

## **London's water supply**

A report by the London Assembly's Public Services Committee

October 2003

Public Services

Public Services

LONDON ASSEMBLY  
Public Services



## **London's water supply**

A report by the London Assembly's Public Services Committee

October 2003

# copyright

**Greater London Authority  
October 2003**

**Published by**  
Greater London Authority  
City Hall  
The Queen's Walk  
London SE1 2AA  
**[www.london.gov.uk](http://www.london.gov.uk)**  
enquiries **020 7983 4100**  
minicom **020 7983 4458**

**ISBN 1 85261 534 6**

This publication is printed on recycled paper

## Chair's foreword



There's one part of London's heritage of architecture that London's tourists don't get to see. The cathedrals of Victorian brickwork that make up our main sewers in London make for spectacular viewing. But this Victorian infrastructure needs renewing. A third of London's water pipes are over 150 years old.

The dry summer we have just had concentrates the mind on the security of our water supplies. London apparently is drier per head of population than Madrid and Istanbul.<sup>1</sup> While it is years since we had hosepipe bans it was salutary for the Committee to learn that there would be a significant risk to public water supplies if we had two years of dry weather. That Thames Water has the second worst leakage rate in the country does not help. Water leakage runs at the equivalent of 300 Olympic-sized swimming pools a day. Performance has deteriorated since the winter of 2000.

We also have to ask whether in the twenty-first century discharges of combined foul sewage and rainfall into the Thames is appropriate. Thames Water proposes to invest £3.5 billion to tackle some of these issues. Water Companies are much more in debt than they were when first privatised, so limiting their ability to borrow for investment compared to fifteen years ago.

Londoners will have to pay more for water but Londoners will also look askance at the regulator if 26% of Londoner's water bills continue to pay for Thames Water's return to capital (interest payments, dividends and tax). Ofwat needs to get tough with Thames Water and demand higher investment to reduce water leakage.

A handwritten signature in black ink that reads "Andrew Pelling". The signature is written in a cursive style with a long horizontal stroke underneath.

**Andrew Pelling**

Chair of the Public Services Committee

---

<sup>1</sup> Thames Water, Water, Protecting everyone's liquid assets

# The Public Services Committee

The London Assembly established its Public Services Committee on 10 April 2002. It is one of eight Committees that between them cover the range of policy areas relevant to London government.

The members of the Committee are:

Andrew Pelling (Chair)	Conservative
Diana Johnson (Deputy Chair)	Labour
Meg Hillier	Labour
Elizabeth Howlett	Conservative
Jenny Jones	Green
Graham Tope	Liberal Democrat

The terms of reference of the Committee are:

- To examine and report from time to time on the strategies, policies and actions of the Mayor and Functional Bodies
- To examine and report from time to time on matters of importance to Greater London as they relate to the provision of services to the public (other than those falling within the remit of other committees of the Assembly) and the performance of utilities in London
- To take into account in its deliberations the cross cutting themes of: the health of persons in Greater London; the achievement of sustainable development in the United Kingdom; and the promotion of opportunity
- To respond on behalf of the Assembly to consultations and similar processes when within its terms of reference

## Contact

Kan Grover, Scrutiny & Investigation Manager  
020 7983 6540 [kan.grover@london.gov.uk](mailto:kan.grover@london.gov.uk)

# Contents

	Page
Chair's foreword	1
The Committee	2
Chapter 1 Introduction	4
Chapter 2 London's water supply	5
Chapter 3 Water mains system	7
Chapter 4 Sewerage system	12
Annex A Summary of recommendations	16
Annex B List of witnesses	17
Annex C Orders and translations	18
Annex D Scrutiny principles	20

# 1. Introduction

- 1.1 The London Assembly's Public Services Committee agreed on 17 June 2003 to undertake a scrutiny of London's water and sewerage infrastructure. The aim of the scrutiny was to identify the condition of the water mains and sewers, and consider the requirement for future investment levels in London's water infrastructure. It was envisaged that this would also provide an opportunity to examine some of the current investment strategies that are in place to address the repair and replacement of water pipes and tunnels.

The terms of reference for the scrutiny were:

- To investigate the quality of water and sewerage infrastructure in London.
- To consider any requirement for further investment in water and sewerage infrastructure in London.

