



SECURING LONDON'S WATER FUTURE

THE MAYOR'S WATER STRATEGY
OCTOBER 2011

MAYOR OF LONDON

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EXECUTIVE SUMMARY

Chapter 1 – Introduction

We can no longer afford to take our water for granted. We have to change the way we perceive, use and reuse our water to ensure that we have enough when we really need it. However, responding to this challenge will mean that we can save money, have an improved water infrastructure over to our children and reduce our impact on the environment.

Most people in London expect to turn on the tap and get water without having to think about where it comes from. Equally, people want to be able to pull out the plug and let water run away without having to worry about what happens to it afterwards. However, changes are going on around us that mean that Londoners will have to pay more attention to where water comes from and goes to.

London is a growing city, reliant on water supplies from outside London to meet its needs and dependent on a water infrastructure that is, for the most part, over 100 years old. The management of water in London is also complex: four water companies provide London with water and only one manages London's sewage. The water companies are overseen by two regulators, which both require management plans, but neither plan has to be consistent with the other. This means the short term plans may not deliver the long term aims of the water companies.

The strategy is intended to complement the plans and strategies of other organisations, including the national water strategy, by presenting a London-specific view of water management. As a world city London needs to ensure that water, as an essential resource for communities and the economy, is managed in the best interests of London despite the growing pressures. That is why the Mayor has decided to produce a Water Strategy for London. It draws

on the other plans and strategies, but also seeks to influence their future development. Its goal is improved water management – both in terms of the water we want (such as drinking water) and the water we don't want (such as sewage and floodwater in the wrong place).

Arrangement of the document

This chapter gives a general explanation of the context within which this strategy is being prepared. The next two chapters are concerned with the supply of water for use in homes and businesses. Chapter 2 explains where our water comes from, and the challenges to balancing supply and demand, now and in the future, whilst chapter 3 focuses on our use of water and how we might use the water that we have more effectively. After that, attention shifts to how to manage the water that we no longer need. Chapter 4 explains how water services are paid for. Chapter 5 is concerned with rainwater and other surface water whilst chapter 6 is concerned with wastewater collection, treatment and disposal. Chapters 3 to 6 begin with a vision for how the issue should be addressed, followed by policies and/or actions on what action the Mayor and partners should take to achieve the vision.

Chapter 2 – Pressure on water resources

We have to recognise that our current demand for water is unsustainable, and that as the number of Londoners increases and summer rainfall decreases, meeting this level of demand in the future whilst safeguarding the environment will create significant challenges.

The majority of London's water supplies come from the River Thames and River Lee, with about 70 per cent of all the water taken from the Thames upstream of Teddington Weir. It is then stored in reservoirs around the capital. The remainder is abstracted from the aquifer underneath London.

To meet our demand for water, some water companies are currently abstracting more water from the environment than it can sustain. In a dry year, our demands exceed what the environment can supply and we are reliant on reservoirs to meet our needs. However, during a hard drought, these may not be sufficient, so London now has a desalination plant as an emergency measure.

Londoners use more water than the national average (167 litres per person per day in 2009–10 compared to 146 litres per person per day), largely because we live in small households, which are less water efficient. Many Londoners have little incentive to save water – only one in four homes has a water meter. We also lose enough water in leakage from our water mains network to fill more than 238 Olympic-sized swimming pools every day.

London's demand for water will increase in the future as London's population grows and the trend of people living in smaller households continues. Furthermore, higher seasonal rainfall and hotter summers will mean that the availability of water will decrease when we need it most. There are also questions about whether we will be able to capture and store the additional water that wetter winters will bring. This means London's already tenuous supply-demand balance will become increasingly unsustainable – we therefore need to act to balance supply and demand.

Water companies are required to produce Water Resource Management Plans (WRMPs), which set out how water companies will balance their supply of water with customer demands over a 25-year period. These plans are revised every five years. In parallel water companies are required to produce business plans that set out how they will fund the first five years of their WRMP. Currently there is no requirement for the

WRMP and the business plan to be consistent in enabling the same long term goals, despite the intention for WRMPs to drive the business plan. This means that there is no guarantee that the short-term plans will set the direction for the long-term aims of the WRMP, and the long-term needs of Londoners. The complexity of the water planning system including the highly technical modelling that feeds the figures in the plans, make it very difficult for non-technical stakeholders to have an input.

