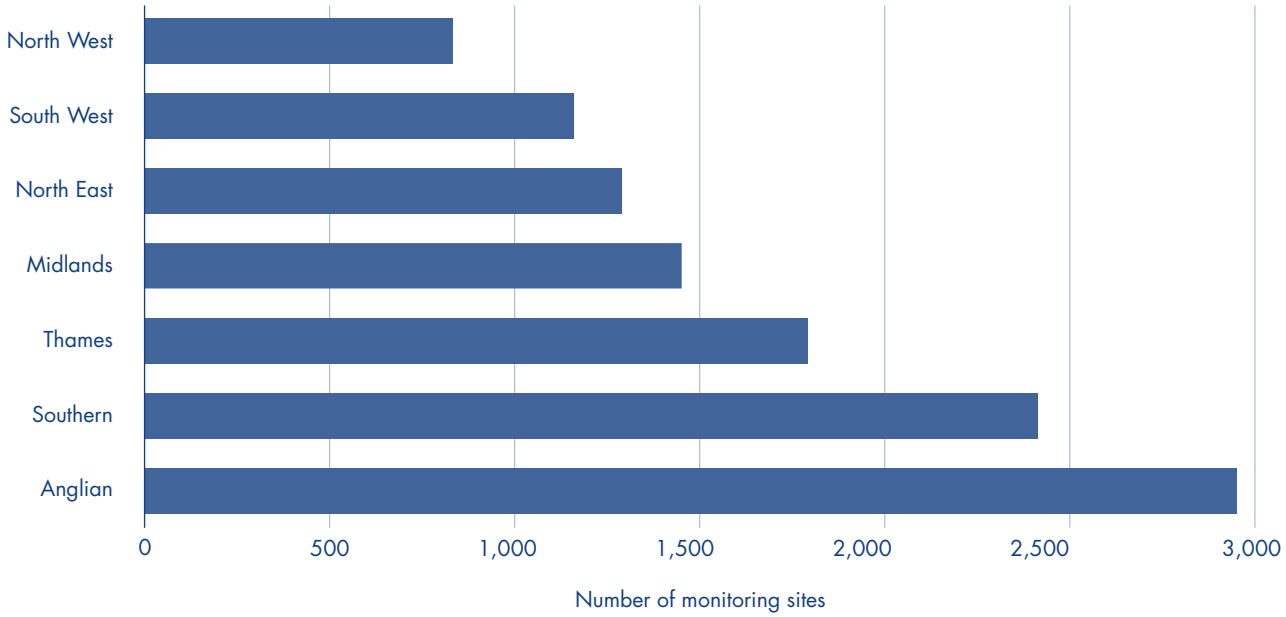
3.3 This part of the report examines:

- Control over the size of the network;
- The organisation of visits to monitoring sites;
- The use of new technology;
- Site maintenance.

Better accountability for monitoring sites would help control costs

3.4 The number of monitoring sites varies widely between the Agency's regions **(Figure 13 overleaf)**. Anglian Region, for example, has more than three times as many sites as North West Region. More than half of all the sites are used to monitor groundwater levels. The rest measure either rainfall or surface water flows.

13 Anglian Region, where pressure from abstraction is greatest, has the largest number of monitoring sites of all the Agency's regions



Number of sites by region

Type of site	Region: North West	South West	North East	Midlands	Thames	Southern	Anglian	Total
Groundwater Level borehole sites - manually dipped	229	297	534	696	690	1,429	1,747	5,622
Surface / Tidal Water Level sites - continuous measurement	120	178	266	236	244	104	232	1,380
Surface Water Flow sites - instantaneous measurement	38	192	7	64	398	412	194	1,305
Surface Water Flow sites - continuous measurement	152	214	163	151	171	166	275	1,292
Groundwater Level borehole sites - recorded measurement	123	108	206	149	149	90	281	1,106
Precipitation - recording gauge	159	153	92	125	121	191	184	1,025
Total	821	1,142	1,268	1,421	1,773	2,392	2,913	11,730

Source: Environment Agency

NOTE

The total number of sites shown in this table comes to 11,730. Precipitation storage gauge sites need to be added to this figure to give the total number of sites mentioned in paragraph 3.1.

3.5 In general, the number of sites depends on the nature and relative importance of different river catchments. The catchment is the area from which precipitation and groundwater will collect and contribute to the flow of a specific river. Factors affecting the number and type of monitoring sites include the size and shape of the river system, the variability of rainfall in the area over the year, the underlying geology and the level and type of abstraction in the area. The hydrometric network in England and Wales is relatively dense compared to other countries. This is due to the complexity of our river systems and diversity in terms of climate, geology, land use and patterns of water use. **Figure 14** shows the level and flow monitoring sites for the catchment of the River Trent.

3.6 The Agency has added 1,500 sites to its monitoring network in England in the last three years, primarily as a result of the Bye Report on flooding. This represents a 12 per cent increase in the total number of sites. The increase has been, in part, a response to pressure to manage water resources more accurately but mainly to be better prepared for flooding incidents. Future growth is expected as the Agency further improves its flood warning services and responds to the needs of the Water Framework Directive.[22]

3.7 Requests for new sites can arise for both local and national reasons. At a local level, hydrologists, hydrogeologists and other hydrometric clients working in regulatory or technical teams work together to identify the need for new sites. Assessment criteria include the urgency of the project, fit with wider corporate objectives, cross-Agency benefits and value for money. For regional projects, Regional Project Assessment Boards provide an independent check of the robustness of the business case. If the initiative is national, then the local teams work with the relevant national team to determine whether they can meet the need through existing data or whether there is a requirement for a new monitoring site. Examples of demands for new sites arising on a national level include the European Community's Water Framework Directive, which encourages Member States to introduce a co-ordinated approach to water management, and the Bye Report on flooding.

3.8 However, despite the importance of the monitoring network, no one group within the Agency is responsible for control of it as a whole, in terms of reviewing the need for existing and new sites. Instead, monitoring and assessment, hydrology, hydrogeology, hydrometry, flood warning and flood defence teams are responsible for different aspects of the network at different levels of the Agency (national (strategic), regional (tactical) and local). The lack of responsibility for the network as a whole is partly due to the number of different types of teams at different levels of the organisation, except where client groups have been established (as in the North East Region), and partly due to the turnover of staff with the consequent loss of specialist hydrology and hydrogeology skills.

3.9 The Agency could achieve efficiency savings if someone with sufficient experience and authority had responsibility for the network as a whole and controlled charges to the water resources account. Following our review, the Agency intends to make at least one Area Environment Manager in each region have a lead role for water resources, including hydrometric sites. In addition, the Agency has started to review the monitoring network to understand data requirements, establish national needs and set a framework for future network reviews. This will be supported by information on the range and accuracy of measurement, and the quality of data processing. The review was intended to be completed in 2003, but has been postponed until two other projects are in place:

- WISKI (the national hydrometric data archive system), due to be completed by July 2005. The new system replaces over 140 separate and technologically obsolescent data archive systems previously in use across the Agency. It provides data validation and analysis functions to improve data quality and should also lead to time savings on data management, collation and analysis. Further developments of WISKI will also provide the potential for simpler web-based access to hydrometric data, initially to internal users, though the Agency intends to make non-confidential data accessible to external users in the future.
- The Data Information Acquisition Planning (DIAP) project, expected in 2005-06. This project will provide a comprehensive database of all the Agency's national monitoring and reporting requirements. For hydrometric sites, it will also define why the Agency collects data at each site and how suitable the site is for these purposes. The project will also allow the Agency to review data needs, and associated costs, each year.