- 1.2 The Committee received written evidence from a number of organisations including the Office of Water Services (Ofwat), Thames Water, the Environment Agency, and Water Voice Thames (the consumer group). The Committee also held an evidentiary hearing on the 22<sup>nd</sup> July 2003 where they took oral evidence and a full list of the witnesses can be found at Annex B. The Committee is grateful to everyone who contributed to this scrutiny.

- 1.3 Assembly Members on the Committee visited one of Thames Water's Pumping Stations at Abbey Mills in East London on the 8<sup>th</sup> July 2003. The Committee wishes to thank the Thames Water employees at the Abbey Mills Pumping Station for their time and trouble in taking them round the pumps, screening filters, down into the sewer and guiding them through the tunnels. The Committee commends the Thames Water employees for the essential work they do in a tough and unpleasant environment.



## 2. London's water supply

- 2.1 The history of London government can be traced back to the need for municipal regulation of the water supply. Most of London's water system is based on Victorian piping. More than half of Thames Water's water mains are over 100 years old; around a third are over 150 years old.<sup>2</sup> The early water works developed into the water boards that were later privatised. The current private companies that supply our water are regulated by the Office of Water Services (Ofwat). Although there are no longer a London County Council and Middlesex County Council overseeing the supply of water to the capital, the London Assembly is uniquely charged with investigating issues of importance to London.
- 2.2 The water industry was privatised in 1989. In the fourteen years since then there have been many mergers and changes to the original water companies. In the summer of 2000, Thames Water became part of the German group RWE, a large German company that is involved in water supply around the world.<sup>3</sup> The RWE group includes American Water Works in the USA and Rheinisch-Westfälische Wasserwerksgesellschaft mbH (RWW) in Germany. RWE is the largest water supplier in Germany and number three in the world. They have subsidiary companies operating in Chile, China, Spain and other countries.<sup>4</sup> These changes have brought both benefits and some difficulties. Thames Water is no longer a public utility solely concerned with the supply of water to the London region. It is now a private business with shareholders who expect a certain rate of return on their investment and ultimately it has to answer to them.
- 2.3 The rate of return that shareholders expect is something that Thames Water and the water regulator Ofwat did not want to discuss in public at our Evidentiary Hearing. But this is an important factor because it affects how much money is available for investment in infrastructure. In its 2001-2002 financial performance and expenditure report, Ofwat recorded a Thames Water dividend of £124 million; slightly up on the previous two years but a great deal less than the £945 million dividend it recorded in 1998-1999.<sup>5</sup> Significant amounts of money are there but if further funding is not going to come from lessening returns to investors, the only other possible source is increasing customers' bills. This will not be popular with London's water customers, but may be essential if the water and sewer infrastructure is to be maintained in good working order for future generations of Londoners.
- 2.4 In their annual report, Thames Water stated that the group turnover in 2002 was €2,850 million (£2,030 million), an increase of 4% over the previous year. The UK regulated business accounted for 60% of Thames Water's businesses' turnover.<sup>6</sup> In 2002 Thames Water spent approximately £80 million on operational improvements towards the reduction of water mains leakage in London alone.<sup>7</sup> Additionally, the company continued with their other

---

<sup>2</sup> Thames Water, Water, Protecting everyone's liquid assets

<sup>3</sup> RWE, Thames Water, Annual Report, 2002, p.5

<sup>4</sup> RWE, Thames Water, Annual Report, 2002, p.6

<sup>5</sup> Ofwat, Financial performance and expenditure of the water companies in England and Wales, 2001-2002

<sup>6</sup> RWE, Thames Water, Annual Report, 2002, p.6

<sup>7</sup> Thames Water, Water, Protecting everyone's liquid assets

commitments of tackling sewer flooding, that still threatens a small number of homes in the region, and water resources planning for the future, such as extending the scheme to store supplies in the naturally occurring underground Aquifers and tapping into the groundwater levels. They have also invested £250 million on the Thames Water Ring Main to improve the supply of water to the Capital.<sup>8</sup>

- 2.5 The water company's infrastructure is split into two main areas, the water main system, and the sewerage system. Both systems have investment needs that have been addressed to varying degrees. There are no easy solutions due to the complexity of the structures and the amount of building and traffic in London. However, it became clear from our investigation that there is a need for greater investment sooner rather than later.
- 2.6 As noted above, the bulk of the engineering work to build the mains system in London was completed during the nineteenth century with little additional construction having been undertaken in recent decades. During the investigation, it became apparent that although the water and sewer systems are still working, they are in significant need of repair, maintenance and modernisation. In the three years prior to the 2000/2001 winter, leakage was reduced by 38% but movement in London's clay soil caused damage to the pipe system, since when leakage levels have increased and continue to do so.<sup>9</sup>
- 2.7 Reversal of this problem costs money and, as Thames Water is no longer a public body, the money is not going to come from public funds. The question is, where will this money come from and will Thames Water's customers be expected to fund the infrastructural improvements through increased water bills, as indicated by Thames Water themselves?<sup>10</sup>