The implementation of the Water Framework Directive is expected to lead to the Environment Agency substantially reducing the amount of water that water companies can abstract from rivers in the South East. It is anticipated that these could have a profound impact on the balancing supply and demand in the future. The next round of WRMPs will have to take account of these reductions to supply.

Chapter 3 – Managing water use

Vision : The Mayor believes that Londoners should have a secure supply of water that is affordable, safeguards the environment, and a water infrastructure fit for a world-class city.

In order to achieve and sustain this vision, two sets of action are required. Firstly, the water industry needs to work better in the interests of its stakeholders, so that water company short-term business plans enable the long-term aspirations of their resource plans, and customers have greater clarity and say over what investments their bills are paying for.

Action 1

The Mayor will lobby Defra to ensure that there is greater coherency between the planning, funding and delivery of water company business and resource plans.

Action 2

The Mayor will lobby Defra, Environment Agency and Ofwat to develop a simple, transparent mechanism for comparing the costs and benefits of supply and demand measures in water company plans that fully accounts for the short- and long-term social, environmental and economic costs.

Secondly, The Mayor believes that in the face of growing demand and declining supplies, it makes sense to use the water that we have more wisely. The Mayor will work with partners to implement a 'six-point plan' of integrated actions to help Londoners and London's businesses save water and money.

Point 1. Improve the water efficiency of London's existing buildings through retrofitting simple cost-effective measures. This saves Londoners money and offsets the demand for water from new development.

Action 3

The Mayor will work with London's water companies and other partners to further integrate water efficiency into London retrofit programmes.

Point 2. Ensure all new development is super water efficient. This reduces residents' bills (all new development is metered), the need for new water resources and the impact on the environment.

Action 4

The Mayor will lobby government to ensure that improving the water efficiency of homes is promoted and supported in the Water White Paper and the Green Deal.

Action 5

The Mayor will work with London's water companies and developers to monitor the

water usage in new homes to see if the actual water efficiency matches the predicted water efficiency.

Action 6

In the next review of the London Plan, the Mayor will draft a new policy requiring all new workplaces to achieve an improved water efficiency standard such as AECB's 'best practice' levels or WRAP's 'highly efficient practice'¹.

Point 3. Raise Londoners' awareness of the financial benefits of increased water efficiency – many Londoners would be able to save money by being more water efficient and even having a water meter.

Action 7

The Mayor will lobby government and Ofwat to improve water company customer engagement, for example, through providing more informative water bills.

Action 8

The Mayor will work with London's water companies to raise awareness of Watersure, optant metering and assessed charges through Citizens Advice Bureaux, Voluntary Action Centres, doctors' surgeries and social housing providers.

Point 4. Increase the number of homes that have a water meter. Paying for the volume of water consumed is the fairest way to pay for water, yet less than a quarter of London's 3.2 million homes have a meter. Having a meter helps consumers be aware of how much they are using and provides information to help control their bills.

Action 9

The Mayor will work with London's water companies, Environment Agency and Ofwat to

support the already planned introduction of water metering throughout London, with the aim of metering all houses and blocks of flats by 2020 and all individual flats by 2025.

Action 10

The Mayor will lobby government to investigate the opportunities and benefits of combining the 'smart' energy metering programme with enhanced water metering.

Point 5. Change the way Londoners pay for their water. The current system does not encourage or reward water efficiency, nor sufficiently protect those who cannot afford to pay.

Action 11

The Mayor will lobby government and Ofwat to enable tariffs that incentivise and reward water efficiency, whilst protecting vulnerable customers.

Point 6. Continue to tackle leakage. A quarter of our water is lost in leakage – this is water we pay for but never receive. A one per cent drop in leakage would provide enough water for 47,120 people.

