

Water Industry Finance and Investment

Why water services need so much investment

Summary

For much of the 20th century investment in water supply and sewerage, like other essential public services, was the minimum necessary to avoid service failure. In the past 20 years changing priorities about health and the environment, reflected in European Union directives, have led to urgent demands for improvement.

These priorities and the threat of prosecution by the European Commission led to major investment in the quality of drinking water and wastewater treatment. There was also investment in maintaining plant and pipe networks and ensuring a reliable supply, but these were given a lower priority.

Since 2005 the upgrading of old assets has become the top priority, but investment in all aspects is likely to be needed for the foreseeable future. Managing the impact of climate change will be an important consideration.

Water and sewerage infrastructure

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Water supply involves 4 main processes: collecting water from the environment (abstraction); treatment; distribution to homes and businesses; and customer services, including billing. The wastewater service uses the same processes in a different order.

Collection, distribution and treatment all use physical assets. Reservoirs, mains, sewers and treatment works are the most obvious, but companies also need pumps, vehicles, IT, remote monitoring and control systems, and other equipment. All are essential water industry infrastructure although the word is often used to refer only to mains and sewers (the 75% of assets that are underground and were for too long out of sight and mind). The assets are used 24 hours a day, year in year out, and must be well maintained to stay fit for

purpose. They need continuous monitoring for either repair or replacement. But throughout the 20th century investment in this humdrum but essential work was never high enough. Even now, early in the 21st century, we are still catching up and people, the economy and the environment are disadvantaged as a result.

How did this happen?

Inadequate investment

Investment rose but not by enough to do the job while keeping bills at acceptable levels.

For three quarters of the 20th century it is probably true to say that the country looked the other way. As long as there were no major service failures – and no embarrassments like the ‘Great Stink’ of 1858 which led to construction of the famous London sewer network – we relied on the achievements of Victorian engineers with improvements and repairs only when necessary. In the last quarter of the century the

consequences of this neglect were beginning to be understood. EU directives began to bite and the urgent need for better wastewater treatment and higher quality tap water was accepted.

Investment was stepped up significantly but it was not enough to do everything necessary while keeping water bills within acceptable limits. Failing to comply with directives would have meant the shame of prosecution.

What had to give was the essential extra spending on maintaining and repairing pipes and sewers. For the time being the focus would have to be on whether these assets were fit for purpose (their ‘serviceability’ in the jargon) rather than their age or condition.

Sweating the assets

Investment at the rate allowed from 2000 to 2005 meant that it would take well over a hundred years to renew the whole network.

The result is that many of our cities still rely on mains and sewers that should have been replaced decades ago. Some are 100 or 150 years old. The work needed is complicated, disruptive and expensive. Just how expensive can be gauged from looking at the scale of water infrastructure.

The total replacement cost of the physical assets of the water industry in England and

Wales in 2006-07 was £239 billion. Wastewater infrastructure costs more than water supply mainly because larger scale engineering is needed at each stage of the process.

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Investment history

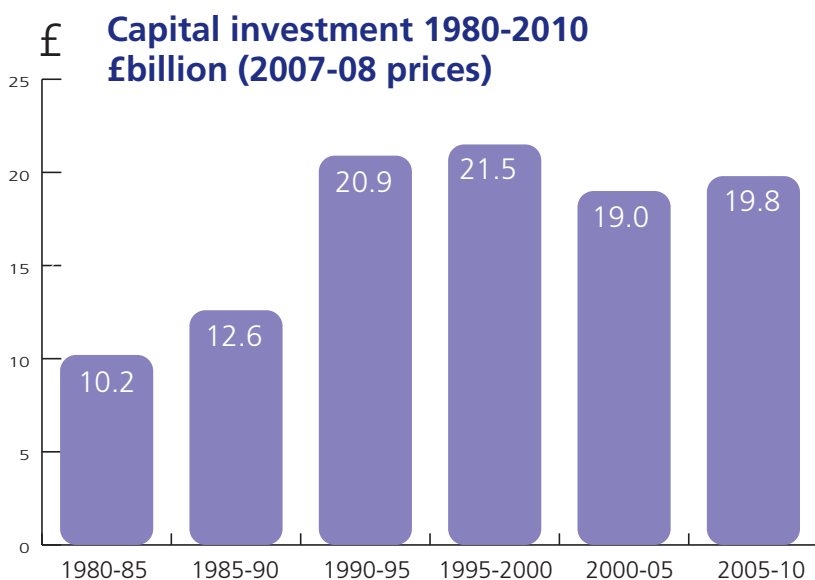
Aim: to cut the pollution of rivers and beaches that was shaming the UK as “the dirty man of Europe”.

