

MAYOR OF LONDON

Call for Evidence on Flooding and Coastal Erosion

Response from the Greater London Authority

This response is on behalf of the Mayor of London. The Greater London Authority (GLA) is the strategic authority for London. The Mayor is required to prepare and publish a London Environment Strategy by the Greater London Authority Act 1999 ('GLA Act' as amended), under changes made by the Localism Act 2011, which includes policies and proposals in relation to climate change adaptation. These require the Mayor to consider the impact of climate change and potential mitigation proposals for adaptation for London.

The Mayor published his London Environment Strategy in May 2018, setting out his vision to make London the greenest global city. This includes objectives to:

- ensure an efficient, secure, resilient and affordable water supply for London and Londoners;
- encourage and support infrastructure providers and businesses to understand and manage climate change risks and impacts to deliver resilient growth and services; and
- reduce the risk of flooding through appropriate flood defences and increased awareness.

General comments on the call for evidence:

- The Mayor is pleased to be providing evidence to the Department for Environment, Food and Rural Affairs (Defra) to inform the national policy statement on flooding. The Mayor believes there is a need for Government to provide strong guidance and support to ensure that London is prepared for future flooding, particularly in relation to vulnerable communities likely to be impacted by increased risk of flooding as the climate changes. Clarifying flood risk roles and responsibilities, reinforcing the importance of good spatial planning and a drive towards greater property retrofit for flood resilience is welcome.
- However, the policy must set stronger ambitions for England's urban areas, like London, to allow them to adapt and become resilient to growing urban flood risks. One of London's main risks is surface water flooding, affecting over 164,000 homes and 25,000 workplaces. Government's current national funding model does not sufficiently address this risk. The government should revise the way they distribute flood risk funding to give greater priority to urban flood risk and allow surface water management projects to be funded, ensuring Londoners are protected.

Specifically, in terms of local flood risk, modifications to current funding mechanisms are required. The current partnership funding calculator, used by the Thames Regional Flood and Coastal Committee (RFCC) for both Flood Defence Grant-in-Aid and Local Levy, is heavily weighted towards fluvial/tidal flooding schemes. This makes it very difficult to obtain funding for localised surface water interventions, which are increasingly seen as the solution in dense urban environments such as London.

- As part of revisions to the way flood risk funding is distributed, the Mayor should play a more formal role in prioritising the most at-risk areas for London. This will give the Mayor the ability to prioritise schemes spatially and focus on maximising the multiple benefits, such as biodiversity and amenity as well as reducing surface water flood risk. Providing funding at a city scale will drive overall efficiencies in delivery and optimal surface water flood risk management solutions that work across local authority boundaries in London.

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- The GLA is currently leading on the London Strategic SuDS Pilot, which looks to quantify the reductions in flood risk possible from cumulative small-scale SuDS measures. This project will also produce a modified partnership funding calculator that aims to demonstrate a better measurement of specific benefits provided by urban surface water flood risk management measures. The results of this work should help to inform a much-needed update to the government's partnership calculator to better accommodate urban flood risk whilst placing a greater value on wider environmental benefits. These outputs should be considered as part of this call for evidence.
- Government policy should look to address some of the challenges more typical of urban areas given the greater numbers of people and buildings in cities, including homes and businesses, that must be resilient to the impacts of climate change. In London, we know that there are currently 164,000 residential properties and 25,000 commercial properties at risk of surface water flooding in a 100-year rainfall event. These numbers are likely to increase over time. Some of the urban challenges that this policy should address include; lower levels of flood awareness, higher social deprivation and vulnerability, generally less community action and cohesion, more residential basements, complexity of land ownership/responsibilities, high density development and limited space in the urban context.
- Funding/Financing - government should explore green finance opportunities and the potential mechanisms for upfront financing such as developer contributions and private finance for urban surface water flood risk measures – encouraging these to be designed to deliver multifunctional benefits would help to attract a broader range of finance options, such as those that fund green infrastructure.

Responses to questions:

What we understand by the term "resilience"

We would like to know more about how the term "resilience" is currently being used in flood and coastal erosion contexts.

5. How is the concept of resilience applied in relation to flooding and/or coastal erosion? For example, how do you use it in your own work? How is it used internationally?

The Mayor, in his London Environment Strategy, defines resilience in broad terms as: *the ability of a system to recover from the effect of an extreme load that may have caused harm.*

A more detailed definition used by the Mayor in his forthcoming Urban Resilience Strategy describes urban resilience as:

Urban resilience is the capacity of individuals, communities, institutions, businesses and systems within a city to survive adapt and grow no matter what kinds of chronic stresses and acute shocks they experience.

This definition emphasises the focus on long term stresses (including challenges related to climate change) as opposed to just looking into shocks/emergency preparedness. It also emphasises the role of businesses, third sector organisations and communities in delivering resilience in cities.

The definition used by the London Resilience Partnership in their strategy – which focusses on shorter term incident response/recovery - is along the same lines: *[resilience] is the ability of institutions and*

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communities to work together to prevent, handle then recover and learn from disruption, and adapt to change.

