

POLICY 5.12 FLOOD RISK MANAGEMENT**Strategic**

- A The Mayor will work with all relevant agencies including the Environment Agency to address current and future flood issues and minimise risks in a sustainable and cost effective way.

Planning decisions

- B Development proposals must comply with the flood risk assessment and management requirements set out in the NPPF and the associated technical Guidance on flood risk¹ over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans.
- C Developments which are required to pass the Exceptions Test set out in the NPPF and the Technical Guidance will need to address flood resilient design and emergency planning by demonstrating that:
 - a the development will remain safe and operational under flood conditions
 - b a strategy of either safe evacuation and/or safely remaining in the building is followed under flood conditions
 - c key services including electricity, water etc will continue to be provided under flood conditions
 - d buildings are designed for quick recovery following a flood.
- D Development adjacent to flood defences will be required to protect the integrity of existing flood defences and wherever possible should aim to be set back from the banks of watercourses and those defences to allow their management, maintenance and upgrading to be undertaken in a sustainable and cost effective way.

LDF preparation

- E In line with the NPPF and the Technical Guidance, boroughs should, when preparing LDFs, utilise Strategic Flood Risk Assessments to identify areas where particular flood risk issues exist and develop actions and policy approaches aimed at reducing these risks, particularly through redevelopment of sites at risk of flooding and identifying specific opportunities for flood risk management measures.

¹ Technical Guidance to the National Planning Policy Framework, Department for Communities and Local Government, March 2012 or any subsequent guidance on flood risk issued in support of the NPPF

- 5.54 Proper consideration of flood risk is vital to ensuring that London is and continues to be a sustainable city. Approximately 15 per cent of London is already within a recognised flood risk zone from either tidal or fluvial flooding. The Regional Flood Risk Appraisal (RFRA) produced alongside this Plan, investigates flood risk in more detail and identifies that London is at risk from tidal, fluvial, surface water, sewer, groundwater (see Glossary) and reservoir flooding as sources of flooding. It includes recommendations that will be reported against in the Annual Monitoring Report.
- 5.55 The Government has endorsed the Environment Agency's Thames Estuary 2100 (TE2100) Plan, which sets out recommendations for tidal flood risk management for London and the Thames Estuary up to 2100. TE2100 recommends continued maintenance, refurbishment and improvements to the current defences, with some raising of river walls. This should continue to provide London with a high standard of protection from tidal floods. TE2100 estimates that the arrangements for major changes to London's flood defences must be in place by 2070. In order to leave room to raise river walls in a sustainable and cost effective way, some land may have to be safeguarded, and development may need to be set back along the Thames through London. If land is not available, the walls will reduce views across the river and they will be much more expensive to build. There also remains a level of risk, equivalent to 0.1 per cent chance per year – a low risk but not one that could never happen. This means it is still vital at the planning and design stage to consider what would happen to buildings if such a flood were to occur.
- 5.56 Fluvial flood risk is likely to increase significantly through the century, as a result of climate change. Predictions of increases in peak flows of up to 40 per cent would mean that we would have to expect increased flood risk on all of London's tributary rivers. The Environment Agency has produced Catchment Flood Management Plans that examine the nature of flood risk and the approaches available to manage it. These reinforce the need to follow the approach of steering development to places with lower flooding risk and that new development and redevelopment can often provide a means of reducing flood risk for example by providing flood storage/conveyance or setting development back from rivers.

POLICY 5.13 SUSTAINABLE DRAINAGE

Planning decisions

- A Development should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:
- 1 store rainwater for later use
 - 2 use infiltration techniques, such as porous surfaces in non-clay areas
 - 3 attenuate rainwater in ponds or open water features for gradual

release

- 4 attenuate rainwater by storing in tanks or sealed water features for gradual release
- 5 discharge rainwater direct to a watercourse
- 6 discharge rainwater to a surface water sewer/drain
- 7 discharge rainwater to the combined sewer.