While investment in repairing and replacing pipes and plant (usually called capital maintenance) was just ticking over, investment in quality enhancement required by the government powered ahead.

The overriding objectives were better quality drinking water and a cleaner environment – especially cutting the pollution of rivers and beaches that was bringing shame on the UK as “the dirty man of Europe”.

Taking all investment together between 1980 and 2010 the water industry in England and Wales will have invested over £104 billion (2007-08 prices).

The chart shows the record in 5-year cycles. There was a significant increase in investment following the privatisation of the water and sewerage companies in 1989.



Note: 2005-10 figures at 2004 Price Review

Source: Ofwat and Water UK

Capital investment assumptions 2005-10

2007-08 prices	Water £ billion	Sewerage £ billion	Total £ billion
Capital expenditure (five-year total)			
Capital maintenance	5.0	4.9	9.9
Supply-demand balance	2.0	0.7	2.7
Quality enhancements	2.4	4.1	6.5
Enhanced customer service levels	0.0	0.7	0.7
Total	9.4	10.4	19.8

Source: Ofwat and Water UK

There has also been investment in ensuring that we have enough water to meet the country's needs and expectations – the right supply-demand balance – and in enhanced service levels.

Since 2005 capital maintenance has been the highest priority. The table above shows investment in the different categories for the current 5-year management period.

These aggregate figures show the industry's overall priorities. The level of investment by individual companies varies according to the needs and wishes of their customers, the climate in their area, and the condition of the assets they inherited from earlier generations.

Investment in the future

Many other sectors, including farming, transport, construction, manufacturing and consumers, have essential parts to play.

Everyone connected with the water industry believes that the need for investment is set to continue into the future. An intense debate is under way about the scale of investment needed and the impact on customers' bills and the economy.

The main demands will come in wastewater treatment, meeting the supply-demand balance and keeping up (or even increasing) the rate of investment in infrastructure repair and replacement.

Wastewater treatment

In 2003 the water framework directive was adopted into UK law. The directive requires that all EU water courses reach "good status" within a set timeframe; and 'daughter' directives covering control of polluting

substances and protection of groundwater are planned. Water and sewerage companies will play an important part in delivering these directives through their investment programmes but many other sectors, including farming, transport, construction, manufacturing (including household products) and consumers, have essential parts to play.

Supply-demand balance

Water companies aim to guarantee a reliable supply through 25-year water resource management plans. The plans are based on a twin-track approach – ensuring the right level of available supply and managing demand. They invest in regional water grids, increasing water storage in reservoirs and many other supply side measures. To reduce demand they invest in minimising leaks and working with stakeholders to encourage wise use of water through meters and water efficient appliances.

Capital maintenance

Companies and regulators agree that we shall have to go on investing to bring both water and sewerage networks up to scratch; they are continually improving their knowledge of the condition of pipes and plant which will help make improvement work more effective.

The drought in south-east England during 2005-06 and flooding of 2007 has further raised awareness of the need to 'lock in' improvements and tackle the inadequate sewers and leaking mains which are the consequences of the years of neglect.

Climate change

Climate change is the biggest threat to the sustainability of water services in the medium term. Water company operations and assets are among the most vulnerable to a more volatile climate and are already feeling the pressure. More frequent droughts, more intense rainfall and flooding are going to influence investment plans in all areas of the business.

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