

## Summary

# The London Surface Water Strategy

Creating a Flood Ready London

# Increasing resilience through collective action

**The London Surface Water Strategy is an ambitious vision of how London can address the real and growing risk of surface water flooding, which is caused by heavy or prolonged rain falling on hard surfaces overwhelming drainage and sewers. This type of flooding has significant impacts on our communities, the environment and the economy.**

It builds on the work done to date in the context of the city's unique challenges – and its unique opportunities. It sets out a series of actions and recommendations that the Flood Ready London partnership will progress to deliver transformational change for the benefit of current and future generations.

## Understanding the problem

The city is already experiencing the impacts of a changing climate, with severe weather events such as surface water flooding and extreme heat becoming more frequent. Extensive flooding in July 2021 resulted in damage and disruption across the Underground, schools and hospitals and to people's homes and businesses, causing an estimated insurance loss of at least £281 million.

London has a growing, changing population, predicted to reach 9.6 million by 2035. It also has a highly urbanised landscape with complex and ageing infrastructure systems, fragmented policy and governance, and limited funding, investment and skills availability.

The development of the Strategy follows the publication of other recent reports, including the [London Climate Resilience Review](#), which warned that London is underprepared for the impacts of climate change. Alongside this, the Environment Agency's latest [National Flood Risk Assessment](#) data highlights that almost 320,000 properties in London are at high risk of surface water flooding.



## Why do we need this Strategy?

As a city, we all need to do everything we can to prevent the high levels of disruption and loss seen in 2021 from happening again. We need to capture as much rainfall as possible where and when it falls, control how surface water flows during heavier storms, and adapt and respond so that when extreme rainfall does hit the city, London is resilient enough to handle it without major disruption.





# One ambitious collective Vision

“Increasing London’s resilience to surface water flooding through collective action that benefits people, places and the environment.”

This Strategy sets out our collective approach to delivering this Vision by aligning our efforts and bringing together stakeholders around common goals. Following the 2021 flooding, we agreed that our focus must be on increasing resilience and adaptation, reducing flood risk to minimise its impact when it does occur, and making recovery quicker and easier.

To tackle this challenge, the Environment Agency, Mayor of London, London Councils, London Fire Brigade (LFB), Thames Water and Transport for London (TfL), as the six main organisations who manage or respond to flooding in London, or represent those who do, formed the Flood Ready London partnership in 2022, with support from the Thames Regional Flood and Coastal Committee. Together we have developed this Strategy through a series of consultations with London boroughs, environment and development managers, the public and many others associated with surface water management.

The London Surface Water Strategy defines how we can work together across London to plan and deliver solutions that reduce surface water flood risk, while empowering positive action by, and creating benefits for, everyone who lives in, works in, and visits our city. Implementing the Strategy will mobilise the step change our city needs to become more prepared, sustainable, and safe, especially for the most vulnerable.



# Six guiding principles

**Six guiding principles help shape our decision making as we deliver the London Surface Water Strategy and the new ways of working it requires:**



**1.** Prioritise delivering risk-based action for the most vulnerable



**2.** Prioritise nature-based solutions that manage surface water at the source where practical



**3.** Develop evidence-based actions and align their planning of strategic action around hydrological catchments



**4.** Working collaboratively in more effective partnerships to deliver and coordinate integrated solutions



**5.** Enable change through strong leadership to ensure institutions and organisations are equipped to enable and drive the changes we need to better protect London from surface water flooding