22 The Water Framework Directive – Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy. This aim of the Directive is to encourage Member States to introduce a co-ordinated approach to water management based around river basins.

14 Monitoring sites for the River Trent catchment area

Location of permanent river level and flow measurement stations in the Trent catchment

Source: Environment Agency

NOTE

Some minor sites have been omitted for reasons of clarity.

3.10 The Agency is an asset rich organisation. For example, in the Agency's 2003-04 accounts, its assets were valued at £2.1 billion, of which water resources' assets represented £234 million. The total replacement value of the Agency's assets is estimated at over £20 billion. The Agency is developing an Asset Management Strategy which should provide better management and performance related information on asset condition and future asset requirements. The Agency does not yet have a date for completion of its Strategy, nor a person responsible for it. The Agency should set such a date once it appoints a Head of Asset Management.

3.11 Clearer responsibility for network costs, allowing greater challenge on the need for sites, should realise any potential for reduction in number of sites. The Agency should adopt the principle of having the minimum number of sites necessary to maintain the network and provide information of the right quality and frequency. The Agency is currently reviewing the number of sites it needs to meet future requirements (the Surface Water and Groundwater Network Reviews). If reducing the number of sites is shown to be realistic, a target figure of up to 5 per cent would enable efficiency savings of up to £435,000 in running costs, of which £261,000 would apply to water resource management, after a proper allocation of costs between water resources and flood defence.[23] Decommissioning of sites will entail a one-off cost and in some cases an ongoing maintenance cost where removal of a weir, for example, is not feasible. Each situation would therefore require its own business case. A review of the need for sites could also take into account the scope for further sharing of sites and data with other organisations concerned with river flows and levels – an issue raised with us by stakeholders we consulted.

The Agency should prioritise its site visits more consistently

3.12 The Agency's hydrometric teams visit its monitoring sites to: retrieve recorded data, to provide a historical record of flow, level or rainfall at each site; check that monitoring equipment is working properly; or to install, replace or calibrate instruments. We examined the arrangements for those sites visited most often. For those sites, around 11,700 in all, the Agency carries out around 147,000 visits a year **(Figure 15)**. This represents an average of 13 visits to a site a year.

3.13 Most of the Agency's visits, around 142,000 (96 per cent), are planned. Planned site visits are organised according to an established timetable to undertake checks on equipment, typically at monthly to quarterly intervals, but they can be as frequent as weekly for flow sites during the summer (Figure 15). This approach is influenced by research and development into hydrometric good practice and internal and external targets, such as for the supply of rainfall data to the Meteorological Office. The frequency of visits depends on:

- The timescales in which data are required for use. This depends on data type, the use to which it is put and for groundwater sites, the hydrogeological behaviour of the aquifer.
- Instability in the physical characteristics of a site. For example flow sites which are particularly prone to algal and weed growth will be visited more frequently to monitor the effect on flow data.
- Confidence in the functioning of the measuring equipment.

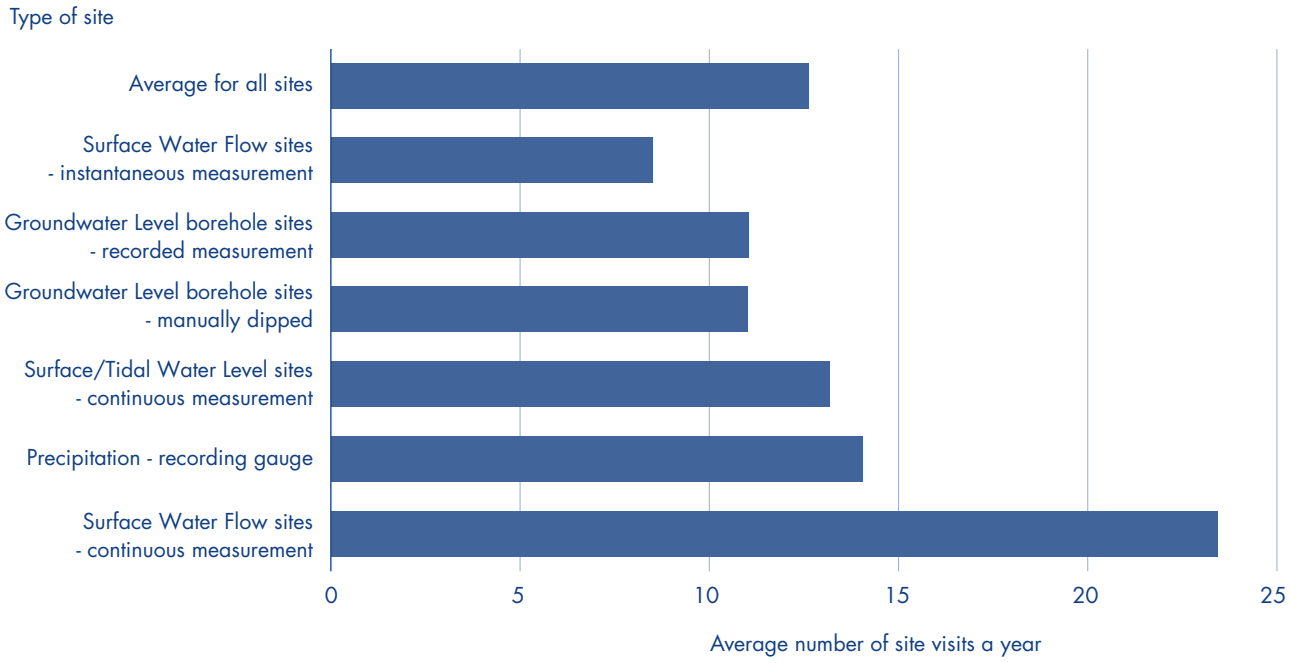
3.14 The Agency also makes a small number of unplanned visits to sites, generally in response to unforeseen events. Such visits might be needed to, for example: investigate data anomalies; collect data in extreme conditions (such as water flows during floods, droughts or pollution incidents); repair faulty or damaged equipment; or accompany service providers, such as telecommunication engineers, to a site.

3.15 As Figure 15 shows, there are, as would be expected, variations in the frequency with which different types of sites are visited. Analysis of these data between the Agency's different regions reveals further levels of variation in terms of visit frequency. There are notable variations in visit frequencies for: precipitation recording gauges; surface water flow continuous measurement sites; and groundwater level borehole manually dipped sites.

3.16 Visits to precipitation recording gauges should be the most consistent of all in terms of frequency. However, although six of the Agency's regions were in line with the national average number of visits, one region – Midlands – made noticeably more visits than others **(Figure 16 on page 31)**.