---

<sup>8</sup> Thames Water, Water, Protecting everyone's liquid assets

<sup>9</sup> Thames Water, Water, Protecting everyone's liquid assets

<sup>10</sup> Thames Water, Water, Protecting everyone's liquid assets & RWE, Thames Water, Annual Report, 2002, pp. 8-9

### 3. Water mains system

- 3.1 The majority of London's water supply comes from outside the city, from the Rivers Thames and Lee and the associated storage reservoirs. Supplies are ultimately limited by seasonal rainfall and available reservoir and groundwater storage.<sup>11</sup> Therefore, leakage levels are important, as there is not a limitless supply in the region. London uses nearly 60% of the available water resources in the region, substantially more than any other region in England.<sup>12</sup> In comparison, Wales uses just 8% of its average effective rainfall.<sup>13</sup> When the population density of London is factored in, this means that there is considerable pressure on London's water resources.
- 3.2 London's water main system is in a poor state of repair. Thames Water has the highest level of water leakage in the United Kingdom. Since privatisation the rest of the country has been gradually improving its water leakage figures. However, Thames Water's figures have actually worsened since 2000. Ofwat told us that they introduced mandatory targets for reducing leakages in 1997 and pushed water companies towards a robust approach to managing their distribution systems towards an economic level of leakage. That is the level where the costs of saving water are broadly equivalent to the value of the water itself.<sup>14</sup> Unfortunately, Ofwat, in its Security of Supply report, was forced to rank Thames Water 22<sup>nd</sup> out of the 23 water companies in England and Wales.<sup>15</sup>
- 3.3 London has some special features that affect the condition of the water mains. For example, Thames Water told us that London has a particular problem, in that the water network is built in London clay and this tends to cause corrosion of the water mains as the clay dries out in the summer and expands in the winter, which creates fracture potentials.<sup>16</sup> Also, as London is so heavily populated, the water main is less accessible due to the number of other tunnels and buildings. The issue of excavating the road system in order to effect repairs also causes additional problems and inconvenience through the disruption that digging up roads causes to business, traffic and local residents.
- 3.4 In their annual report on water leakage, the water regulator Ofwat criticised Thames Water for the increase in their water leakage levels. This is an important issue for Londoners, as the amount of water wasted obviously affects the cost of supplying water to customers. It seems a little unfair that customers are expected to conserve water, whilst the water company is allowing high levels of water leakage to occur and proposing to charge consumers more money for improving the service. All the water companies are under a duty to lower leakage levels and so help the environment by the efficient use of water. This would in turn benefit their own customers, leading to greater efficiencies and, hopefully, eventually to the reducing of water bills that they state as being one of their aims.<sup>17</sup>

