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Do we need large-scale water transfers for south east England?

September 2006

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Contents

Summary

In February 2006, Ministers asked the Environment Agency to review the need for such large-scale transfers of water to south east England. We reported our preliminary findings at the Secretary of State's water meeting on 1 June 2006. This report provides our assessment of the need for large-scale water transfers to south east England.

We conclude that **there is no new evidence of a need for large-scale transfers of water to south east England from the north of England or from Wales.**

Water companies' existing plans provide for water supply in south east England to 2025 without the need for large scale transfers. Such transfers are more expensive and environmentally damaging than the measures already in water companies' water resources plans.

The drought in south east England, while serious, is similar to the droughts of 1933-34 and 1975-76. Restrictions on water use in such droughts are part of water companies' planned responses, in line with water resources legislation and Government policy. These restrictions are not in themselves evidence that supply is insufficient.

Water companies already have plans to meet the demand for water in south east England for the next 25 years. We reviewed these in 2004 and there is no reason to believe that they have suddenly become inadequate. These plans include six new or extended reservoirs in south east England.

It would be possible instead to build large pipelines to move water to south east England. The feasibility of such a scheme is not in question. It would be worth building a water grid only if:

- The demand for water in south east England exceeds the available supply; and
- There are no better, cheaper options locally.

Water companies' estimates of future water demand in south east England allow for two million more people and 8% more water use by each person by 2030.

We commissioned consulting engineers to examine the cost of meeting this additional demand for water in south east England by constructing new reservoirs in the north of England and a pipeline to bring the water to London. The capital cost of this would be between £9 billion and £15 billion, or £8 million to £14 million per megalitre a day. In their 2004 plans, water companies estimated that the cost of building new reservoirs in south east England to meet the same demand is about £1.6 million per megalitre a day. The pipeline would cost at least four times as much as developing new resources in the south east.

Similarly, the cost of developing and transferring water from Wales to London has been estimated at a minimum of £2.4 million per megalitre a day, with this figure assuming transfers through the river Severn. Using the river Severn as part of a transfer network could present significant environmental problems. These were last investigated by the National Rivers Authority in 1994. Our current view is that these environmental problems would be difficult and expensive to overcome.

In the longer term, beyond the 2020s, further water transfer may prove necessary. We are about to start work on our next water resources strategy for England and Wales. As part of this strategy we will review the need for further water transfers.

Our view is that there is still considerable scope for further water efficiency in south east England. Water companies must reduce leakage and work with people and industry to make the best use of the water that is available. The drought reminds us that water is precious for people and the environment, and that we must all take responsibility for using it responsibly.

Water companies across south east England have plans to develop new resources in the next decade. They must follow these plans so that there is no delay in the detailed investigation of the need for these proposed new schemes and reservoirs. At the same time, water companies must take all possible opportunities to manage demand.

Water companies must keep all options under review as they prepare their next water resources plans. Draft plans are due in 2008 and we expect water companies to demonstrate that they have considered all of the possible options. These plans will undergo full public consultation and will provide an opportunity for people to debate the future of public water supply.

1. Introduction

This report is a preliminary assessment of the advantages, disadvantages and need for large-scale water transfers to south east England. It draws principally on existing published work, but also reports on a new assessment of the cost of developing new transfers of water.

We review the case for a water grid by comparing it with the other options for meeting future demand in south east England.