Action 12

The Mayor will encourage Ofwat to develop the evidence base for Sustainable Economic Level of Leakage and benchmark performance on managing leakage, including the costs and benefits of fixing leaks that takes account of costs for London.

Action 13

The Mayor will lobby Ofwat to review the deadline for leakage reporting.

The Mayor is also keen for Londoners to save money and reduce their carbon footprint by reducing their bottled water consumption (tap water is 500 times cheaper than bottled water).

Action 14

The Mayor will encourage water companies and other partners to promote London's drinking water. This will include facilitating ways of working with London boroughs, our stakeholders and private sector organisations on potential funding models, or schemes, that provide efficient easily accessible and free drinking water to Londoners on the move, at no cost to the tax payer.

Action 15

The Mayor of London will lead by example by completing the Water Disclosure Project Questionnaire for the Greater London Authority to examine global water dependencies. The Mayor will integrate risks associated with global water use into the Mayor's Green Procurement Code to encourage companies to consider their water risks.

Chapter 4 – Paying for water services

Vision. The Mayor's vision is that we will help Londoners increase their water efficiency and save money by having a charging system that is fair to all, incentivises and rewards water efficiency, protects the vulnerable in society.

As discussed in chapters 2 and 3, demand for water is increasing in London and there is the need to move to higher levels of water metering to manage it. Universal water metering is the fairest way to pay for water usage.

Despite living in a seriously water stressed part of the UK, Londoners pay less for their water services than many other areas of the UK. Because the majority of people pay a fixed charge for their water and sewerage services, many Londoners have little understanding of how their bills will be affected by being metered. Water meters on their own do not

necessarily reduce and maintain a lower level of water consumption. Meters combined with tariffs that incentivise and reward water efficiency can reduce water consumption by a further five per cent.

Some unmetered households that use a lot of water have effectively been ‘protected’ from paying for the amount of water they use and if metered are likely to pay more for their water services. Some of these households are already paying more than three per cent of their income for water services and may be considered to have water affordability problems. The move to universal metering may drive more households to have water affordability problems.

The Mayor supports the introduction of universal metering in London but notes that tariffs alone will not provide a ‘magic bullet’ to alleviating water affordability problems, or offset the impact of universal metering. The Mayor believes that an integrated approach is required that combines universal metering, tariffs, smarter billing, retrofitting and a social protection system to reduce wastage, achieve water neutrality and support London’s neediest families. The Mayor will work with the water industry to achieve this.

Action 16

The Mayor will lobby Defra to amend the working definition of water affordability to include disposable income after living costs, and for London to have its own water affordability assessment

Action 17

The Mayor will, through the London Water Group, work with the water companies to manage water affordability in London by:

- a determining whether a current definition of water affordability is applicable to London
- b identifying groups of Londoners that are,

or could become, vulnerable to water affordability issues

- c identifying the needs of these groups
- d examining how the existing initiatives including the RE:NEW programme, could be integrated and better targeted to tackle water affordability
- e lobbying government to secure funding for a water affordability pilot in London.

Chapter 5 – Managing rainwater

Vision. The Mayor’s vision is that we adopt a more creative approach to managing flood risk from rainfall in London, taking opportunities to slow the progress of water from ‘rain to drain’ and using rainwater for non-potable uses to reduce demand for treated mains water.

This chapter is concerned with managing rainwater. Rainwater is either lost through evaporation, seeps into the ground to replenish groundwater levels, flows over the ground and returns to streams and rivers, or enters the drainage systems. In outer London, the surface water drains carry rainwater from pavements, road surfaces and rooftops into local rivers and streams. In central and inner London, rainwater is mixed with sewage in the combined sewer and flows to the sewage treatment works.

Rainfall intensity in London appears to be increasing. An analysis of rainfall records from a weather station in east London shows that before 1960, only one day experienced rainfall exceeding 40mm, compared to ten days after this period. A day with 45mm rainfall had a 30 year return period before 1960, and now has less than a one in six year return period of occurrence.

The increase of heavy rainfall days and the increase in hard surfaces from new or re-development means the existing surface water

drains can no longer cope with the rise in runoff. In turn, this can lead to a greater risk of flooding as surface water drains are overwhelmed.