23 The actual saving possible would depend on: the type of sites being closed, as different sites have different costs associated with them; the geographic distribution of those closures; and the proportion of activity attributable to management overheads.

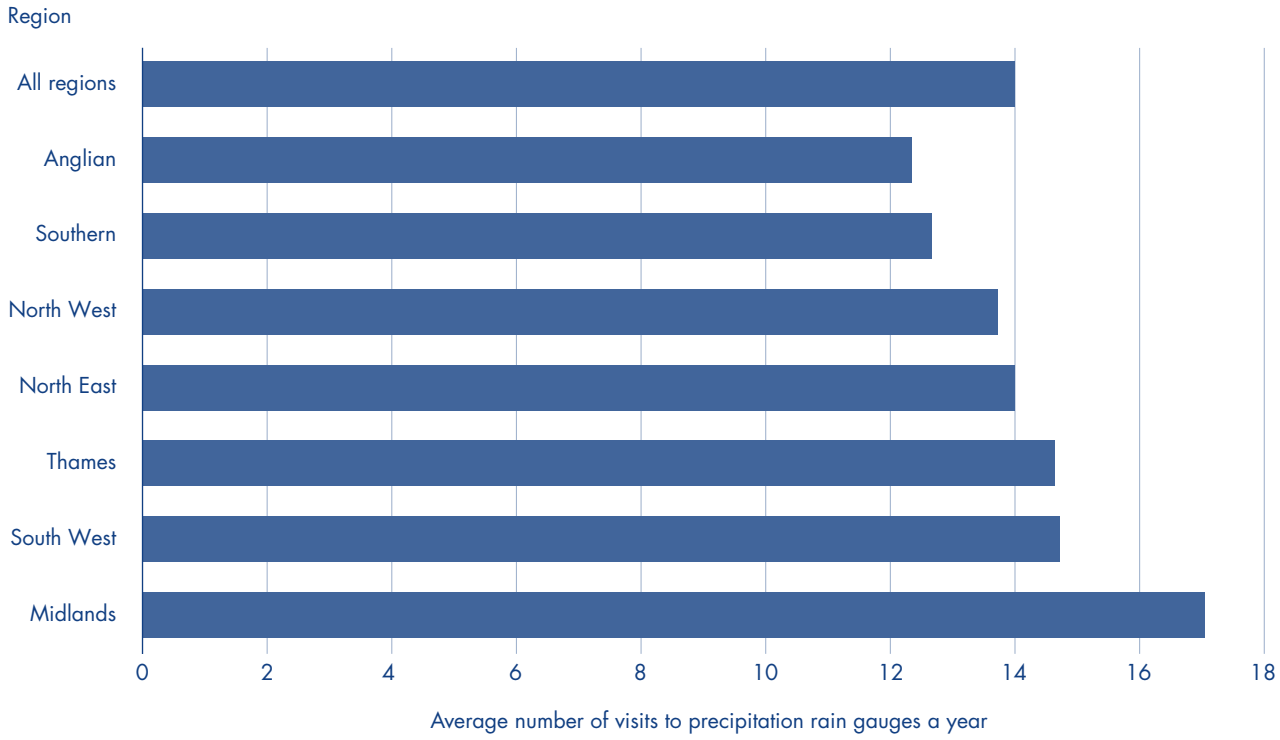
15 Monitoring sites are visited on average once a month, although for some types of site the average visit is every two weeks



Type of site	Description	Number of sites	Number of visits
Surface Water Flow sites – instantaneous measurement	All sites from which instantaneous "spot" measurements of flow are routinely obtained (e.g. using current-meters, Acoustic Doppler Current Profilers, dilution gauging). These exclude continuous flow sites where check gaugings are undertaken.	1,300	11,000
Groundwater Level borehole sites – recorded measurement	All sites providing a continuous logged record of levels.	1,100	12,100
Groundwater Level borehole sites - manually dipped	All sites from which instantaneous "spot" measurements of level are routinely obtained (e.g. may be daily, weekly, monthly or quarterly).	5,600	61,600
Surface/Tidal Water Level sites – continuous measurement	All sites providing a continuous logged record of levels. Includes rivers, lakes, flood basins, drainage channels, debris screens, tidal sites.	1,400	18,100
Precipitation - recording gauge	Primarily Tipping-Bucket Raingauges.	1,000	14,400
Surface Water Flow sites – continuous measurement	All sites providing a continuous logged record from which flows are generated. Can range from a simple pressure transducer or ultrasonic doppler installation to open-channel sections, weirs, flumes, ultrasonic time-of-flight and electromagnetic installations.	1,300	30,200
	Total	11,700	147,400

Source: Environment Agency

16 Midlands Region visits precipitation recording gauges more frequently than other regions



Source: National Audit Office

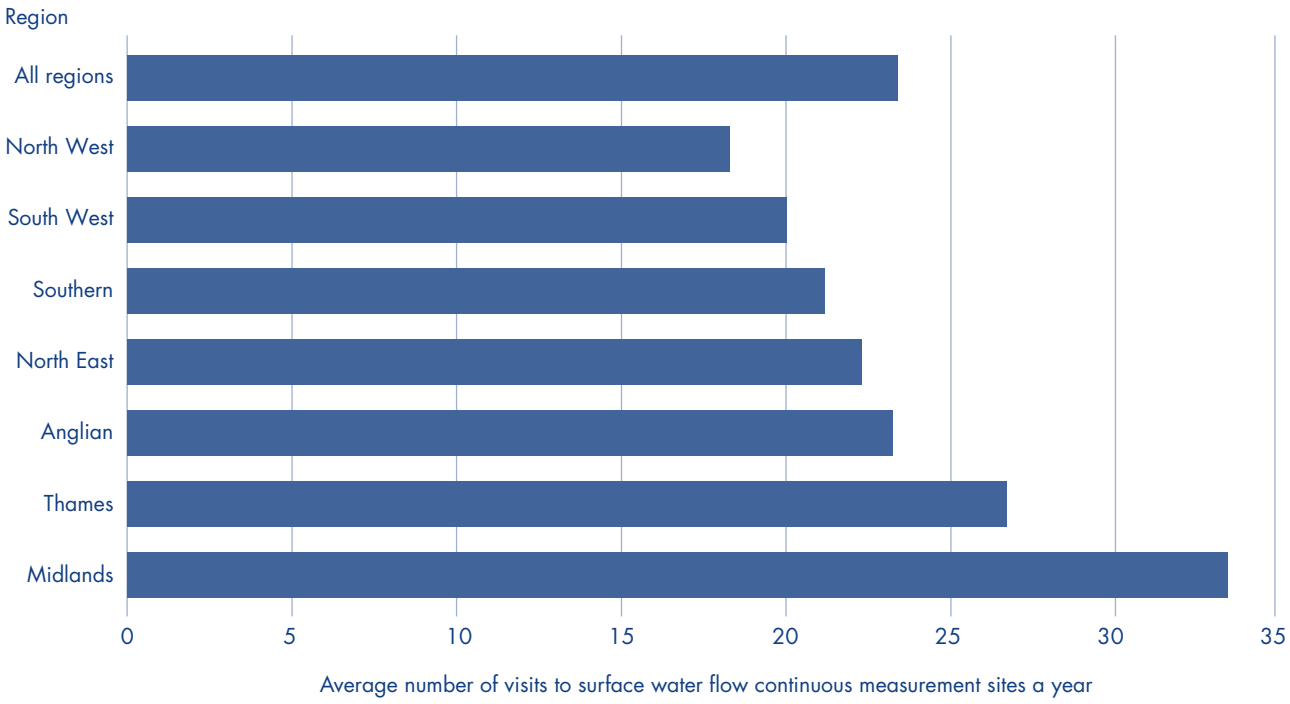
3.17 In relation to surface water flow continuous measurement sites, there was greater variation across the regions **(Figure 17)**. Some Regions may justifiably need to carry out more site visits than others depending on the mix of station types (e.g. structures or open channels). But the variation at the extremes - North-West Region makes an average of 18 visits a year compared to 33 a year in Midlands Region - suggests there may be scope for fewer visits in some locations.