2. What is a water grid?

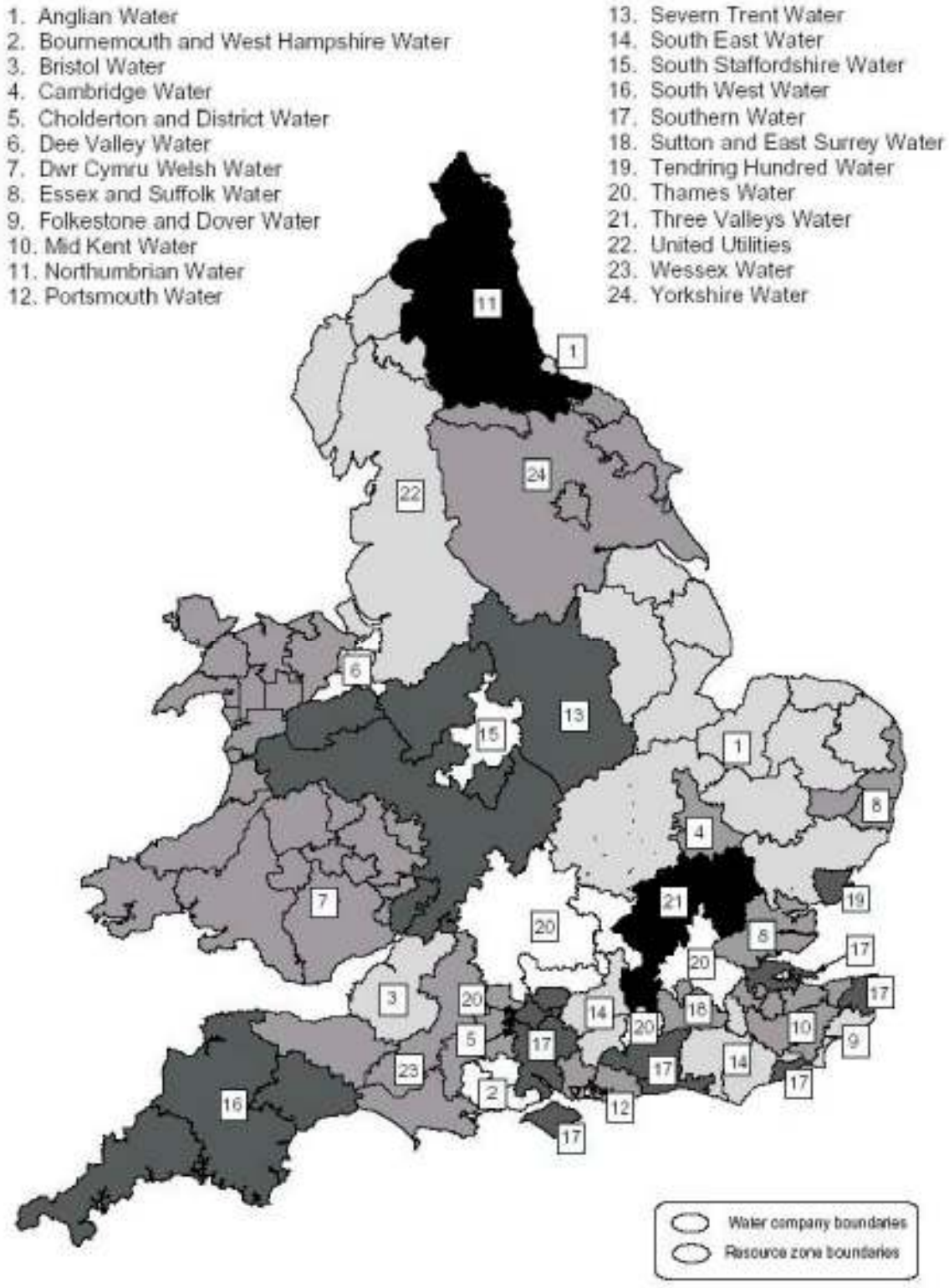
Many people imagine that a water grid would connect all the major reservoirs and boreholes, allowing water to be shared between all of them in a network similar to the national electricity grid. The existing water supply network is very far from this model. There are 24 water companies in England and Wales. Each supplies water to a defined geographical area. The 24 water companies operate more than a hundred separate resource zones (figure 1). A resource zone is the largest area in which all customers face an equal risk to supply. Supply network constraints usually mean that water from a particular source can reach only part of the zone, so even resource zones are rarely fully integrated.

Some resource zones are entirely isolated from surrounding zones, but many zones are connected together. These connections allow transfers of water between zones through large pipes. The volume of water transferred is often significant. In 2004-05, the total volume of transfers between resource zones was 800 Ml/d, or about 5% of total water supply. Usually these transfers can operate only in one direction, from a zone with a surplus of water to one with less. These transfers may be of either treated or untreated water.

Many resource zones receive water from beyond the zone, either through transfers from one zone's supply network to another, or because some of the zone's sources of water are outside the zone itself. For example, much of Birmingham's water comes from reservoirs in Wales: the Elan aqueduct is 118 km long. The Ely Ouse – Essex transfer scheme moves water over 140 km from Norfolk to Essex through a system of rivers, channels and tunnels. The biggest tunnel is 2.4 m in diameter and 20 km long.

This paper concentrates on the potential for developing additional transfers of water between different zones or from sources of water beyond the zone. It does not evaluate the costs and benefits of full integration of the water supply network to make a grid like the national electricity grid. This would require extensive redesign of the entire system of water supply, and no commentator has suggested that this is necessary. In any case, the first stage in the development of such a grid would be to improve the transfers between adjacent zones, especially where one of the zones suffers from a shortage of water.

Figure 1 Water company water resources zones



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Environment Agency, 100026380, 2005.

3. New large-scale water transfers from other parts of England and Wales

This idea has attracted significant attention in the press and from the public.

There have been several previous studies into large-scale water transfers to meet water demand in south east England. Information published recently has drawn exclusively on these previous studies, and there have been no new assessments of the costs and environmental impact of developing these transfers.

3.1 Water Resources Board 1973

The Water Resources Board (WRB) had a duty to advise on the development of water resources in England and Wales. In 1973, it forecast that by 2006 the total demand for public water supply in England and Wales would be between 26,000 and 28,000 Ml/d. Based on this forecast, the WRB produced a water resources plan that included, in order of development (figure 2):

- New reservoirs at Brenig (Wales), Kielder (Northumbria) and Carsington (Derbyshire) between 1976 and 1978.
- Enlarging Craig Goch reservoir, in the Elan Valley by 1980.
- Transfers from the Severn near Tewkesbury to the Thames near Abingdon, in 1984.
- A new reservoir on the Severn at Longdon Marsh, near Tewkesbury, by 1993, to support further transfers from the Severn to the Thames.