---

<sup>11</sup> Memorandum – Environment Agency, p.1

<sup>12</sup> Memorandum – Environment Agency, p.1

<sup>13</sup> Thames Water, Water, Protecting everyone's liquid assets

<sup>14</sup> Minutes of Evidence, 17 June 2003, p.5

<sup>15</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.5

<sup>16</sup> Minutes of Evidence, 17 June 2003, p.7

<sup>17</sup> RWE, Thames Water, Annual Report, 2002, p.8

- 3.5 Thames Water's leakage figures are much higher than the rest of the water industry's, for example, in 2001-02 most of the water companies lost between 6 to 12 Cubic metres per km main per day, whilst Thames Water lost 28 Cubic metres per km main per day.<sup>18</sup> Ofwat stated in their annual leakage report for 2001-02 that Thames Water lost 865 MI/d (mega litres per day). That is an increase of over 30% on the 1999-2000 figure of 662 MI/d, and nearly as high as the 1997-98 figure of 906 MI/d.<sup>19</sup> In lay terms, such extreme leakage of water equated, in the year to April 2000 with its lower leakage figures of 662MI/d, to enough water to fill 300 Olympic-sized swimming pools every day.<sup>20</sup>
- 3.6 Ofwat stated in their annual report on leakage that Thames Water now accounts for over a quarter of all leakage in England and Wales. Thames Water's leakage is so high that Ofwat did not set a target for Thames Water on the same basis as the rest of the industry.<sup>21</sup>
- 3.7 At our evidentiary hearing we questioned Thames Water on the progress they hoped to make in reducing water leakage from their water mains. Thames Water has invested in the new ring main for London, similar in concept to the M25, encircling the region, to improve the supply of water to London. This is an extremely positive step and will go a good distance towards modernising the water system in London and in improving the service for customers. They did however acknowledge there was still work to be done to lower the leakage levels of existing water mains in the capital. Part of the problem is that leakages are not always easy to identify, unless there is visible evidence of the leak, such as significant water loss and localised flooding, or a burst water main.
- 3.8 In order to try and limit the amount of supply lost through leakage, Thames Water has lowered the water pressure of the supply. However, this has a knock-on effect on tower blocks, where there may not be sufficient pressure for adequate supply to reach the top floors. This is unacceptable, as top floor residents will suffer and companies in the higher floors of office blocks might not be able to operate because of health and safety regulations. Therefore, a balancing act has to be done to satisfy the needs of the customer, who requires water at high pressure, with the needs of the environment to conserve water by reducing leakage through lowering pressure.

*Recommendation 1*

**The Committee recommends that Thames Water, in partnership with Ofwat and the Environment Agency, consult with landlords of tower blocks in London suffering from low water pressures, to evaluate the scale of the problem, and develop and implement a plan to make sure the effects on businesses and residents are minimised.**

<sup>18</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.19

<sup>19</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.13

<sup>20</sup> Mark Benham, The Evening Standard, Friday October 6<sup>th</sup> 2000, p.27

<sup>21</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.11

- 3.9 We can all help reduce water wastage by the more efficient use of water in our homes. Many of us can remember the water campaigns in the 1970s and 1980s urging us to help conserve water by taking a shower rather than a bath, or by not leaving the tap running whilst brushing teeth. There are toilets with more efficient flushes available and other home improvements that can help lower water consumption. An industry led campaign where these water efficient improvements are publicised and easily available to the public would help to raise awareness amongst consumers of the need to protect our water resources and improve efficiencies in the London water system.
- 3.10 This view was shared by the Environment Agency who stated that water efficiency education and promotion must form part of the long-term strategy for managing London’s water resources. They said, “there is considerable scope for water efficiency in suburban London”.<sup>22</sup> The Committee agrees that there needs to be a two pronged approach with the water company towards reducing leakage that is tied in with consumers using water in a more responsible and efficient manner.

*Recommendation 2*

**The Committee recommends that Thames Water, in consultation with the Environment Agency and Ofwat, promote to the consumer the efficient use of water across London, in conjunction with its leakage reduction programme.**

- 3.11 Water leakage is a major problem and could get worse if the current weather patterns become drier. We heard from the Environment Agency that the level of leakage is such that continuity of water supply for London cannot be guaranteed. If there is a moderate drought for the next two years, there is unlikely to be sufficient water to meet all Thames Water requirements. In such a situation, customer restrictions and environmental drought orders would have to be introduced. In a severe drought it is possible that standpipes and environmentally damaging drought orders would be needed. Fortunately, the rainfall last winter meant that Thames Water did not have problems with water supply to London this summer.<sup>23</sup>
- 3.12 The leakage problem is having wider long-term implications. London water customers have not suffered in recent years, thanks to adequate rainfall. But, the Environment Agency stated that they had examined different supply/demand scenarios in their Water Resource Strategy for the Thames Region. These showed that without any further action to manage demand and reduce leakage, new strategic water resources schemes could be required by 2015.<sup>24</sup> This means the exploration and development of water sources further away from London, such as at Gatehampton in Oxfordshire, and the additional costs associated with supplying water from further away. We believe that developing new water resources outside the region will not solve London’s long-term problem of leakage due to decaying water mains. Greater investment in

<sup>22</sup> Memorandum – Environment Agency, p.3

<sup>23</sup> Memorandum – Environment Agency, p.2

<sup>24</sup> Memorandum – Environment Agency, p.1

replacing and repairing the mains will be a better use of financial investment, as will the continued development of water resource planning.