**6.** Collaboratively manage surface water flood risk at the most appropriate geographical scale





# Three ambitions

**To achieve our Vision and guided by our principles we have divided our work into three ambitions:**

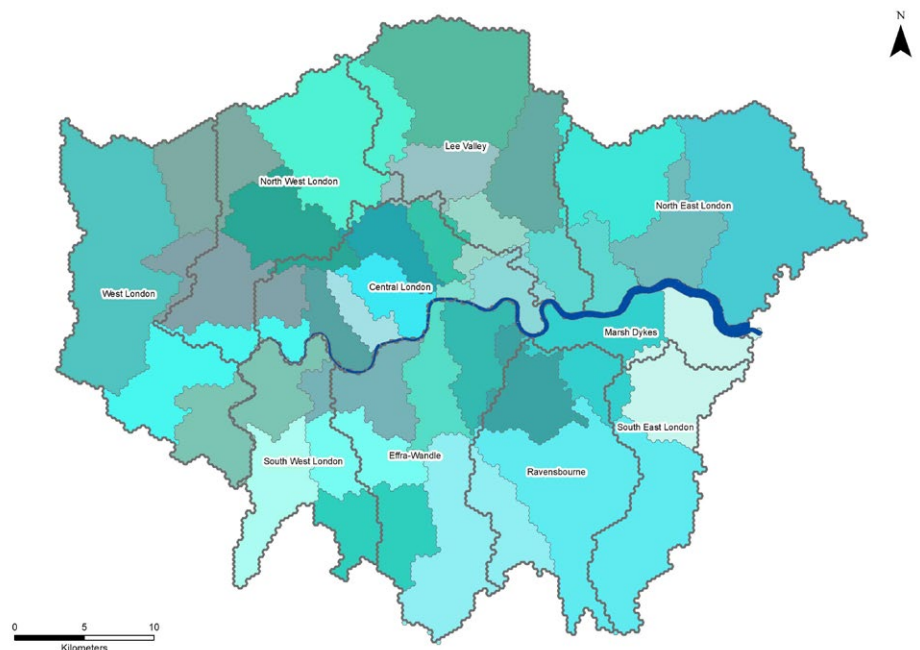
1. Resilient places – our homes, workplaces, and the environments in which we live are better prepared to manage surface water
2. Empowered people – London's residents, communities and businesses actively contribute to increasing surface water flood resilience
3. Coordinated delivery – we will work together to ensure coordinated planning and delivery

To deliver these ambitions we are focusing in the first year on creating ten [Surface Water Catchment Partnerships \(SWCP\)](#) to coordinate and deliver a range of solutions to meet local needs and requirements. Working to increase [funding and investment](#) and streamlining processes will help to speed up delivery. We have developed a rich [resource of data](#) available through the [Appendices](#) and all publicly available data is on the London Datastore. To achieve these ambitions we must work [together to create a Flood Ready London](#).



# Ten Surface Water Catchment Partnerships

To help achieve all three ambitions, ten Surface Water Catchment Partnerships (SWCPs) will be created to coordinate planning and action and support a more holistic approach to managing surface water flood risk across London. These partnerships will work together to plan, develop, and implement solutions. They will build on existing regional flood collaborations by pooling resources, sharing knowledge, and standardising processes to overcome traditional political and organisational barriers.



The makeup of each partnership will vary to suit local needs but should include all London boroughs in the catchment (some of whom will be members of multiple SWCPs) as well as relevant Risk Management Authorities and organisations that operate across London, including Flood Ready London partners.

The involvement of locally specific organisations such as the river catchment partnerships and community groups will be key in empowering people and ensuring the right solutions are taken forward to create resilient places.

Each SWCP will develop a Surface Water Catchment Action Plan that sets out the policies and actions needed to manage surface water flooding in the catchment. In doing so, they will plan, design, and deliver flood reduction measures that are inventive, efficient, and ambitious.

The first two SWCPs, Central London and Lee Valley, are currently in the process of being set-up, with all ten planned to be created by 2027/28 to cover the whole of London (see map above).