The WRB recognised that there could be environmental problems in transferring water from the Severn to the Thames, and offered as alternatives the development of a new reservoir at Otmoor, near Oxford, and storage of fresh water in the Wash.

Of the planned developments, Brenig, Kielder and Carsington were constructed. Much of the WRB's plan has been proved to be unnecessary, principally because the forecast doubling of demand for public water supply did not occur. Total demand for public water supply in England and Wales has remained broadly constant for the last decade at about 15,000 Ml/d.

Figure 2 The Water Resources Board's 1973 development strategy.

3.2 National Rivers Authority 1994

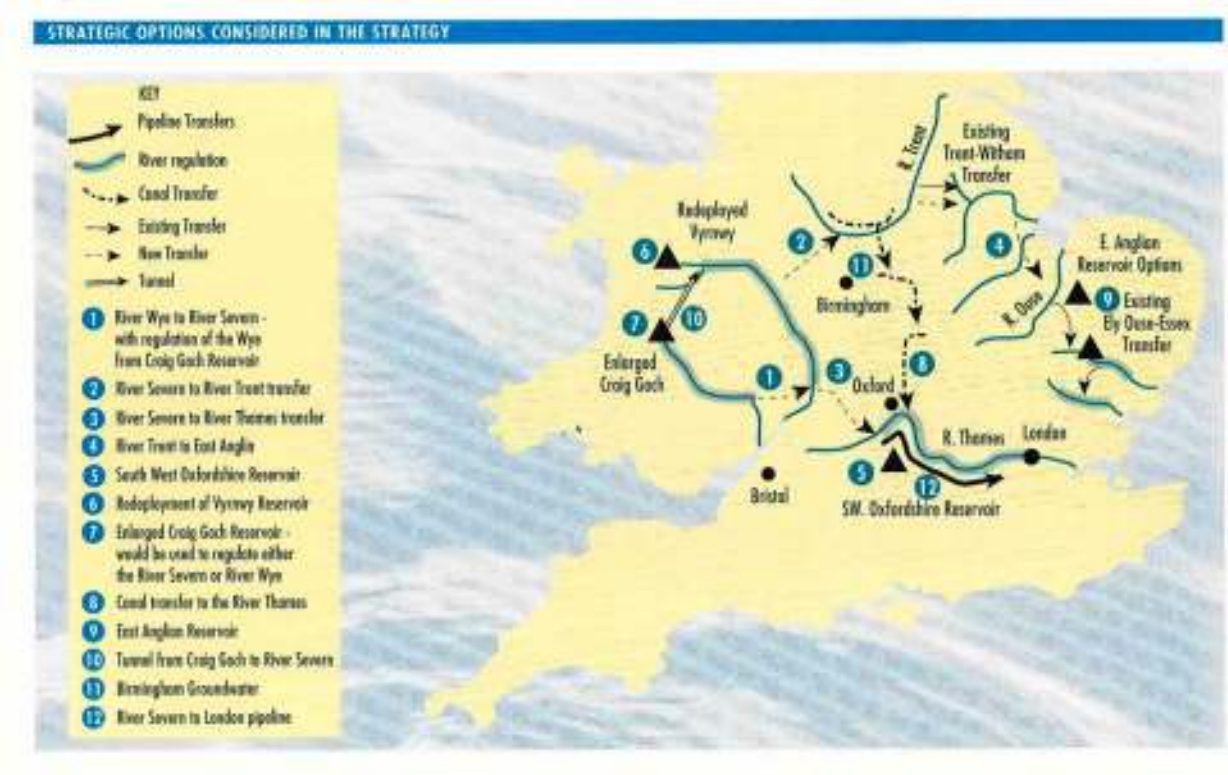
In 1994 the National Rivers Authority aimed "to develop an environmentally sustainable water resources development strategy for England and Wales". It tried to establish whether major water resources developments were required over the subsequent 30 years, and to identify preferred schemes.

A wide range of options was examined along with a range of different future demands for water. Options investigated included (figure 3):

- A new reservoir in Oxfordshire.
- A new reservoir in East Anglia.
- More use of Lake Vyrnwy to regulate the river Severn.
- Enlargement of Craig Goch reservoir in the Elan Valley.
- Transfers from the Wye or the Severn to the Thames.

The strategy concluded that there was a strong possibility that demand could be managed to avoid the need for large-scale water resources developments before 2015, and that leakage should be reduced before any new strategic water resources development. The strategy also identified that the greatest need for additional water would be in the Thames catchment: a Severn to Thames transfer was seen as a possible alternative to a new reservoir, but the environmental risks were greater.

Figure 3 Options considered in the National Rivers Authority's 1994 strategy



3.3 A new assessment of the cost of water transfers

There has been much recent debate on the transfer of water either from northern England or Wales through a pipeline to south east England.

For this report, we commissioned independent consulting engineers to carry out a preliminary study into the cost of developing a large-scale transfer to meet future supply needs in south east England.