3.18 For manually dipped groundwater level boreholes, five regions were broadly consistent with the average for all regions of 11 visits a year – roughly once a month **(Figure 18)**. However, two regions, North West and Southern, visit such sites a lot less often. In North West, the slow aquifer response and the business requirement for the information have led the Region to consider that quarterly data collection visits are acceptable. Southern Region also operates different visit regimes for different boreholes based on data need and aquifer behaviour.

3.19 The data suggest the Agency does not consistently prioritise site visits according to risk, importance or its own good practice. Nor does the Agency have consistent and comparable data across all regions setting out the cost of visits. There is nevertheless increasing pressure on data collection services, both to cover more sites and to improve data quality in areas where hydrometric activities fall short of Agency best practice standards. If good practice standards are to be achieved, and costs to be kept in check, the Agency needs to develop a nationally consistent approach to the costing and prioritisation of site visits. We estimate that the organisation and carrying out of site visits costs approximately £3.8 million each year. A 5 per cent reduction in the number of site visits could release savings of £190,000 a year.

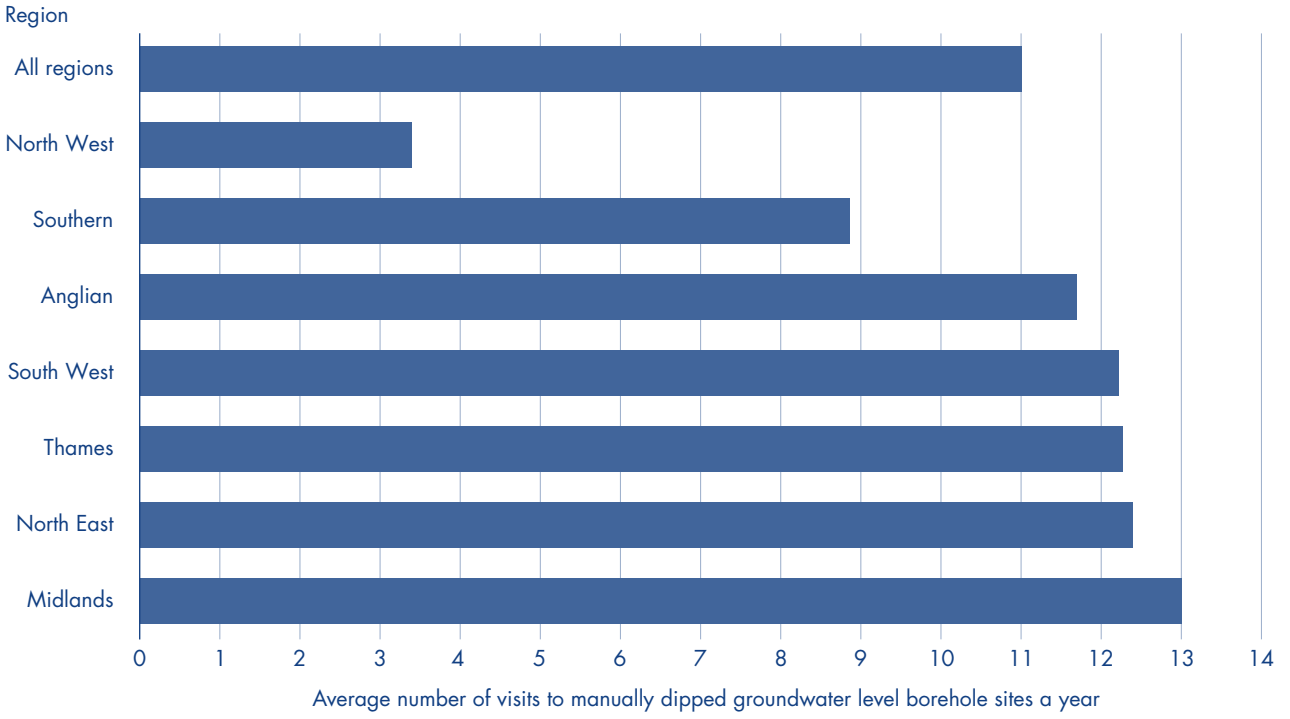
3.20 Although the Agency monitors its performance on water resource management generally, there is currently no performance indicator directly related to the efficiency of hydrometric services, nor is there any monitoring related to the number of site visits (although there is a performance indicator for data provision). The Agency needs a broader and more sophisticated set of measures to monitor performance, to act as an incentive to manage additional requests for visits and to monitor their costs. The new activity based costing and time recording initiatives should provide a vehicle for collecting data on reactive visits.

17 North-West Region makes an average of 18 visits a year to surface water flow continuous measurement sites compared to 33 a year in Midlands Region



Source: National Audit Office

18 North West and Southern Regions visit manually dipped groundwater level boreholes much less often than other Regions



Source: National Audit Office

New technology allows more efficient methods of data collection

3.21 The Agency uses a number of different methods for collecting data on rainfall, water levels and flows **(Figure 19)**. Data monitoring systems can be manual, electronic or a combination of both. Sites may also use telemetry systems, which collect and transmit data automatically, in real time rather than requiring periodic data collection on-site. Technical advances in collection methods provide opportunities for the Agency to gather data more cost-efficiently. The Agency has invested in telemetry systems to increase the availability of river level and other catchment data particularly during flooding incidents.

3.22 The Agency has introduced new, more cost-efficient technology in response to its availability, the need for improved data quality, increasing demands for efficiency and effectiveness, the Bye Report and new legislative requirements **(Figure 20)**. New types of technology used include Acoustic Doppler Current Profilers, hand-held data collection devices, data loggers and telemeters. Acoustic Doppler Current Profilers can measure river current faster and more accurately than earlier methods. The use of telemetry to provide instantaneous data for flood warning and drought monitoring has resulted in the upgrading of old equipment, such as water level and groundwater recorders.