The concept of resilience is important in the context of flood risk in London – it drives the need to ensure the city is prepared for the residual or uncertain risks of flooding. The residual risk of tidal flooding is managed through the planning system to ensure properties near tidal defences consider the risk of defence failure or overtopping. Similarly, for surface water flood risk, new developments in areas of high risk are required to ensure development is resilient to flooding. Tools such as sustainable drainage and property flood resilience measures are instrumental in managing these risks. Although planning policies ensure that new development is resilient to flood risk this only accounts for a small percentage of properties. There is a need to increase funding and support for the retrofitting of property flood resilience measures in order to address the risk for existing buildings.

Adaptation must also be considered alongside resilience. The Mayor defines adaptation as: *the process (or outcome of a process) that leads to a reduction in harm or risk of harm, or realisation of benefits associated with climate variability and climate change.* Adaptation policies can lead to greater resilience of communities and ecosystems to climate change.

The London Environment Strategy sets out that climate change will disproportionately affect those least able to respond and recover from it. Poorer Londoners will find it more difficult to recover from flooding. The challenge is how to manage the complex, and often interacting, pressures from climate change to ensure London and Londoners can adapt to climate change and stay resilient to any severe weather events that do occur.

Adaptation requires managing risks for the longer-term, but to focus solely on risk management would be to overlook the many additional benefits of adaptation. For example, adaptation provides an opportunity to consider climate change alongside wider social, demographic, economic, environmental, and political priorities. This will help create a fairer, more prosperous, healthier, and more resilient city.

In order for London to adapt to climate change and be resilient to severe weather events, London's infrastructure providers and businesses must understand and manage climate change risks and impacts to deliver resilient growth and services; and the risk of flooding must be reduced through appropriate flood defences and increased awareness.

6. How can the different aspects of resilience be brought together into one “overall resilience” concept?

The Mayor supports the concept of ‘standards of resilience’ set out in the Environment Agency’s (EA) FCERM strategy and supported the National Infrastructure Commission, Ofwat and water companies in proposing increased standards of resilience for water supply in London. However, setting a resilience standard for flood risk in dense urban areas will be challenging, especially given the complexity of dense urban areas and surface water issues. Unlike areas of tidal or fluvial flood risk, surface water flooding is spread out across the city and measures to address it cannot be easily concentrated into major flood projection projects. The GLA would be interested in working with Defra and/or the EA to investigate how a resilience standard for flood risk would be developed

In developing an overall resilience concept, future government policy should look to better integrate climate hazards/integrated water management. Future policy should explore links between flood risk and other climate and non-climate hazards (e.g. drought) which may lead to disruption and potential cascading impacts. It should also make stronger links between flood resilience and wider water resilience and the need to improve integrated water management practices.

Future policy should identify barriers to using/implementing a range of tools that will help achieve overall resilience. For example, wider uptake of property level resilience measures and increased retrofitting of sustainable drainage or natural flood management. If these barriers were identified Defra,

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the EA and other risk management authorities could work with a range of sectors to identify the actions required to overcome these.

Policy would also benefit from greater prioritisation of the benefits of green sustainable drainage solutions for urban areas. The draft London Plan policy on sustainable drainage has a strengthened drainage hierarchy which prioritises green solutions and rainwater harvesting to manage surface water, due to the wider benefits they deliver for communities and the environment and contribute to Defra's aim in supporting 'overall resilience'.

Green SuDS measures are challenging to deliver under current FCERM funding arrangements (see Q16). Government policy should consider introducing an alternative funding stream for funding small-scale SuDS interventions which are known to provide an aggregated benefit when multiple schemes are delivered across a catchment.

Describing outcomes, driving action and monitoring progress

To help with considering how best to describe outcomes, drive action and monitor progress on flooding and coastal erosion, we would like evidence about the effective use of different types of frameworks, systems and metrics. The results of this call for evidence will inform our decisions about which approach to adopt for the future as part of our policy for managing flood and coastal erosion risk in England.

7. Please provide examples from other contexts of the effective use of metrics to achieve an overarching outcome (e.g. sustainability or wellbeing) and of frameworks which are successful in supporting this.

There are several existing frameworks for understanding and monitoring action on climate adaptation and flood risk. These include:

- TE2100 framework
- The C40 [MER framework](#) – this is quite new but is being considered and tested by a number of cities in the C40 network.
- The Committee on Climate Change Adaptation Committee's [monitoring and indicators framework](#) – it would be good for any FCERM monitoring to align with [existing national monitoring of adaptation](#).
- The Zurich community flood resilience [monitoring tool](#)
- This [CADD tool](#) for monitoring and developing adaptive capacity. The London Climate Change Partnership was involved in developing and using earlier versions of this and found it effective in structuring a qualitative assessment of adaptation progress. It is also useful for improving adaptation progress. An earlier version was also used in the first UK CCRA. This tool would work for flood risk in particular.
- Transport for London's [Healthy Streets approach](#)

The London Climate Change Partnership, which is hosted by the Greater London Authority, is working to develop a set of indicators for London on climate adaptation. The indicators will bring together existing data sets relating to London to create a baseline of climate adaptation in London and provide a way of monitoring progress being made.