This work provides a broad estimate of the cost of transferring water by pipeline from northern England to south east England. The estimate is based on scaling the cost of shorter transfers, and includes source development and pipeline construction. The study looks at the cost of developing new reservoirs in northern England and a pipeline to transfer 1100 Ml/d of water to London. This would meet the total projected demand growth to 2030 in south east England (around 700 Ml/d) and also makes an allowance for demand growth in East Anglia.

The work assumes a distance of 560 km from the northern Pennines to London, broadly following the M6 and then the M1. This route takes the pipeline down the west of the Pennines, avoiding the Humber estuary. To carry 1100 Ml/d with a velocity not exceeding 1.5 m/s, five pipes 1.6 m in diameter would be needed. Consultants estimate that the total capital cost would be about £9 billion to £15 billion. This equates to a capital cost of approximately £8 million to £14 million per Ml/d. This is four or more times as expensive as water companies' estimates of the capital cost of new resource development in south east England of £1.6 million per Ml/d.

A smaller transfer from northern England using an existing source of water would be cheaper. For example, a transfer of 200 Ml/d through a pipeline of this length would cost about £1 billion to £1.6 billion, or a capital cost of £5 million to £8 million per Ml/d. This excludes the cost of new resource development.

This is a preliminary assessment of the cost of an extensive water transfer. A shorter transfer would be proportionately cheaper. Some sites could also prove cheaper, depending on the size and complexity of the construction that would be needed.

The Institution of Civil Engineers has calculated the cost of a transfer from mid-Wales to London to be around £2.4 million per Ml/d. This assessment has been based on the NRA's 1994 water resources strategy, and is not a new investigation of costs or environmental impact. It assumes that the river Severn can be used for part of the transfer. Even so, this is still more expensive than water companies' current proposals for south east England. If a transfer from Wales was exclusively by pipeline, we would expect the pipeline capital cost alone to be about £3 to £5 million per Ml/d. This figure is based on the cost of a 200 Ml/d pipeline from northern England, adjusted to reflect the shorter distance from mid Wales to London.

Our assessment of costs is based on a preliminary desk study only. It does not consider detailed engineering solutions or the environmental impact of the new reservoirs or the pipeline itself. However, it does confirm that large-scale transfers of water to south east England from Wales or the north of England are more expensive than the local or regional water resources developments included in water companies' plans.

3.4 The environmental impact of new water transfers

Since the NRA's 1994 water resources strategy, many aspects of large-scale water transfer have changed. Both the Water Resources Board and the National Rivers Authority expressed concerns about the environmental impact of transferring water between the Severn and the Thames. Transferring water from the Severn directly to the upper Thames is unlikely to be acceptable. Water from the Severn is more acidic than water in the Thames, and this would damage the ecology of the Thames. There is also a significant risk of transfer of fish diseases and alien species.

This means that any new transfer would need to be through a pipeline directly to a reservoir somewhere in the Thames catchment.

Previous studies assumed that the river Severn could be used as part of the transfer route. Using rivers for significant transfers of water can change the flow regime dramatically and damage valuable ecology. A full review of the environmental impact

would be necessary but it seems likely that the capacity of the Severn for further transfers is more limited than previous studies considered.

Many people seem to believe that it would be easy to make significant additional quantities of water available from Wales, usually assuming that there could be new reservoir development in the Elan Valley and Lake Vyrnwy. While it would be possible to increase the size of these reservoirs, there would be many problems to overcome. Any expanded reservoir has a local environmental impact, as well as an impact on downstream river flows and river habitat and ecology. The construction work would generate additional traffic and noise. Any pipelines would also need land and create local disturbance to wildlife, habitats and people.

Water is heavy. Each person uses roughly one cubic metre of water every week. A cubic metre of water weighs a tonne. The energy required for the construction, development and operation of large-scale transfers adds further to greenhouse gases that contribute to climate change.

3.5 Is a water grid necessary?

A water grid is feasible, but it is not an easy option. The social, economic, engineering and environmental problems must not be under-estimated. The costs are greater than local water resources developments in the south east – between £2.4 million and £11 million per Ml/d compared to about £1.6 million per Ml/d for the schemes in water companies' existing plans. This means that a water grid would be necessary in the next 20 years only if water companies' existing plans are inadequate. The next sections explore the implications of the drought and climate change to see if these demonstrate failings in existing water company plans.

4. Drought

Present interest in the development of a water grid stems from the drought in south east England. Two unusually dry winters have led to very low groundwater levels and river flows. Total rainfall over the period from October 2004 to summer 2006 is very similar to the two or three most severe droughts of the last century in this area. As a result, water companies have introduced compulsory restrictions on water use, including hosepipe bans across south east England. Four water companies have sought drought orders to restrict non-essential use of water.

There have been some suggestions that the level of restriction on water use in south east England shows that the water supply system is inadequate, and that it should already have been enhanced with new resources to avoid these restrictions. Others have suggested that this drought demonstrates that new water resources should be developed urgently to help to cope with future droughts and increasing demand for water.