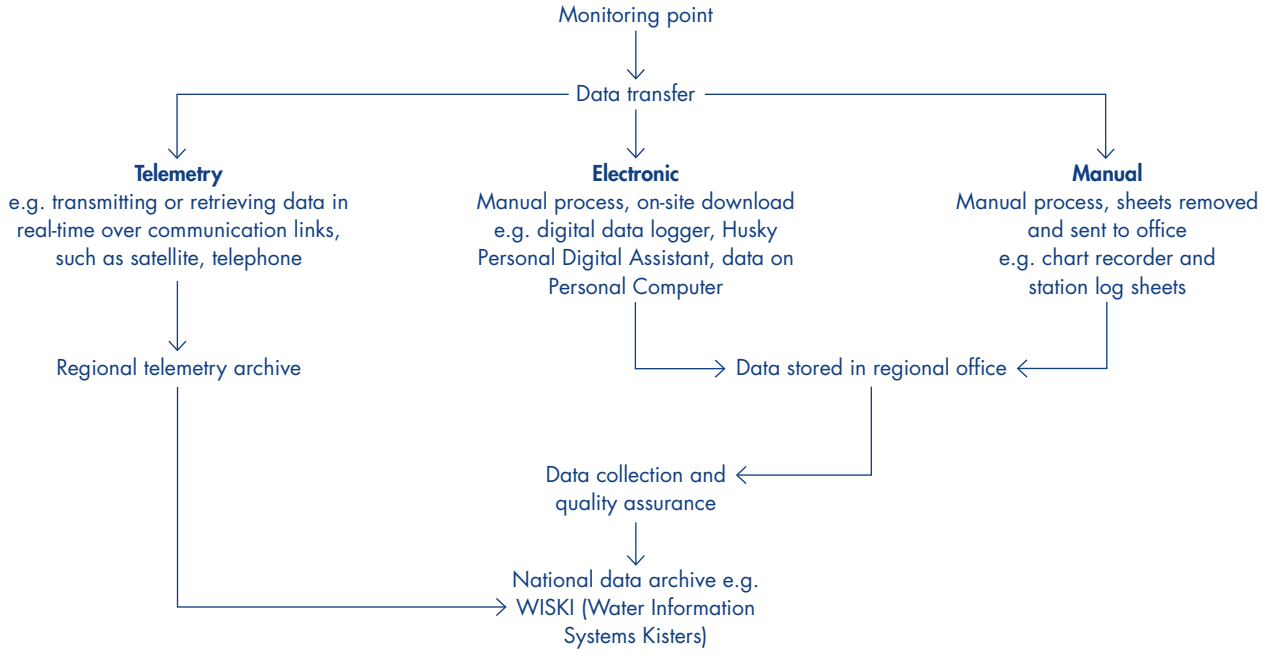
3.23 The introduction of new technology has changed the frequency of most data collection visits. Agency good practice recommends monthly visits to monitoring sites to ensure instrumentation is reading correctly, and most Areas now follow this guidance. Some 8 per cent of sites are now visited fortnightly. For some telemetered sites, the Agency use additional sensors to provide a double-check, allowing a further reduction in the frequency of visits, perhaps to every six weeks, two months or more.

3.24 Different network types have very different workload requirements for effective operation. Further exploitation of this technology to increase the extent of automation will require assessment of whether it will enable visits to sites to be reduced while maintaining confidence in the quality of the data. Factors to consider include:

- Data need: type and accuracy of data required; frequency of readings; timeliness of data, access required; acceptable risk;
- Nature of site: site location and accessibility; physical characteristics of the site; hydraulic characteristics of the site; temporal stability of those characteristics; susceptibility to vandalism;
- Installation cost: extent of civil and mechanical engineering requirements; sensors; recording devices; services - communications and power; telemetry equipment; equipment housings – boxes, kiosks, huts; health and safety risk control measures, security;
- Running costs: notably site and equipment inspection and maintenance needs; site calibration needs; equipment calibration needs; site lease costs, communications and power costs.

3.25 The Agency has limited information on the costs of the technology it currently uses and potential alternatives. It needs to obtain such information, and review the options for using more cost-efficient technology, if it is to obtain the potential benefits of greater automation. To address this gap, the Agency established a Technology Evaluation Group in 2004 to bring together all parts of the organisation with an interest in monitoring. The scope of the Group's responsibilities includes all types of water resource monitoring undertaken by the Agency. The Group provides a forum for identifying opportunities for further exploitation of existing technologies, and the evaluation and application of new technologies.

19 Water level and flow data can be collected using one of three different methodologies: telemetric, electronic or manual



Source: National Audit Office

20 Continuous electronic data recording is used where cost-effective and is in place at some 35 per cent of monitoring sites

Form of monitoring	Activity monitored	Number and proportion of sites		Option for other types of recording
Data loggers and telemetry	Surface water flow and level, rainfall, some groundwater level	3,200	22 per cent	Continuous electronic data recording essential
Data loggers only	Surface water level, some flow, rainfall, groundwater level	1,800	13 per cent	
Manual observations	Groundwater level – at observation frequencies that mean electronic recording unlikely to be cost-effective	5,300	37 per cent	Continuous electronic recording not essential
Voluntary observers	Rainfall (storage rain gauges)	2,600	18 per cent	Unsuitable for continuous electronic recording
Manual observations	Occasional 'spot' measurements of flow requiring manual visit – data recorded electronically	1,400	10 per cent	
	Total	**14,300**	**100 per cent**	

Source: Environment Agency

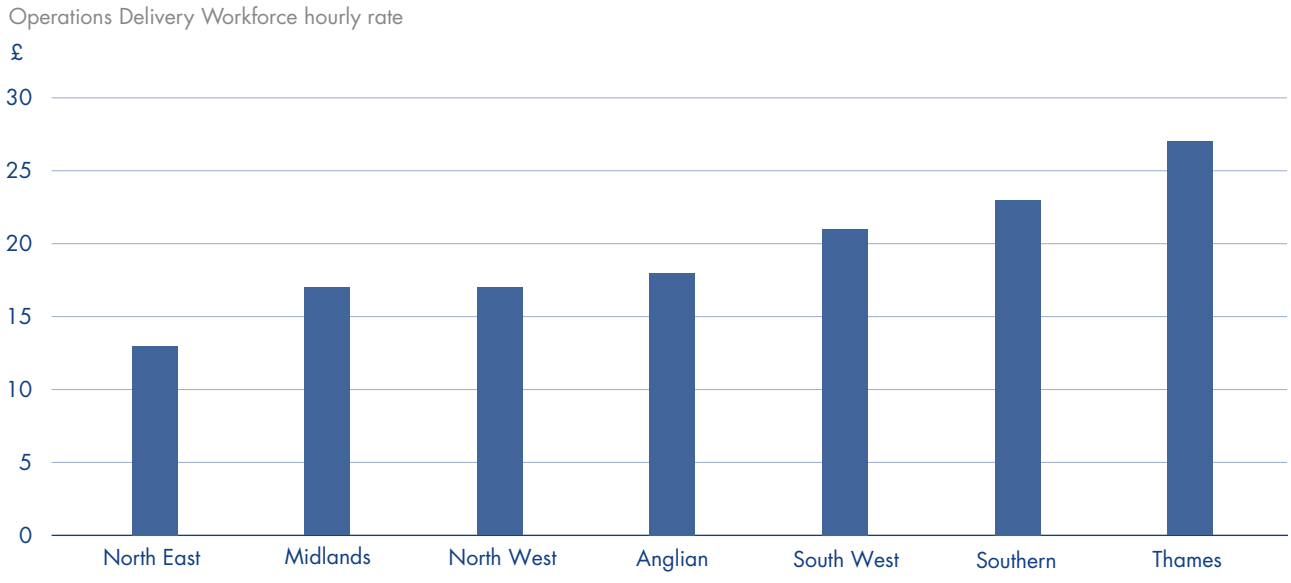
Site maintenance could be more efficient