# A range of solutions

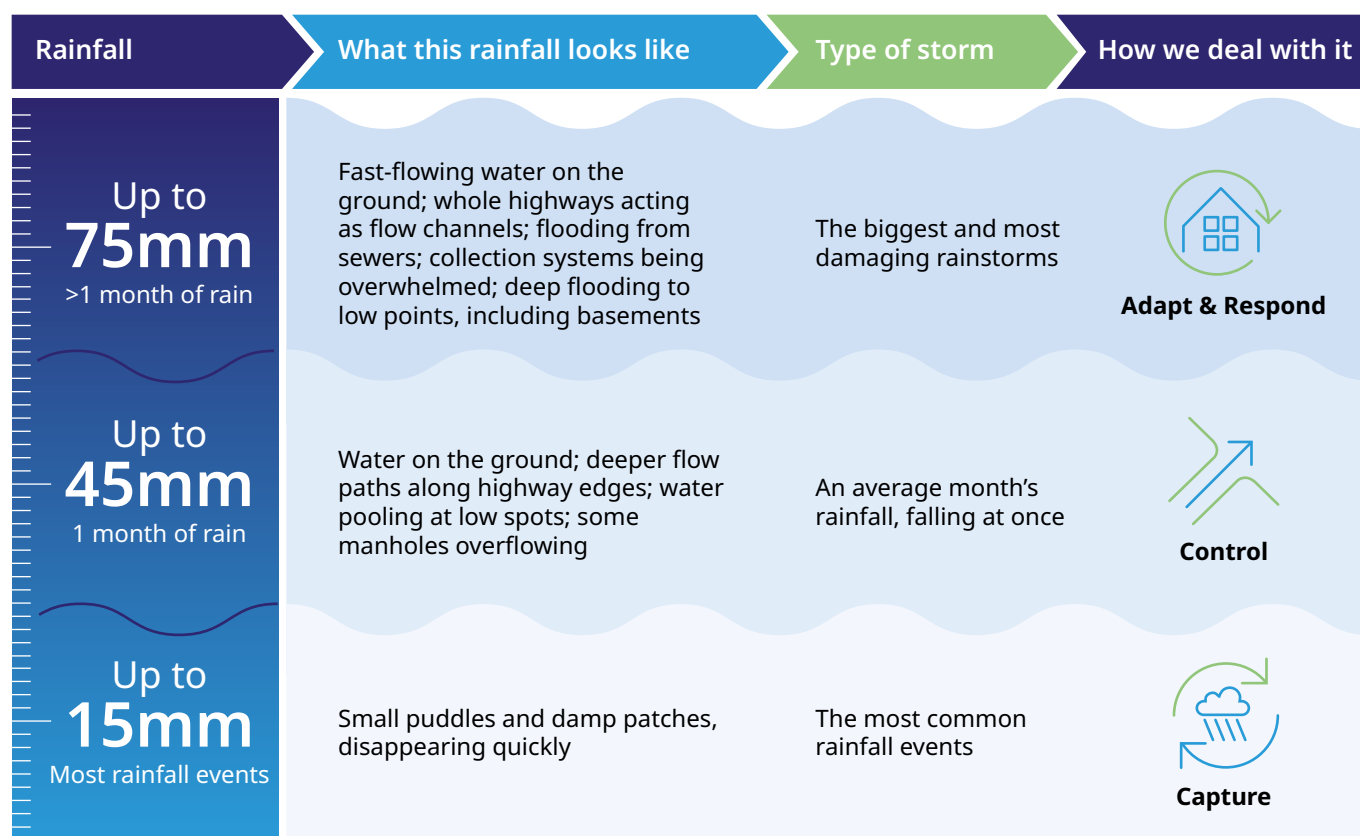
## London needs a holistic mix of solutions at both catchment and borough levels to strategically manage surface water.

This requires understanding how rainfall is absorbed or stored at its source, how it travels along pathways shaped by topography, land use and drainage networks, and how it ultimately impacts receptors. When capacity at the source is exceeded, water follows these pathways and collects at receptors such as homes, schools, businesses, roads and underground stations, where flooding can occur. This is known as the Source-Pathway-Receptor model.

Each SWCP will provide interventions that, when combined, deliver the cumulative benefits needed to manage surface water flooding. The types of interventions we have identified are Capture, Control, and Adapt and Respond.







### Capture: Manage rainfall where it falls (source)

This can be done relatively easily in existing urban areas and is highly sustainable. Capture solutions can reduce the volume of runoff at source, lower flood risk and improve drainage. There are other benefits too such as enhanced community wellbeing and environmental quality.

Examples include green roofs, rain gardens, de-paving, and water butts.

### Control: Divert water from vulnerable areas and minimise flood depth (pathway)

Manage the flow of excess stormwater and reduce the overall volume that needs to be managed, both above and below ground.

Examples include constructing swales, de-culverting (or daylighting) existing culverted watercourses, smart use of the existing sewerage network to maximise capacity, and upgrading drainage infrastructure.