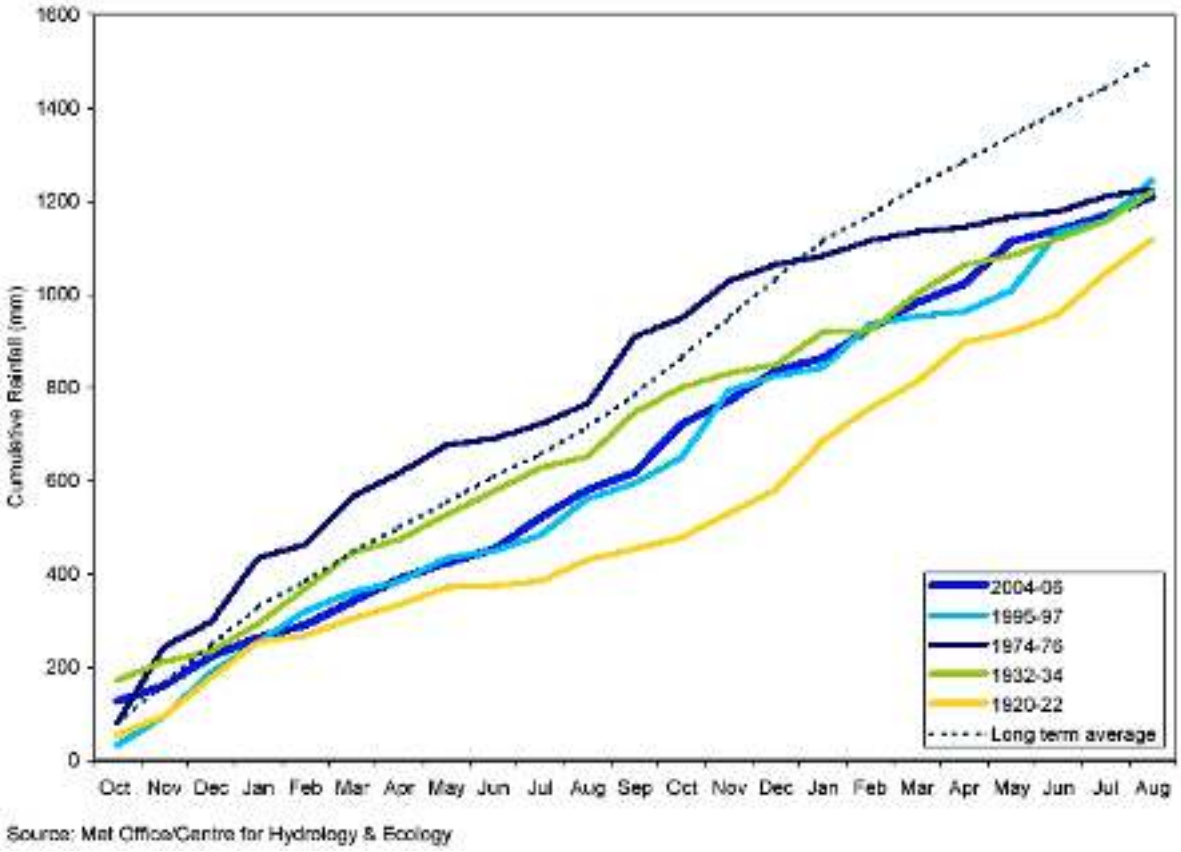
Water resources legislation allows for restrictions on demand during serious droughts, starting with hosepipe bans and extending to restrictions on non-essential use. These are included in water companies' plans as part of the normal way that companies operate.

The frequency of hosepipe bans and non-essential use restrictions is a question for water company boards to decide. Typically companies will plan for hosepipe bans once every ten years, and non-essential use restrictions once every 30 or 40 years. Ministers have confirmed at successive price reviews that they expect water companies to plan to use such restrictions during serious droughts such as those experienced in 1975-76 and 1933-34.

A comparison of rainfall totals for south east England shows that the 2005-06 drought is of similar severity to the notable droughts of 1975-76 and 1933-34 (figure 4). We conclude that the use of hosepipe bans and the introduction of non-essential use restrictions in such a drought would be expected. These restrictions are not evidence that the supply system is failing. They are part of normal planned operation during serious droughts.

This means that if there is a case for large-scale water transfers from other parts of England and Wales, it would be to meet future rather than current demand for water.

Figure 4 Cumulative rainfall for different drought years: Southern region



5. Climate change

There is little doubt that the climate is changing as a result of human activities. Globally, the 1990s was the warmest decade of the last millennium. The present decade looks set to be even warmer than the 1990s.

While the impact of climate change on average temperature is clear, the impact on UK rainfall is more difficult to predict. The UK Climate Impacts Programme's 2002 scenarios suggest that by the 2020s, average winter rainfall may increase by up to 10% in south east England and that average summer rainfall may decrease by 10 to 20%. Total average annual rainfall in south east England will be about the same or slightly higher than it is now by the 2020s. Patterns become more evident by the 2080s, with markedly wetter winters and drier summers.

Extremes of weather are expected to become more common as a result of climate change, with more frequent storms and heatwaves. The impact of climate change on the frequency and severity of long droughts is less clear, but over the next two decades we must prepare to deal with weather patterns that we have not seen in the last century.