3.26 Day-to-day responsibility for keeping data monitoring sites in good condition rests primarily with the Agency's hydrometric teams. Maintenance work is generally undertaken by contractors and the Operations Delivery Workforce. The primary purpose of the Operations Delivery Workforce is to ensure an efficient and effective first line response to flooding and environmental incidents. Its core workload is the planned and preventive maintenance of flood risk management assets and watercourses. But it is also available to water resources and hydrometry staff. Maintenance work typically comprises tasks such as clearing weed from channels, cleaning weirs, grass cutting or anything else which might obscure weir edges, the removal of silt build up from within the weir walls, the prevention of the accumulation of algae, silt and weed in the approach to the weirs and small structural repairs and site improvements. The Workforce's site visits usually require two people, primarily for health and safety reasons. The total cost to water resources of the Operations Delivery Workforce in 2003-04 was £1.1 million.

3.27 The charge out rates for the Operations Delivery Workforce in each region are determined and negotiated locally. Therefore, some variation in rates is to be expected, even though the Agency has national pay scales for the Workforce's staff. In practice, however, the rates range from £13 an hour in the North East Region to £27 an hour in the Thames Region **(Figure 21)**.

3.28 The Agency is reviewing the scale of its Operations Delivery Workforce within its Incident and Flood Risk Management Project. As part of this review, the Agency should seek to reduce the variation in regional hourly charges. If all regions reduced the cost per hour to the rate used in the lowest cost region (£13 an hour) then the total costs that needed to be recovered from licence payers would be reduced by approximately £330,000. However, once there is better cost re-attribution to flood risk management (see paragraphs 2.9 to 2.12), the potential savings for water resource management might be closer to £198,000.

21 The range of Operations Delivery Workforce hourly rates show an inconsistent approach to the charging of cost



Source: National Audit Office

APPENDIX 1

The Gershon Review

The Gershon Review – *Releasing resources to the front line, Independent Review of Public Sector Efficiency* – was published in July 2004. The Review looked at the scope for efficiency savings across all public expenditure.

The Review defined efficiency as follows:

Efficiency in the public sector involves making best use of the resources available for the provision of public services. This review has defined as 'efficiencies' those reforms to delivery processes and resource (including workforce) utilisation that achieve:

- reduced numbers of inputs (e.g. people or assets), whilst maintaining the same level of service provision; or
- lower prices for the resources needed to provide public services; or
- additional outputs, such as enhanced quality or quantity of service, for the same level of inputs; or
- improved ratios of output per unit cost of input; or
- changing the balance between different outputs aimed at delivering a similar overall objective in a way which achieves a greater overall output for the same inputs ("allocative efficiency").

Source: Gershon Review, paragraph 1.3

The Review identified the following six main areas for potential savings:

- **Back office** – back office functions in the public sector provide essential support to the delivery of frontline services. Back office functions include for example: finance, human resources, information technology support, procurement services, legal services, facilities management, travel services, marketing and communications.
- **Procurement** – the public sector is one of the biggest purchasers of goods and services in the economy. In 2003-04, the public sector spent over £100 billion purchasing, for example, utilities, information and communications technology systems and services, as well as professional services, temporary labour, construction, social housing, social care, and environmental services.
- **Transactional services** – for most citizens and businesses, the transactional services provided by the public sector are their most common interaction with government at both a local and national level. The transactional services undertaken by government include the payment of benefits and pensions, the collection of taxes, charges or fees (for example, income tax, TV licenses and road tax). Transactional services also include the public sector's role in the collection and exchange of information, such as the registration of births and deaths and the calculation of benefit entitlements.

- **Policy, funding and regulation for the public sector** – effective strategy, evidence based policy and focused inspection and regulation are critical to driving up performance in public services. Some parts of government therefore develop policy, provide funding to, inspect or regulate other parts of the public sector. For example, the Department for Education and Skills develops policy for and provides funding to the education sector, while the Office for Standards in Education (OFSTED) inspects performance in schools. It is important to ensure, however, that the costs of these activities (including the consequent costs for the frontline delivery organisations) are proportionate to their added value, whilst ensuring that frontline public service providers receive the support they need and are pursuing a well designed overall strategy.
- **Policy, funding and regulation for the private sector** – some government activity is specifically designed to impact on, or intervene in, the private sector. For example the government regulates certain industries to protect consumers' interests, or ensure compliance with regulation, for example on working conditions and environmental protection. Government also sets policy for, and funds, private sector bodies in support of wider objectives, such as productivity growth and job creation. Government interventions in the private sector need to be carefully weighed against the compliance costs that may be imposed on firms, and should seek to ensure that these interventions remain efficient and effective.
- **The productive time of front-line public service professionals** both in the wider public sector, such as schools, hospitals and the police and within central government departments, Non-Departmental Public Bodies and agencies. Front-line staff are there to deliver services to the user and reducing the amount of time they spend away from these core activities is an important part of efficiency.
  The Review initially focused on front-line staff in schools, hospitals and police forces but concluded that its findings, … applied equally to public sector staff more generally.