- 3.13 These new water resource schemes do not provide a long-term solution to Thames Water's leakage problems. The Environment Agency told us that unless leakage control is improved, leakage may continue to rise, necessitating still more resource development. The water resources of the Thames catchment area are the most highly utilised in the UK. There is limited scope for further development, and any new development is likely to be more expensive than in other parts of the UK.<sup>25</sup> Rising water abstraction costs would cause customers' bills to rise. The way to limit the need for new water resources is to tackle leakage levels and so reduce overall consumption, in conjunction with consumer efficiency drives.
- 3.14 London has some of the oldest water mains in the UK, and we were told by the Environment Agency that with low rates of mains replacement, continued mains failure is likely, showing up as burst water mains in the high street. London needs a long-term plan that concentrates on improving the mains with the worst record first.<sup>26</sup> What is required is an appropriate level of investment of a sustained and long-term nature to replace London's old water mains. The Committee encourages Thames Water and Ofwat to ensure that sufficient investment is made and that their strategic plan is adhered to in order to achieve real improvements in London's water system.
- 3.15 Mike Tempest, the Engineering Director at Thames Water, was able to sum up the current state of affairs, "It is going to take a long time because ultimately, from a London perspective, a good deal of the water mains are going to need replacement. That will be driven on the basis of a combination of what is affordable in terms of the benefit it brings in terms of customers' bills as we are supported by Ofwat, and it will also be affected by yourselves in terms of how much disruption you are prepared to tolerate with digging up the roads".<sup>27</sup>
- 3.16 However, it appears that Thames Water's leakage problems are not small enough to be easily delayed. Ofwat singled out Thames Water for criticism in their leakage report last year. Ofwat stated that, "one of Thames Water's main problems was that it had a poor understanding of just how the water it produced was being used or lost". Moreover this problem is actually growing rather than being controlled, "Thames Water's problem was not only that leakage was high (which unique London factors could partly influence) but that it was also rising".<sup>28</sup>
- 3.17 Ofwat's determination was that the increased leakage in 2001-2002, "is not just due to an improved water balance and a better reporting methodology. Underlying leakage is still increasing. This means that the resource development programme is increasingly unlikely to deliver the required security of supply by March 2004" (the deadline which Thames Water agreed to achieve its key goals by).<sup>29</sup> Plainly, this is not a time for complacency, but for purposeful investment.

---

<sup>25</sup> Memorandum – Environment Agency, p.2

<sup>26</sup> Memorandum – Environment Agency, p.2

<sup>27</sup> Minutes of Evidence, 17 June 2003, p.20

<sup>28</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.21

<sup>29</sup> Ofwat, Security of supply, leakage and the efficient use of water 2001-02 report, p.21

3.18 Thames Water also made the point on investment in infrastructure that “It depends on the rate of return that they would make. It is a business. We are not a public utility, we are a private business and as such there is a balance to be struck between return to the shareholder and the investment that we make”.<sup>30</sup> Thames Water added that approximately 26% of Londoner’s water bills pay for Thames Water’s return to capital (interest payments, dividends and tax).<sup>31</sup> Thames Water did channel £80 million into reducing leakage levels in 2002,<sup>32</sup> and will continue to invest in the reduction of supply lost through leakage. Thames Water’s proposal for the 2005-2010 Strategic Business Plan is to increase investment to £820 million, which does not include money to be raised from loans. These proposals would lead to the average annual household bill increasing by £39, but Londoners must ask themselves whether this current level of investment is really enough to secure their future water supply.

*Recommendation 3*

**The Committee recommends that Ofwat set more stringent targets on Thames Water for addressing the ongoing and increasing water leakage from its pipes. We believe Ofwat is not serving the long-term interests of Londoners well enough by failing to focus Thames Water’s attention on this area of concern sufficiently. The Committee recommends that Thames Water should review their existing investment plans to address this concern, rebalancing their priority more towards reducing leakage than towards increasing supply.**