Water companies have already included estimates of the impact of climate change on water supply to 2030 in their current water resources plans. Most companies found that by 2030, the impact of climate change on water supply is small. This is because the changes in annual rainfall are small and have little impact on river flows and groundwater levels, which vary enormously from day to day and year to year because of natural climatic variability. We are working with the water companies to prepare for new climate change scenarios from the UK Climate Impacts Programme, due in 2008.

It is important to make sure that water supply systems are prepared to deal with future droughts. Adaptation strategies for dealing with drought must not rely only on energy-intensive engineering solutions: it makes no sense to adapt to climate change by emitting additional greenhouse gases. Making better use of the water we have must be at the core of our response to changes in climate.

6. Future demand for water in south east England

All water companies have 25-year water resources plans. These show how companies plan to meet demand for water through a combination of resource development and demand management. These were last prepared in 2004 but water companies keep them under annual review to check for the need to make significant changes. When the Environment Agency reviewed these plans in 2004, we concluded that all companies had adequate plans for water supply for the next 25 years, but that some companies needed to make rapid progress to resolve existing deficits.

Water companies plan their water supply following standard methods agreed with the Environment Agency and Ofwat. Plans are designed to maintain water supply through the worst drought of the last century, with at least a month's water supply left at the end of the drought. There is an additional margin of safety, called headroom, that allows for uncertainty in the assessment.

Water companies expect total demand in south east England to rise from about 4900 Ml/d in 2005 to 5600 Ml/d in 2030 – an increase of about 700 Ml/d (figure 5).

Demand for water can be broken down into three broad components: leakage, household demand, and non-household demand.

Water companies predict a decrease in leakage of about 270 Ml/d by 2030, falling from nearly 1300 Ml/d in 2005 to about 1000 Ml/d in 2030. Most of this decrease comes from Thames Water, driven by the mains replacement programme for London. The other water companies predict that leakage will be stable at its current level. We think that this is a very conservative assumption and that leakage should fall further over the next 25 years.

Non-household demand is expected to increase slightly from just over 1000 Ml/d in 2005 to nearly 1200 Ml/d in 2030.

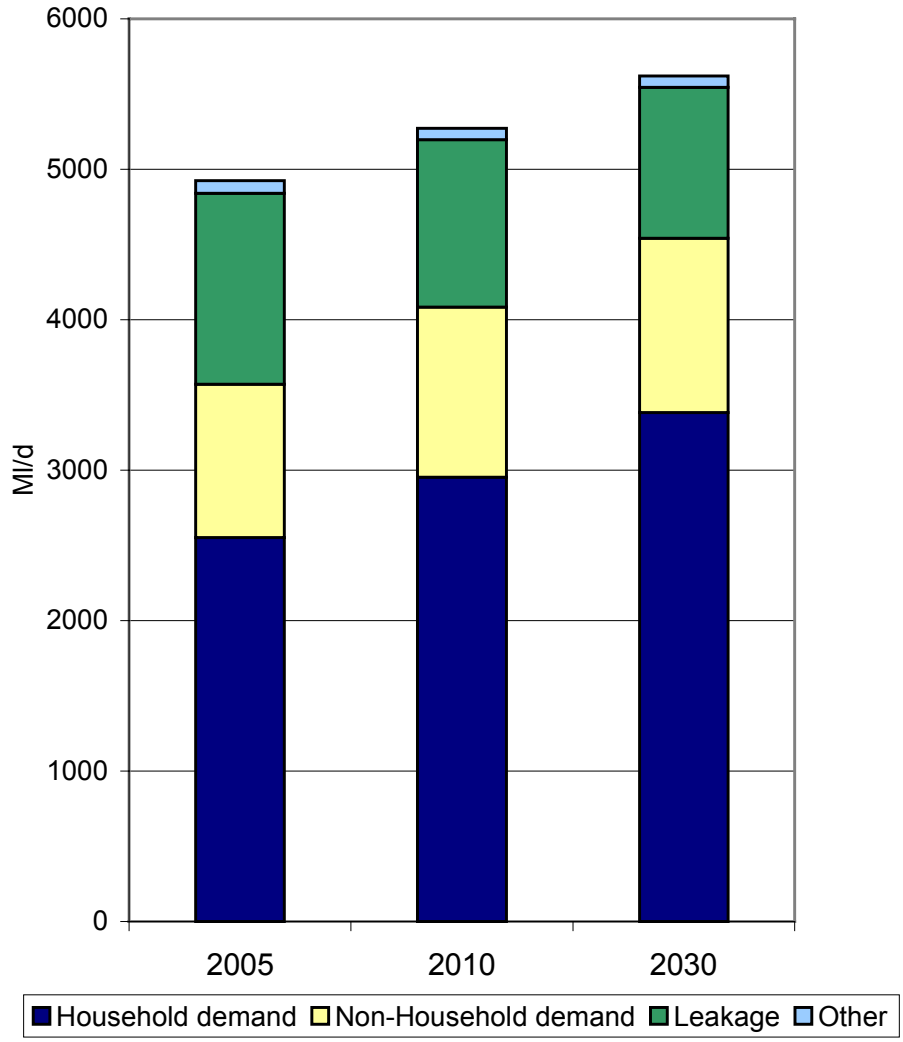
The most significant increase in demand is in household water use. This rises from 2500 Ml/d in 2005 to 3400 Ml/d in 2030. There are two parts to this: a predicted increase in individual water use, and an increase in total population.