Source: Gershon Review, paragraph 2.2

APPENDIX 2

Our approach to reviewing efficiency in water resource management

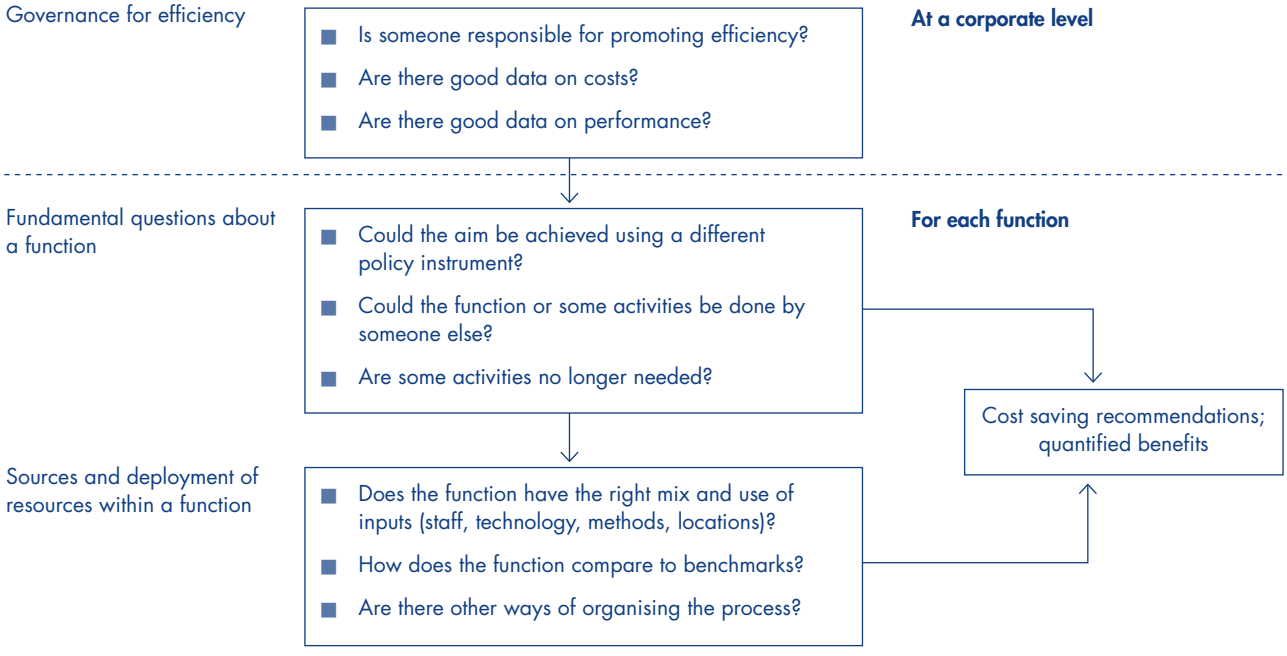
1 The work of government covers a vast range of activities. Measuring efficiency can be relatively straightforward where information about the resources devoted to a programme, activity or service is readily available and where end products are well defined and broadly similar. Measuring efficiency is more problematic where information about resources is poor or where end products are intangible or dissimilar. Even where efficiency is not easily measurable, scope can exist to measure it by:

- defining the controls and processes an organisation has in place;
- developing evaluative criteria for assessing the quality of management;
- comparing organisational practices with these standards.

2 Our reviews of an organisation's efficiency address a number of key areas as set out in the sequence shown in **Figure 22**.

3 Each of the areas shown in Figure 22 leads to further questions. Examples of these are set out below. We used these questions as the basis of our review of efficiency in water resource management at Environment Agency.

22 General approach to reviewing efficiency as applied to the Environment Agency's management of water resources



Source: National Audit Office

Corporate governance of efficiency

4 Effective organisations will have a clear awareness of the need to manage their efficiency, senior level responsibility for doing so and good data to allow them to do so. To measure efficiency, an organisation needs to establish inputs, outputs and performance standards. The following areas need to be considered first in reviewing how well an organisation manages its efficiency.

- Who is responsible for promoting efficiency in the organisation?
  - Does a senior level person within the organisation have responsibility for promoting efficiency?
  - Are there incentives to promote efficiency, organisationally and individually?
  - Is efficiency linked with other areas, like performance measurement?
  - Do the organisation's management processes, systems and practices address efficiency?
  - Does the organisation carry out periodic reviews to test or challenge its efficiency, either as a whole or of individual functions?
  - Are the organisation's efforts to explore and exploit opportunities for improving efficiency adequate?
  - How is "adequacy" measured?
- Are the data on performance adequate?
  - What are the outputs and outcomes of an organisation's programmes, activities and services?
  - Is information on outputs and outcomes readily available?
  - Has the organisation assessed the feasibility of measuring the efficiency of the programme, activity or service?
  - Has the organisation identified key outputs, mapped relevant processes and the links between them?
  - For products or services which are dissimilar, or difficult to quantify, are proxies or substitute measures used?
  - Have performance norms, targets or standards been identified, and used?
  - Are norms based on standards for the work (e.g. completing a job in a certain time), historical standards or organisational comparisons?
- Are the data on costs and cost drivers adequate?
  - What are the full costs of an organisation's programmes, activities and services (both the direct costs of an activity and the indirect costs, such as an organisation's human resource team, that also make a contribution)?
  - Has the organisation assessed full costs?
  - Does the organisation analyse full costs between different functions, regions and local offices?
  - Does the organisation understand the main factors that drive costs?

Fundamental questions about a function

5 Before spending too much time on whether an organisation's programmes, activities and services are themselves efficient, fundamental questions should first be asked about the choice of, and need for, a particular policy instrument. Examples of these are set out below.

- Are the programmes, activities or services still needed?
  - Are there programmes, activities or services that can be stopped?
  - Are there programmes, activities or services that can be reduced in scale or extent, or merged?
  - Has the organisation aligned resources to match key functions or activities?
  - Does the organisation measure the value of the output?
- Could the function be achieved using a different policy instrument?
  - Has the organisation sought fundamentally different and better ways of providing the same programmes, activities or services (e.g. an industry based system instead of publicly regulated licences, a centralised system, devolved operations)?
  - Is there a systematic approach to reviewing operational systems, procedures and practices?
- Can someone else be found to help pay for the programmes, activities or services?
  - Are there other bodies with whom the organisation could work in partnership to provide the programmes, activities or services?
  - Are there other bodies already providing similar programmes, activities or services to which responsibilities could be transferred or costs shared?

Sources and deployment of resources within a function

6 Once a policy instrument has been chosen, it is possible to look at the efficient use of resources in that function. The sorts of questions an efficiency review might address are shown below.

- Review the mix of inputs (staff, technology, methods, locations, organisations)
  - Could the organisation's programmes, activities or services be provided with fewer staff?
  - Does the organisation compare and analyse time spent productively with time spent on overhead functions?
  - Does the organisation analyse unproductive time or underutilisation of capacity?
  - Could the organisation use new and better technology?
  - Has the organisation considered using new and better technology?
  - Could the organisation reduce the number of locations from which it operates?
  - Has the organisation considered reducing the number of locations from which it operates?
  - Could the organisation's programmes, activities or services be organised in a more efficient way?
- Compare with internal and external benchmarks and time trends?
  - How does the efficiency of the organisation's programmes, activities or services compare against its own benchmarks?
  - How does the efficiency of the organisation's programmes, activities or services compare against external benchmarks?
  - How far have the organisation's programmes, activities or services become more efficient over time?
- Are there other ways of organising the process?
  - Has the organisation analysed processes to identify key cost drivers and then standardise or simplify to produce further efficiencies?
  - Does the organisation review, promote and adopt internal good practices?
  - Does the organisation review, promote and adopt external good practices?
  - Has the organisation reviewed other ways of providing its programmes, activities or services (e.g. contracting out, sharing resources)?

APPENDIX 3

Methodology

This report draws on a wide range of sources of evidence, including meetings with Agency managers and staff, reviews of files and management information, process mapping, regional surveys and comments from stakeholders. The fieldwork was assisted by staff from PricewaterhouseCoopers LLP, working with a team from the National Audit Office. The main methods used in our examination are set out below.