Drainage should be designed and implemented in ways that deliver other policy objectives of this Plan, including water use efficiency and quality, biodiversity, amenity and recreation.

LDF preparation

- B Within LDFs boroughs should, in line with the Flood and Water Management Act 2010, utilise Surface Water Management Plans to identify areas where there are particular surface water management issues and develop actions and policy approaches aimed at reducing these risks.

- 5.57 There will also be increased surface water flood risk, with the likelihood of more intense storms. The Flood and Water Management Act 2010 gives London boroughs clearer responsibilities related to surface water flood risk. Implementation mechanisms including the national Sustainable Drainage Systems Standards are emerging. Moreover, the Drain London Forum brings together the key agencies involved in managing London's drainage system and has delivered draft Surface Water Management Plans for every London borough. As the RFRA illustrates, it has also made significant progress in the understanding of surface water flood risk. In the meantime, the now well established sustainable drainage hierarchy contained within Policy 5.13 will lead to a steady reduction in the overall amount of rainfall being discharged to the drainage system. The sustainable drainage hierarchy in policy 5.13A is intended to ensure that all practical and reasonable measures are taken to manage surface water higher up the hierarchy (1 being the highest) and that the amount of surface water managed at the bottom of the hierarchy, is minimised. The hierarchy is designed to apply across the whole of London. In addition, green roofs (see Policy 5.11) can also make a contribution to sustainable urban drainage by absorbing a proportion of surface water and therefore reducing rates of water flow. Implementing such measures will not only reduce run-off but provide multiple benefits to London amenity, biodiversity and better water quality to name but three. Changes to the General Permitted Development Order 2008 restricting permitted development rights for impermeable surfaces within the curtilage of dwelling houses should also contribute to a reduction of surface water run-off.

POLICY 5.14 WATER QUALITY AND WASTEWATER INFRASTRUCTURE**Strategic**

- A The Mayor will work in partnership with the boroughs, appropriate agencies within London and adjoining local planning authorities to:
- a ensure that London has adequate and appropriate wastewater infrastructure to meet the requirements placed upon it by population growth and climate change
 - b protect and improve water quality having regard to the Thames River Basin Management Plan.

Planning decisions

- B Development proposals must ensure that adequate wastewater infrastructure capacity is available in tandem with development. Proposals that would benefit water quality, the delivery of the policies in this Plan and of the Thames River Basin Management Plan should be supported while those with adverse impacts should be refused.
- C Development proposals to upgrade London's sewage (including sludge) treatment capacity should be supported provided they utilise best available techniques and energy capture.
- D The development of the Thames Tideway Sewer Tunnels to address London's combined sewer overflows should be supported in principle.

LDF preparation

- E Within LDFs boroughs should identify wastewater infrastructure requirements and relevant boroughs should in principle support the Thames Tideway Sewer Tunnels.

- 5.58 Most of London's waterbodies fail to achieve 'good' ecological status/ potential as set out in the Thames River Basin Management Plan. This sets out the requirements of the Water Framework Directive. Sources of pollution include misconnections of sewerage to surface water drains, contaminated run-off and storm sewerage. Spatial planning measures helping to improve London's waterbodies are reflected throughout this Plan (see in particular policies 2.18, 5.10, 5.13, 5.14, 5.15, 7.18 and 7.24). Effective wastewater infrastructure is fundamental to sustainable urban life and therefore investment and expansion are required. Currently, Thames Water is implementing plans for additional sewage treatment capacity at several major works, including additional capacity for the treatment of, and energy recovery from, sewage sludge. While the impacts of these works need to be minimised and mitigated, it is nevertheless essential that a positive planning approach is in place to support this investment.
- 5.59 In 2007, the Government approved construction of the Thames Tideway Sewer Tunnels in two phases (Lee Valley to Beckton and west London to Beckton). For the
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latter, Government notes that 'need has been demonstrated'¹⁸¹, and Thames Water was granted a Development Consent by the Secretary of State for the Thames Tideway Tunnel in September 2014. This will address the long term problem of combined sewer overflows, which has resulted in the discharge of millions of tonnes of untreated sewage into the Thames each year. This is a strategic project for London. Opportunities to reduce the construction and operational impacts, the overall energy demand and the costs of the project should be taken. In addition, there are continuing programmes to deal with problems of sewer flooding in some areas of London; these need to be completed and where required, the lack of sewer capacity addressed.