Water companies predict that average water use in south east England will increase from 164 litres per person per day in 2004 to 180 litres per person per day in 2030. The increase is expected to be the result of a number of factors, including increased garden watering and additional water use for personal washing. Assumptions vary significantly between water companies. The average individual water use in England and Wales is currently around 150 l/h/d.

Water companies forecast that the population of south east England is expected to rise by 2.2 million to about 18 million in 2030. This estimate is based on regional planning guidance and the Government's sustainable communities programme. According to

water company plans, the total additional demand from the increase in population is about 400 Ml/d.

Figure 5 Forecast increase in demand for south east England



7. Water companies' 2004 plans

Water companies already have plans to meet demand to 2030.

Water companies' 2004 plans identify local or regional developments as the best way to meet the demand for water over the next 25 years.

Water companies in south east England propose seven new or extended reservoirs by 2030 (table 1). In total, these would provide an estimated 550 Ml/d by 2020. Companies are investigating these options and carrying out preliminary feasibility studies. Water companies estimate that the total capital cost of these reservoirs is about £800 million, which is about £1.6 million for every megalitre per day of additional water.

Table 1 Water companies' proposed new and extended reservoirs

Reservoir name	water company	Planned completion date	Deployable output Ml/d
Broad Oak, Kent	Mid Kent Water, Southern Water, Folkestone & Dover Water	2019	42
Clay Hill, East Sussex	South East Water	2015	18
Havant Thicket, Hampshire	Portsmouth Water	2020	23
Upper Thames reservoir, Oxfordshire	Thames Water	2020	380
Bewl reservoir enlargement, Kent	Southern Water, Mid Kent Water	2015	14
Bray reservoir enlargement, Berkshire	South East Water	2008	18
Abberton reservoir raising, Essex	Essex and Suffolk Water	2014	50
Total			**545 Ml/d**

New reservoir development is often unpopular in the area where the development is proposed. The area often includes people's homes as well as farmland and the associated loss of agricultural employment. Reservoir construction is inevitably disruptive, with significant increases in traffic and noise for several years. Planning blight can be a serious issue: people may find it difficult to sell homes until the impact of the proposed development is clear. Once constructed, reservoirs usually become popular tourist attractions, providing new employment.

We believe that some new reservoirs will be required in south east England, though we do not think that all of these proposed schemes will prove necessary. Water companies must work together to explore all of the options and to build strong cases for any proposed reservoir development.

Reservoirs are of little value unless they can be filled from a reliable source of water. In lowland England, this usually means that water has to be pumped from a river. The energy used for this contributes further to greenhouse gas emissions. Additional abstraction from rivers adds to the environmental pressure in the south east: in practice, this usually means that new or enlarged reservoirs can be filled only during the winter.

Water companies' estimates of the deployable output of their proposed reservoirs take this into account.

There is little additional scope in south east England for new groundwater abstractions for public water supply. Groundwater abstractions are already at or near the maximum that can be allowed before there is significant environmental damage.

There is further scope for water companies to share water between different resource zones in south east England. South east England has the most fragmented water supply system in England, with ten water companies operating nearly 40 resource zones. Some of these have more water than others and there are already good examples of water companies sharing water between resource zones. We are working with water companies to make sure that proposed new reservoirs in south east England maximise the water available to the people of south east England with the lowest possible environmental impact.

8. Other options

There are other options for meeting future water needs in south east England.

8.1 Demand management

Demand management is about making better use of the water that is available. There are three main areas where demand management could help to improve water supply in south east England:

- Further leakage reduction
- Industrial and commercial water efficiency
- Household water efficiency.

8.1.1 Leakage reduction

Water companies forecast that by 2030, leakage in south east England will have fallen from nearly 1300 Ml/d to about 1000 Ml/d. Most of this decrease is as a result of Thames Water's mains replacement programme. Other water companies in south east England forecast little change in leakage over the next 25 years. This is because they are already at or close to their calculated economic level of leakage – the level of leakage where it is cheaper to develop new sources of water than to reduce leakage.

We believe that this is an unambitious approach to leakage. As water becomes more scarce, leakage targets will become more demanding and the volume of water lost through leaks must be reduced. This can be done either through putting more effort into finding and fixing leaks, or by investing more in replacement of water supply mains. We believe that mains replacement should be accelerated from current rates that see most pipes remaining in place for 100 years or more.

8.1.2 Industrial and commercial water efficiency

Water companies across south east England forecast an increase in industrial and commercial water use over the next 25 years. This is a reversal of the trend of the last decade, when we have seen industrial and commercial water use decline by 500 Ml/d across England and Wales.

There is relatively little industrial and commercial use of water in south east England: non-household demand makes up about a fifth of water supply, compared to about a quarter across England and Wales. We believe that there is still scope for increased water efficiency at very low cost. Studies show that most industrial and commercial premises could save between a quarter and half of the water that they use by taking measures that will pay for themselves in reduced bills in less than two years.