### Adapt and Respond: helping communities cope with and recover from flooding (receptors)

Supporting community- and household-level actions, making resilience a part of everyday life. By preparing local areas for recurring flood risks, these solutions help mitigate the impact of floodwaters and reduce long-term damage.

Examples include property level resilience measures, diverting flood water away from people and property (e.g. increasing road kerb heights), engagement and communication campaigns, and flood action planning (to ensure communities are prepared for flooding).

# Funding and investment

**Flood Ready London is supported by the Thames Regional Flood and Coastal Committee which has already contributed over £1 million across a five-year period. A further £1.5 million has been committed by Flood Ready London partners to deliver schemes in the first two SWCPs.**

We have estimated the current funding available for surface water management in London at around £168 million per annum, possibly more, distributed across a wide range of organisations that manage surface water flood risk. To reduce flood risk across the whole of London by 75% we estimate around £1.8 billion in capital investment is required in surface water flood risk management over the next 50 years. This is approximately an extra £41 million annually, including maintenance costs.

Further funding will continue to be sought to enable delivery of the London Surface Water Strategy and associated schemes.

We are exploring ways to streamline the funding application process, reducing the time and effort involved so that we can make our resources go further. Additionally, we are establishing new markets to attract new investment and delivery partners, helping to speed up the delivery process and increase impact.