Members of the Committee at Thames Water’s Abbey Mills Pumping Station

<sup>30</sup> Minutes of Evidence, 17 June 2003, p.40

<sup>31</sup> Memorandum – Thames Water

<sup>32</sup> Thames Water, Water, Protecting everyone’s liquid assets

## 4. Sewerage system

- 4.1 Although we have mainly concentrated on London's water supply, this is intrinsically linked with the sewer system. The water supply is a cycle, where once the water has been used it is sent into the sewer. London's sewers were designed and built by Bazalgette in the mid-nineteenth century. They run the length and breadth of London and often span great areas deep underground. They are still being used today and many of them have an operational life expectancy of up to five hundred years. This was an amazing achievement of Victorian engineering. However, London's population has grown progressively, with greater demands being placed on London's ageing sewer system. Furthermore, London's green spaces have shrunk as more buildings have been constructed. This has put greater pressure on the sewers as grass, trees and fields absorb excess rainwater. There is a need to expand London's sewer system to cope with the growth of the metropolis.
- 4.2 London's sewer system is based on a twin design carrying both foul sewage and excess rainfall. This twin system is called a Combined Sewer Overflow (CSO). The CSO design enabled Victorian London to get rid of foul sewage and excess rainfall into the Thames at the same time. The Environment Agency told us that as London has a combined sewer overflow (CSO), combining both foul sewage and rainwater, there are weekly CSO discharges into the river when there is moderate rainfall. This is to prevent sewer flooding. The CSO discharge is not screened or treated and does cause a problem with water quality.<sup>33</sup> The London Assembly's Environment Committee is looking into sewer discharges into the Thames and a previous London Assembly Scrutiny Report looked at flooding in London.<sup>34</sup> This design is not ideal for modern London with its much larger population, greater modern demands (e.g. dishwashers and power showers), and the increase in frequency of high intensity rainfall.
- 4.3 When there is a storm with a high level of rainfall in a short period of time, London's sewers are unable to cope with the large amount of rainwater entering the system. The rainwater mixes with foul sewage and, where the CSO cannot discharge the excess mixed water into the Thames fast enough, localised flooding occurs.
- 4.4 Thames Water pointed out that typically, sewers are designed on what are called 'storm return periods' to accommodate a certain level of rainfall and it typically varies between one in ten year severity of storm and one in thirty year severity of storm.<sup>35</sup> With the recent changes in the weather patterns, if a one in thirty year severity of storm occurs more often, the sewer system will not be adequate and there will be a risk of sewer flooding more often.
- 4.5 According to Ofwat's evidence, sewer flooding is still a problem for Thames Water, with Ofwat allowing funding for 1,500 sewer flooding problems at the last review for the current 2000-2005 period plus additional funding for a further 500 problems.<sup>36</sup> It has been estimated that possibly as many as one in

---

<sup>33</sup> Minutes of Evidence, 17 June 2003, p.7

<sup>34</sup> London Assembly, Flooding in London, November 2002, p.27

<sup>35</sup> Minutes of Evidence, 17 June 2003, p.6

<sup>36</sup> Memorandum - Ofwat, p.4



four sewers is leaking severely or on the verge of collapse because many of the sewers were constructed from brick in the 1840s in such a way that when the mortar collapses, the sewer collapses, a situation which would adversely affect all the other utility pipes above.<sup>37</sup>

- 4.6 Obviously a completely new design of separate sewage and rainwater sewers to replace the CSO concept would be prohibitively expensive and almost impossible to implement due to the amount of tunnelling work required to achieve this together with the subsequent disruption to London life. Something though has to be done quickly to safeguard London's sewer system and cope with the current demands placed upon it and the future growth of the city that is predicted to grow by 700,000 people by 2016 – equivalent to a city the size of Leeds.<sup>38</sup>
- 4.7 The Environment Agency has looked at different strategies to separate the current combined system. The Environment Agency told us that they have looked at intercepting flows higher up the system to try to keep the rainfall out of the system, but "the only strategy that makes sense is to put some form of interception down near the river to take the discharges from these combined sewer overflows".<sup>39</sup>
- 4.8 Thames Water told us that they have installed and are installing fine screens on the storm outflows from Abbey Mills Pumping Station. The first of these screens is now commissioned.<sup>40</sup> As part of the scrutiny, Members of the Committee visited the Station and saw the new screen in place. Thames Water has also told us about a new state-of-the-art £80 million sewage treatment works they are building in Reading as the latest stage in improving their sewage treatment and regulation process.
- 4.9 Thames Water, in conjunction with the Environment Agency, Ofwat and the Greater London Authority, are looking into the future of London's sewer system, through a partnership study called the Thames Tideway Strategic Study (TTSS). The TTSS has conducted research into the various options for improving the CSO we have inherited and adapting it to cope with the greater demands of a growing modern city.
- 4.10 The TTSS created a Solutions Working Group to investigate during 2002 the possibilities available for developing the sewer system. Their investigations looked at a range of factors including flow monitoring, tunnel design and construction, the study of methods of treating storm sewage and a technical study of the rock strata beneath the Tideway area.
- 4.11 They have come up with eight different options, costing from over £1 billion to over £3 billion pounds. They vary from building a storage tunnel that intercepts CSO flows to be pumped out at a controlled rate for treatment, to a displacement option based on a conduit left open to discharge the water to a large wetlands area or a series of storage shafts built at most of the sixty-three CSO locations that incorporate static self-cleaning screens to filter the water.