8.1.3 Household water efficiency

Household water use makes up more than half of total demand for water in south east England, and water companies expect this demand to grow over the next 25 years.

We are working with Government to make sure that new homes are built to high standards of water efficiency. This includes low flush toilets, better appliances, and more efficient showers. Even with these improved building standards, more new homes will result in greater water use. For this reason, we believe that it will be important for existing homes to become more water efficient. This will need a combination of different measures.

We believe that increased household water metering is essential: unless people know how much water they are using, they cannot see the impact of their actions to save water. We think that every household in south east England should have a water meter by 2015. Studies show that water metering suppresses demand by between five and 15 per cent, as people become more aware of their water use.

There should be better information about the water use of different appliances. At the moment, it is hard to find out how much water a new washing machine or dishwasher will use. Better product labelling in shops will help people to make more informed choices about their new appliances.

Technical solutions alone will save water, but most people could save between 10 and 25 per cent of their water use by simple changes in the way they use water. For example, taking a shower (but not a power shower) can use less than a third of the water that is needed to take a bath. Washing machines and dishwashers are more efficient when they are full. There is no reason why individual water use needs to increase over the next 25 years: simply maintaining current individual water use would cut the projected demand growth in the south east by 300 Ml/d.

8.2 Other resource development options

New sources of water are seen by many people as the main solution to reduce the impact of future droughts. There are many possible ways to develop new sources of water: each have their advantages and disadvantages. Other than reservoirs, options include:

- Desalination.
- Effluent reuse.
- Transfers of water from other countries in ships or as icebergs.

8.2.1 Desalination

Desalination is the treatment of brackish or salt water to produce drinking water. The energy used depends on the salinity of the water. It takes most energy, and therefore costs more, to desalinate sea water.

There are two proposed desalination plants in south east England. Thames Water's proposed plant in the tidal part of the river Thames has been the subject of a recent planning inquiry. South East Water proposes a smaller plant at Newhaven in Sussex.

Desalination is energy-intensive, contributing further to greenhouse gases and climate change. It also creates highly saline waste for which a disposal route has to be found. For these reasons, desalination is unlikely to play a major role in the water supply of south east England. It may be justified in some circumstances: for example, desalination can be a good way to deal with peaks in demand, for example where there is a significant seasonal tourist population.

8.2.2 Effluent re-use

Effluent re-use takes treated water from a sewage treatment works and uses it for further public water supply. Usually this water would be discharged to a river or the sea, so effluent re-use can provide a reliable source of water. The main concern in effluent re-use is the protection of public health. It is vital that there are sufficient barriers between untreated waste and the public water supply system to avoid contamination. This is possible but requires careful design and good operation. Effluent re-use is particularly good where the water would otherwise be discharged to sea. Inland, discharges from treatment works often support summer river flows and the removal of this source of water could damage the environment.

There are further opportunities for effluent re-use in south east England, but these are limited, mainly as a result of the environmental impact of the associated reduction of river flow. Effluent re-use is likely to play a further part in water supply in south east England.

8.2.3 Transfers of water from other countries

Transfers of water from other countries have been considered at different times over the last twenty years. The options include using supertankers full of water, towing bags of water behind boats, or even towing icebergs from the north Atlantic. Some people have suggested a pipeline from northern France, but it seems that there is little spare water in this area. None of these options has ever been seen as an effective or necessary way of supplying water to south east England.

9. Conclusions

This report has considered the case for the development of an extensive system of water transfers to south east England. Based on existing information and a new estimate of the costs of water transfer, we conclude that:

- The drought that started in November 2004 is one of the worst in the last hundred years, being comparable to the droughts of 1933-34 and 1975-76. Restrictions on water use in such droughts are part of water companies' planned responses, in line with water resources legislation and Government policy. These restrictions do not demonstrate that the water supply of south east England is inadequate.
- Water companies' estimates of water demand in south east England by 2030 include an increase in population of over 2 million people as well as a further increase in individual water use. We can see no reason why individual water use should not remain at current levels or even reduce, so these forecasts may well overestimate total future demand for water.
- Water companies' plans to meet future water supply in south east England rely heavily on new or modified reservoirs, and there is scope for more sharing of water between companies.
- Water companies demonstrated in their 2004 plans that their estimates of future demand can be met by a combination of local and regional development and demand management.
- The cost and environmental impact mean that large scale transfers of water from the north of England or Wales to the south east are unnecessary and inappropriate.

This assessment supports the conclusions of the Environment Agency's 2001 water resources strategy: that some local or regional resource development will be necessary but that there must be further progress on leakage control and demand management.

We are about to start developing a new water resources strategy for England and Wales. In the next year, we expect to set out the principles on which this strategy will be developed. These will be based firmly on the concept of sustainable development. We are also working with Ofwat, Defra and the Welsh Assembly Government on guidelines for water companies' new statutory water resources plans. These plans are due to be completed in 2008. These plans will undergo public consultation, which will provide an opportunity for further public debate on the future of water supply in England and Wales.