POLICY 5.15 WATER USE AND SUPPLIES

Strategic

- A The Mayor will work in partnership with appropriate agencies within London and adjoining regional and local planning authorities to protect and conserve water supplies and resources in order to secure London's needs in a sustainable manner by:
 - a minimising use of mains water
 - b reaching cost-effective minimum leakage levels
 - c in conjunction with demand side measures, promoting the provision of additional sustainable water resources in a timely and efficient manner, reducing the water supply deficit and achieving security of supply in London
 - d minimising the amount of energy consumed in water supply
 - e promoting the use of rainwater harvesting and using dual potable and grey water recycling systems, where they are energy and cost-effective
 - f maintaining and upgrading water supply infrastructure
 - g ensuring the water supplied will not give rise to likely significant adverse effects to the environment particularly designated sites of European importance for nature conservation.

Planning decisions

- B Development should minimise the use of mains water by:
 - a incorporating water saving measures and equipment
 - b designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day¹
- C New development for sustainable water supply infrastructure, which has

¹ Excluding an allowance of 5 litres or less per head per day for external water consumption

been selected within water companies' Water Resource Management Plans, will be supported

- 5.60 Water supplies are essential to any sustainable city and to the health and welfare of its people. London's consumption of water already outstrips available supplies in dry years and ensuring a sustainable and secure water supply has to be an urgent priority. Some steps have already been taken. Investment in recent years to reduce leakage from Victorian mains supply pipes has had an effect (although Thames Water still has a significantly higher leakage rate than the rest of the country). An additional source of supply, the desalination plant at Beckton, has been operational since 2010. These two measures have eased the pressure on water resources in London.
- 5.61 But the fundamental problem remains. To remain sustainable, London needs to reduce the level of water consumption per person. Currently the average Londoner consumes 164 litres/day (l/d)¹⁸², around 20 l/d above the national average. Projections for population growth in London and in the wider south east will mean that over the period of this Plan, new strategic water resources will be required. The need for this is exacerbated by the climate change predictions of more sporadic and intense rainfall and a higher likelihood of droughts as well as the need to protect the water environment implementing the Thames River Basin Management Plan requirements. Thames Water, which provides over three-quarters of Londoners with water, projects a significant (around 6 % by 2020) capacity deficit. To ensure London's future water security, the prudent use of water will be essential: all new development will need to be water efficient. Residential development should be designed so that mains water consumption would meet a target of 105 litres or less per head per day, excluding an allowance of 5 litres or less per head per day for external water use. This reflects the 'optional requirement' set out in Part G of the Building Regulations¹⁸³. As all water companies that serve London are located in areas classified as seriously water stressed¹⁸⁴, the 'optional requirement' should be applied across London. A fittings-based approach should be used to determine the water consumption of a development¹⁸⁵. This approach is transparent and compatible with developers' procurement and the emerging Water Label, which Government and the water companies serving London are supporting.
- 5.61A Existing homes and workplaces will have to become more water efficient, particularly through metering and water efficiency retrofits. Retrofitting water

182 Environment Agency. State of the Environment Report, February 2013

183 Requirement G2 of Schedule 1 to the Building Regulations 2010. HM Government 2015.

184 Serious water stress is defined as where current or future household demand for water is – or is likely to be – a high proportion of the effective rainfall to meet that demand. – Environment Agency, Water stressed areas – final classification, July 2013.

185 Table 2.2 of Part G of the Building Regulations provides maximum consumption values for water fittings. If these consumption values are exceeded and where waste disposal units, water softeners or water re-use are specified in the application, the Water Efficiency Calculator must be completed.