---

<sup>37</sup> Mark Benham, The Evening Standard, Friday October 6<sup>th</sup> 2000, p.27

<sup>38</sup> Thames Water, Water, Protecting everyone's liquid assets

<sup>39</sup> Minutes of Evidence, 17 June 2003, p.7

<sup>40</sup> Minutes of Evidence, 17 June 2003, p.8

These various options will all take years to design and build, the estimated timescales are up to five years to design and a further five years to build, so which ever one is selected there are no quick short-term answers to the decaying sewer problem. The cost implications are enormous and what London needs is the guarantee that the best long-term solution will be chosen and implemented, not the cheapest option.

- 4.12 The pressure of shareholders is a factor that Thames Water will also have to consider, but when the stakes are so high, the future of London must come first, and we expect that the Environment Agency, Ofwat and the Greater London Authority will make sure that London's needs are given priority.
- 4.13 In the meantime, we support the work that has been done by our colleagues on the London Assembly's Environment Committee and others on the London Parks & Green Spaces Forum to promote the use and care of green spaces in London. It is vital to maintain and improve London's green spaces, because not only do they provide recreational facilities for Londoners, but they also provide useful absorption qualities in aiding the drainage of excess rainwater, and so help ease the pressure on the sewer system.

*Recommendation 4*

**The Committee recommends that Thames Water, the Environment Agency, Ofwat and the GLA work together to ensure that the best and most cost effective method of ensuring the secure future for London's sewage system is achieved.**



Members of the Committee preparing to descend into the sewer



Thames Water staff guiding Members of the Committee through the sewer

## **Annex A: Summary of Recommendations**

### **Recommendation 1**

The Committee recommends that Thames Water, in partnership with Ofwat and the Environment Agency, consult with landlords of tower blocks in London suffering from low water pressures, to evaluate the scale of the problem, and develop and implement a plan to make sure the effects on businesses and residents are minimised.

### **Recommendation 2**

The Committee recommends that Thames Water, in consultation with the Environment Agency and Ofwat, promote to the consumer the efficient use of water across London, in conjunction with its leakage reduction programme.

### **Recommendation 3**

The Committee recommends that Ofwat set more stringent targets on Thames Water for addressing the ongoing and increasing water leakage from its pipes. We believe Ofwat is not serving the long-term interests of Londoners well enough by failing to focus Thames Water's attention on this area of concern sufficiently. The Committee recommends that Thames Water should review their existing investment plans to address this concern, rebalancing their priority more towards reducing leakage than towards increasing supply.

### **Recommendation 4**

The Committee recommends that Thames Water, the Environment Agency, Ofwat and the GLA work together to ensure that the best and most cost effective method of ensuring the secure future for London's sewage system is achieved.

## **Annex B: Evidentiary Hearing and Written Evidence**

The following expert witnesses appeared before the Committee and submitted written evidence:

Martin Townshend, Strategic Environmental Planning Manager, Environment Agency

Jon Goddard, Technical Manager, Environment Agency

Stuart Homann, Water Resources Manager, Environment Agency

Bill Emery, Director of Costs & Performance Division, Chief Engineer, Office of Water Services (Ofwat)

Ingrid Olsen, Parliamentary & Publications Manager, Ofwat

Mike Tempest, Engineering Director, Thames Water

Tony Denton, Local Government & Community Affairs Manager, Thames Water

Andrew Milne, Regional Manager, Water Voice Thames

## Annex C: Orders and Translations

For further information on this report or to order a bound copy, please contact:

Kan Grover  
Scrutiny & Investigation Manager  
Greater London Authority  
City Hall,  
The Queen's Walk,  
London  
SE1 2AA  
Tel 020 7983 6540  
[kan.grover@london.gov.uk](mailto:kan.grover@london.gov.uk)

You can also view a copy of the Report on the GLA website:

[www.london.gov.uk/assembly/reports/index.htm](http://www.london.gov.uk/assembly/reports/index.htm)

If you, or someone you know, needs a copy of this report in large print or Braille, or a copy of the summary and main findings in another language, then please call us on 020 7983 4100 or email [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk)