File and management information

We reviewed:

- Agency documentation and information on the management of water resources and the water abstraction charging scheme;
- Records and management information held by the Agency on current and recent work and projects in relation to water resources management;
- Relevant parliamentary, enquiry, academic and consultancy reports (identified as footnotes in the report).

Interviews, consultation and visits

We interviewed:

- Staff from the Agency's national head office water resources policy, process and operations teams and regional and area data validation, telemetry and hydrometric field staff, regional hydrology, flood warning and flood risk management, water quality and water resources planning staff.
- Key stakeholders from the Agency's water abstraction licence application and charging scheme, business planning, procurement and those with responsibility for the management of Section 20 water resource agreements.
- Agency Regional Directors and Director of Finance.
- Hydrometric field staff on site visits in Anglian, North East and Southern regions.
- We visited the Agency's head office in Bristol, regional and area offices in Anglian, Midlands, North East, Southern and Thames.
- We surveyed each of the Agency's regions, covering the number and type of sites, number of site visits within the regional network, cost of Operations Delivery Workforce visits, introduction of new technology and the regional approach to obsolete and redundant technology, measures in place to monitor performance, and evidence of Service Level Agreements, organisation and capacity.
- We conducted workshops to research the views of Agency staff and stakeholder bodies involved in the management of water resources and invited comments on our early findings.

Stakeholders' views

- We surveyed organisations involved in the management of water resources to seek their views on the Agency's efficiency. More details are set out in Appendix 4.
- We interviewed representatives from the Department for Environment, Food and Rural Affairs, the Centre for Ecology and Hydrology, Ofwat (The Office of Water Services – the economic regulator for the water and sewerage industry in England and Wales), HM Treasury and specialist hydrometric consultants.

APPENDIX 4

Stakeholder views

We surveyed organisations involved in the management of water resources to seek their comments on the efficiency of the Agency's operations in England. The organisations that responded were:

- Anglian Water Services Limited
- Association of Drainage Authorities
- British Waterways
- Chartered Institution of Water and Environmental Management
- Folkestone and Dover Water Services Limited
- National Farmers Union
- Northumbrian Water Limited
- Office of Water Services (Ofwat)
- Portsmouth Water
- Severn Trent Water
- South East Water
- South Staffordshire Water
- South West Water
- Three Valleys Water
- United Utilities
- Wessex Water
- Yorkshire Water

A summary of the responses relating to the areas identified for review in the report are shown below, under four broad headings: charging recovery scheme; water abstraction licences; collection of data; and structure of water resource teams. It should be noted that the responses were made at the end of 2003 and the start of 2004. Since then, the Agency has been seeking to address the concerns raised by stakeholders. In doing so, the Agency is reviewing its organisational structures used to deliver water resources activities in the light of the Water Act 2003 and the Streamlining Abstraction Processes Project (see paragraphs 2.20 to 2.26 for more details).

Charging recovery scheme

1. Cost recovery under a national charging scheme ought to include the costs of regional and national water resources development in pursuit of the Agency's duty to augment and re-distribute water resources.
2. It is not transparent whether the costs recovered by abstraction charges cross subsidise other aspects of water management.
3. Greater clarity from the Agency on how the money is used as part of the charge setting process would provide greater confidence to abstraction licence payers.

Water abstraction licences

4 Regional differences in the abstraction licensing process and the processing of returns made under Section 201 of the Water Resources Act on actual water use are time consuming and costly, for example the cost of publishing statutory notices and application fees payable to the Agency.

5 There is a need to simplify the process of applying for abstraction licences.

6 The process for determining a licence has become more complex and costly, and the three-month statutory period is often extended or exceeded. This also applies to the renewal or variation of licences.

7 Prior to the publication of the statutory notice, the Agency is sent drafts of the public notice and abstraction licence application but it will not accept these in electronic format, which would be much more efficient for licensees.

Collection of data

8 Unnecessary monitoring, collection, validation and submission of flow and level should be avoided through a consistent and proportionate application of the Water Act through national rather than area based consultation.

9 There is a need to review the situation where measuring stations for two bodies, both funded through the Department for Environment, Food and Rural Affairs, are in operation next to each other and maximise scope for data sharing.

10 In some places, duplicate stations have been set up to monitor river flows; the Agency should work with water companies to combine and share data collected to generate shared efficiencies.

11 Development of a national system for recording data to ensure cross regional consistency would result in further flexibility and operational savings.

12 There needs to be an efficient transfer of data between the Agency and key abstractors.

Structure of water resource teams

13 It would be helpful to have a more integrated structure for regional water resources teams, particularly for those staff who have most regular contact with water companies.

APPENDIX 5

Section 20(1) of the Water Resources Act 1991

Extract from the Water Resources Act 1991

20. – (1) It shall be the duty of the Authority so far as reasonably practicable to enter into and maintain such arrangements with water undertakers for securing the proper management or operation of –

(a) the waters which are available to be used by water undertakers for the purposes of, or in connection with, the carrying out of their functions; and

(b) any reservoirs, apparatus or other works which belong to, are operated by or are otherwise under the control of water undertakers for the purposes of, or in connection with, the carrying out of their functions,

as the Authority from time to time considers appropriate for the purpose of carrying out its functions under section 19(1) above.

(2) Without prejudice to the power of the Authority and any water undertaker to include any such provision as may be agreed between them in arrangements under this section, such arrangements may –

(a) make provision by virtue of subsection (1)(a) above with respect to the construction or installation of any reservoirs, apparatus or other works which will be used by the undertaker in the carrying out of its functions;

(b) contain provision requiring payments to be made by the Authority to the undertaker; and

(c) require the reference to and determination by the Secretary of State or the Director General of Water Services of questions arising under the arrangements.

(3) The Authority shall send a copy of any arrangements entered into by it under this section to the Secretary of State; and the obligations of a water undertaker by virtue of any such arrangements shall be enforceable under section 18 of the [1991 c. 56] Water Industry Act 1991 (enforcement orders) by the Secretary of State.

REPORTS BY THE COMPTROLLER AND AUDITOR GENERAL, SESSION 2005-2006

The Comptroller and Auditor General has to date, in Session 2005-2006, presented to the House of Commons the following reports under Section 9 of the National Audit Act, 1983. The reports are listed by subject category.

		Publication date
Defence		
Driving the Successful Delivery of Major Defence Projects: Effective Project Control is a Key Factor in Successful Projects	HC 30	20 May 2005
Managing the Defence Estate	HC 25	25 May 2005
Assessing and Reporting Military Readiness	HC 72	15 June 2005
Education		
Securing strategic leadership for the learning and skills sector in England	HC 29	18 May 2005
Environment, Food and Rural Affairs		
Lost in Translation? Responding to the challenges of European law	HC 26	26 May 2005
Environment Agency: Efficiency in water resource management	HC 73	17 June 2005
Law, Order and Central		
Public Guardianship Office: Protecting and promoting the financial affairs of people who lose mental capacity	HC 27	8 June 2005
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Innovation in the NHS: Local Improvement Finance Trusts	HC 28	19 May 2005
The Refinancing of the Norfolk and Norwich PFI Hospital: how the deal can be viewed in the light of the refinancing	HC 78	10 June 2005

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