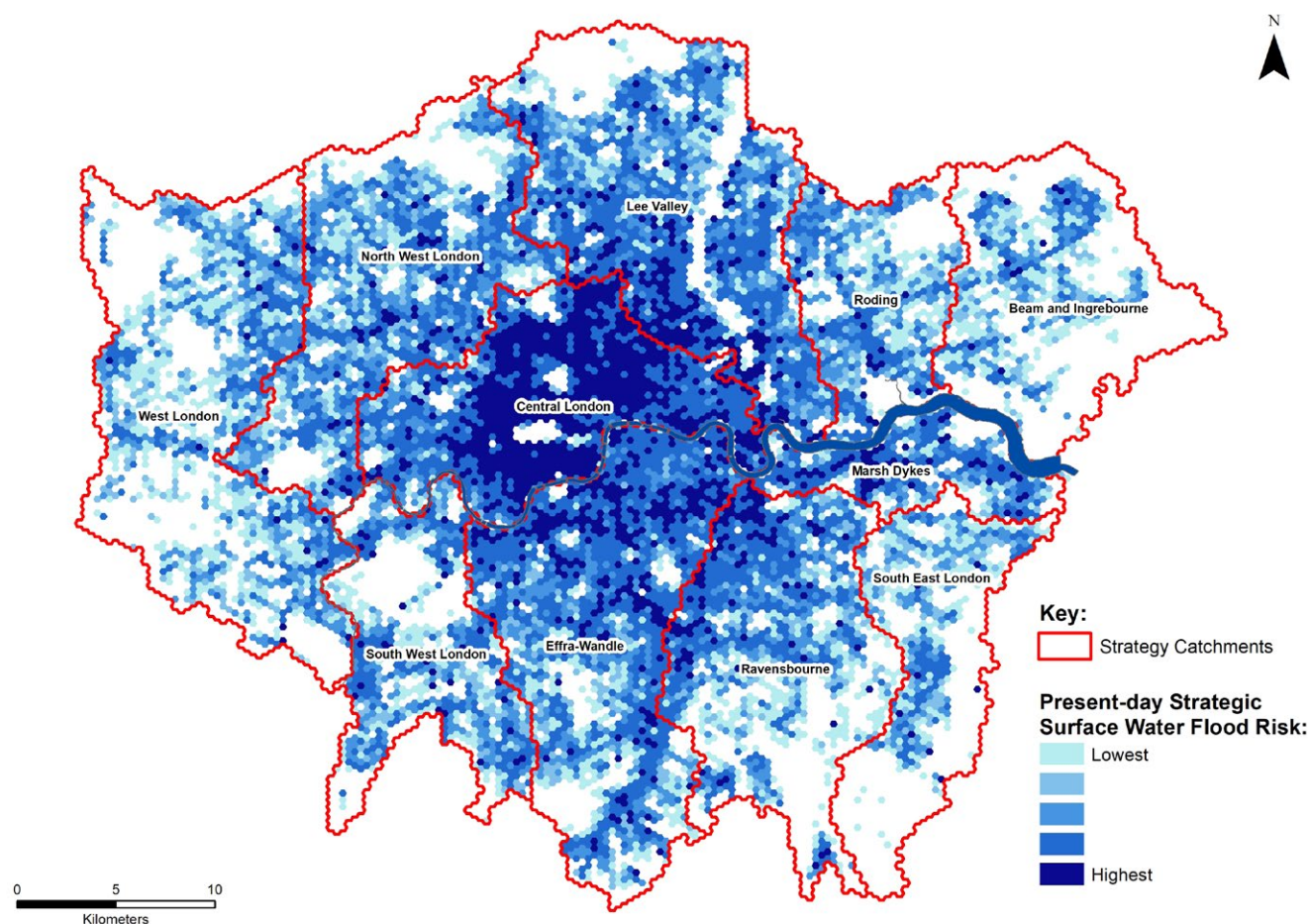




# A rich resource of data

The full [London Surface Water Strategy](#), including its [Year One Action Plan](#), and its supporting [Appendices](#), are available for all to help guide future decisions, as well as be used as evidence to help shape policies, planning and projects.

The 11 Appendices include the hydrological and geographic data that the Strategy is based on, detailing information about London's drainage systems, flood models, and flood impact projections. Publicly available data is held on the [London Datastore](#).



# Together we can create a Flood Ready London

**Whether you are from a Risk Management Authority, you work in the water industry, you are a developer, planner or community leader, or you are someone who is interested in learning more about London's flood risk, there is something here for you.**

This Strategy is a statement of intent and a call to action for all of us. We hope you find it informative, useful and relevant to your work or your community, but above all inspiring – because together we can create a Flood Ready London.

Download the Strategy and Appendices.



## Get involved

To get further information on the London Surface Water Strategy, to find out what is happening in your area or how you can get involved, email [surfacewatergroup@london.gov.uk](mailto:surfacewatergroup@london.gov.uk)





# Partners



The **Environment Agency's** strategic overview role, under the Flood and Water Management Act 2010, ensures a coordinated, consistent approach to managing flood and coastal erosion risks across England. It leads on strategy and integrated approaches while supporting Risk Management Authorities (RMAs) in their responsibilities for surface water and sewer flooding caused by heavy rain. This is outlined in the National Flood and Coastal Erosion Risk Management Strategy for England.



**London Councils** is the collective of London local government, representing the 32 London boroughs and the City of London Corporation. It has been a Flood Ready London partner since its inception, ensuring borough voices have been heard throughout the Strategy development.



**London Fire Brigade** is the UK's busiest fire and rescue service in the country and one of the largest in the world, with the primary aim of keeping London and Londoners safe. The Brigade raises awareness of safety and wellbeing via a range of activities, from water safety and road safety, through to caring for the most vulnerable residents & educating tomorrow's young Londoners.



The **Mayor of London** is responsible for making London a better place for everyone who visits, lives or works in the city. The Mayor provides citywide leadership, setting an overall vision for London and creating plans and policies to achieve it.



**Thames Water** serves 16 million customers across London and the Thames Valley, from that first cup of tea in the morning through to baths at bedtime. As well as supplying water to people's taps, we take wastewater away. We collect and treat sewage, returning clean water to our rivers. We are here to keep taps flowing for generations to come. Delivering life's essential service, so our customers, communities and environment can thrive.



**Transport for London** Part of the Greater London Authority family led by Mayor of London, we are the integrated transport authority responsible for delivering the Mayor's aims for transport. We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners' and helping to create a safer, fairer, greener, healthier and more prosperous city.

## Supported by



The **Thames Regional Flood and Coastal Committee** works to reduce flood risk, increase communities' resilience and adapt to climate change across the Thames catchment. We work in partnership with other organisations, especially in local government, and with local communities. This involves investing significant amounts of public money including the funding for London Surface Water Strategy and, increasingly, securing funds from multiple sources.