Because so much of London's surface is concrete and tarmac, and therefore impermeable to rainfall, we are very reliant upon our drainage system to keep us dry. However, the responsibility for drainage currently rests with many agencies, including water and sewerage companies, the London boroughs, Transport for London, the Highways Agency and private landowners. This fragmented ownership, together with the realisation that surface water flood risk is probably the greatest short-term climate risk to London, led the Mayor to convene the key stakeholders to work together to understand and manage the risk.

Action 18

The Mayor will work with partners through the Drain London Forum to manage surface water flood risk and ensure a consistent approach across London. This will include:

- a identifying flood risk hotspots and working with partners to determine who is best placed to manage these
- b developing a Community Flood Plan Programme to support communities that wish to increase their resilience to flooding
- c developing at least three demonstration projects to show how urban greening measures can help to manage surface water flood risk.

Chapter 6 – Disposal of wastewater

Vision. The Mayor believes that wastewater should be seen as a resource and not a by-product that is best kept out of mind. Opportunities should be sought to not just reduce the greenhouse gas emissions from wastewater, but to use it as a source of low-carbon energy.

In the mid 1800s, Sir Joseph Bazalgette designed and initiated the building of London's combined sewers. Still in use today, they remove wastewater and rainwater in the same pipe from properties in central and inner London. In order to avoid the flooding of streets and properties with raw sewage during intense rainfall events, Bazalgette designed a series of overflow outlets from the combined sewers into the tidal River Thames and its tidal tributaries (together referred to as the Thames Tideway). There are now 57 such outlets, known as combined sewer overflows (CSOs), which allow diluted storm sewage (excess sewage and rainwater) to spill untreated into the Thames Tideway after intense rainstorms.

Discharges occur at some CSOs between 50 to 60 times each year. Widespread heavy rainfall can lead to over a million tonnes of untreated sewage and rainwater legally discharging directly into the rivers. Despite much improvement in the Thames this is clearly unacceptable in the 21st century and contravenes the Urban Waste Water Directive that requires all wastewater to be treated before it is discharged.

To address these discharges, the government has asked Thames Water to develop a storage and transfer tunnel project, known as the Thames Tideway Tunnels. This involves two tunnels to collect the discharges and take the wastewater for treatment at Beckton STW in east London. Construction of the first tunnel, known as the Lee Tunnel, from Abbey Mills Pumping Station to Beckton STW commenced in 2010 and will be completed in 2014. From November 2011 Thames Water will be undertaking a second phase of consultation on the second tunnel, known as the Thames Tunnel. This is expected to lead to a planning application in 2012 and construction between 2013-2020. The preferred route will involve around 20 construction sites to act as tunnel

boring sites and CSO connection sites. Beckton STW is also being increased in size to deal with the additional treatment demands.

Action 19

The Mayor will work with Thames Water and other partners to support the construction of the Thames and Lee Tunnels, as a means of greatly reducing storm discharges from the combined sewer system and improving the quality of the water in the River Thames. The Mayor will ensure cost effectiveness and reduced disruption at all individual locations by continuing to lobby Thames Water on local issues.

In areas of London served by the separate sewer, if the foul drainage is misconnected into the rainwater drainage, this results in untreated sewage getting into London's rivers and streams. If the rainwater drainage system is misconnected into the foul water system, then this results in a greater volume of dilute effluent being sent unnecessarily to the sewage treatment works. Identifying and treating misconnections is currently a complex and slow process and undermines parallel efforts to improve the quality of London's waterways.

Wastewater can be a source of greenhouse gases, further intensifying climate change, but sewage sludge can also provide an alternative source of energy, reducing our dependence upon fossil fuels.

Action 20

The Mayor will work with Thames Water and other partners to identify ways in which the management of sewage can provide renewable energy and reduce emissions of greenhouse gases.

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Chinese

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Vietnamese

Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Hindi

यदि आप इस दस्तावेज़ की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Urdu

اگر آپ اس دستاویز کی نقل اپنی زبان میں چاہتے ہیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