আসক্তাংক বা আসক্তাংক কামিউনিকেশন কেণ্টাৰ এ প্ৰক্ৰিয়াৰে অৱশ্যে এ প্ৰক্ৰিয়াৰে কামিউনিকেশন কেণ্টাৰ বা প্ৰেচিন্ট, অথবা  
আসক্তাংক নিউজ কামিউনিকেশন কেণ্টাৰ ০২০ ৭৯৮৩ ৪১০০ এ নাম্বাৰে ফোন কৰা বা ই মেইল কৰা এ সিদ্ধান্ত;  
[assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk)

আসক্তাংক বা আসক্তাংক কামিউনিকেশন কেণ্টাৰ এ প্ৰক্ৰিয়াৰে অৱশ্যে এ প্ৰক্ৰিয়াৰে কামিউনিকেশন কেণ্টাৰ বা প্ৰেচিন্ট, অথবা  
আসক্তাংক নিউজ কামিউনিকেশন কেণ্টাৰ ০২০ ৭৯৮৩ ৪১০০ এ নাম্বাৰে ফোন কৰা বা ই মেইল কৰা এ সিদ্ধান্ত;  
[assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk)

Se você, ou alguém de seu conhecimento, gostaria de ler uma cópia do sumário executivo e recomendações desse relatório em imprensa grande ou Braille, ou na sua língua, sem custo, favor nos contatar por telefone no número 020 7983 4100 ou email em [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk)

Se usted o alguien de su conocimiento quiere recibir copia del resumen ejecutivo y las recomendaciones relativas a este informe en forma de Braille, en su propia idioma, y gratis, no duden en ponerse en contacto con nosotros marcando 020 7983 4100 o por correo electrónico: [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk) o por correo electrónico:

Si usted o algún conocido, quiere recibir copia del resumen ejecutivo y las recomendaciones relativas a este informe en forma de Braille, en su propia idioma, y gratis, no duden en ponerse en contacto con nosotros marcando 020 7983 4100 o por correo electrónico: [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk)

اگر آپ یا آپ کا کوئی جاننے والا اس ایگزیکٹو سمیری اور اس رپورٹ میں سے-خبرشات کی ایک کاپی بڑے پیمانے پر  
میں یا بریل پڑھنا چاہتی رہاں میں برا معذرت سے عمل کرنا چاہیں تو براہ کرم ہمارے فون 020 7983 4100 پر  
راہنہ کریں یا [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk) پر ای میل کریں۔

Ta ba ri enikeni ti o ba ni ife lati ni eda ewe nla si igbimo awon asoju tabi papa  
julo ni ede ti abinibi wor, ki o kansuwa lori ero ibanisoro. Nomba wa ni 020  
7983 4100 tabi ki e kan si wa lori ero [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk).  
Ako ni gbawa lowo yin fun eto yi.

Haddii adiga ama qofaad taqanid, oo duunaayo ruu ku helo koobi aa warbixinta  
on kuohar iyo talowinka. Si waaweyn ama farta qofka mifadaha la' hoga talapalka,  
ama luuqadaada, oo helash u ah, dadlan ragala soo xiriir telefoonkan 020 7983 4100  
ama email-ka cimwaanku yahay [assembly.translations@london.gov.uk](mailto:assembly.translations@london.gov.uk).

## **Annex D: Principles of Assembly Scrutiny**

The powers of the London Assembly include power to investigate and report on decisions and actions of the Mayor, or on matters relating to the principal purposes of the Greater London Authority, and on any other matters which the Assembly considers to be of importance to Londoners. In the conduct of scrutiny and investigation the Assembly abides by a number of principles.

Scrutinies:

- aim to recommend action to achieve improvements;
- are conducted with objectivity and independence;
- examine all aspects of the Mayor's strategies;
- consult widely, having regard to issues of timeliness and cost;
- are conducted in a constructive and positive manner; and
- are conducted with an awareness of the need to spend taxpayers money wisely and well.

More information about the scrutiny work of the London Assembly, including published reports, details of committee meetings and contact information, can be found on the GLA website at [www.london.gov.uk/assembly](http://www.london.gov.uk/assembly)





**Greater London Authority**

City Hall

The Queen's Walk

London SE1 2AA

**[www.london.gov.uk](http://www.london.gov.uk)**

Enquiries **020 7983 4100**

Minicom **020 7983 4458**