Additionally, the Mayor launched the London Environment Strategy in 2018, which sets out the Mayor's objectives, policies and proposals for protecting and improving London's environment. It provides a vision for London's environment and sets policies and proposals both for the Mayor, and the range of partners who need to collaborate to deliver its ambitions. The London Environment Strategy

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Implementation Plan (https://www.london.gov.uk/sites/default/files/implementation_plan.pdf) sets out those actions that the Mayor has prioritised to take forward directly between 2018 and 2023 to help implement the policies and proposals set out in the strategy. It is regularly updated to show progress each year.

Part 1 of the Implementation Plan lists the objectives in the London Environment Strategy and sets out the actions that will be taken to deliver against each of them between 2018 and 2023. It also provides delivery timescales and information on how each action will be monitored and reported on. Not all of the actions highlighted in the strategy, or additional actions that may be needed to deliver the objectives of strategy, are listed here. Those wider or future measures that are within the Mayor's control will be set out in future iterations of this Implementation Plan, as meeting the objectives of the strategy will require successive and cumulative activity over the longer term. The impacts of these actions will be monitored and evaluated, and actions will be reviewed to take the evaluation into account.

The principal policy in the London Environment Strategy related to FCERM is "Reduce risks and impacts of flooding in London on people and property and improve water quality in London's rivers and waterways".

8. What would be the advantages and disadvantages of using composite metrics to describe, drive and monitor flood and coastal erosion outcomes (nationally and locally)?

Please provide any evidence and any comments.

If you identified disadvantages, how may these be overcome?

Please upload any relevant documents or provide hyperlinks in the text box above.

The advantage of using a composite metric is that, like using a suite of metrics, it allows the consideration of a wider range of benefits and issues beyond purely flood risk. This range of sub-metrics should include water quality, biodiversity, cooling, greening, property resilience, community resilience, placemaking, flood risk vulnerability, social impacts and more.

Any metrics should drive better integration between flood risk projects and wider environmental improvements. Currently water resources, water quality and flood risk projects remain relatively siloed. There are multiple reasons for this, which include unaligned planning cycles for water and flooding, limitations associated with current funding models, etc. The added benefits of using a composite metric include the ability to consider issues in the round rather than in a siloed way and the ease of communication by combining issues under an 'overall' metric.

The main disadvantage of a composite metric comes down to the way the underlying sub-metrics are weighted against each other. There is a risk that one issue could dominate the others and negate the benefits of considering multiple issues. This is of particular concern when it comes to funding for flooding.

The current 6-year funding programme's focus on better protecting homes has failed to encourage schemes that provide multiple environmental benefits. Any proposed changes to the way flood risk funding is allocated to projects should be linked to this objective giving greater weight to projects that deliver tangible environmental and social benefit in addition to flood risk reduction. In order to have a composite metric and also encourage multiple benefits, flood risk funding schemes need to align with other environmental funding streams such as the EA's environment programme or funding associated with the catchment-based approach to allow schemes to maximise the environmental benefits and funding potential.

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One way to achieve this is by adapting funding criteria to give greater weighting to the benefits derived from broader environmental improvements delivered by a flood management project/scheme. This evidence is part of the outputs of the London Strategic SuDS Pilot (see Q16).

Local funding initiatives that harness community and private contributions

We would like to know more about the arrangements which have been used to harness local private and community funding contributions and how these types of initiatives can be encouraged.

14. Please provide examples of initiatives delivering flood and coastal erosion outcomes which have been funded from sources other than the public sector and explain how they were funded.

Please note the following London examples:

- **Thames Water contributions towards SuDS** – surface water drainage catchment area-based approach to payment has – in theory - made application for SuDS funding easier. Thames Water does not require hydraulic modelling to demonstrate the exact performance of the SuDS scheme as a pre-requisite for funding. These schemes have delivered flood risk benefits, however while this helps streamline the delivery of SuDS, it is challenging to link volume of surface water removed from the drainage network to homes better protected without modelling.
- **The London Strategic SuDS Pilot** (see Q16) involves the carrying out of modelling of specific catchment areas to identify an average ratio between the volume of water removed and the number of properties better protected from flooding. This ratio then allows individual schemes to be approved within that catchment by just demonstrating the volume removed by the interventions rather than having to undertake individual modelling, which is disproportionately expensive and time-consuming for small schemes. This also opens up the ability to piggy-back on opportunities within other projects that would otherwise be missed if required to follow current processes around Flood Defence Grant in Aid (FDGiA).
- **London Strategic SuDS Pilot Scheme** - London Bridge & Marble Arch Business Improvement Districts have contributed funding to some of the schemes and have agreed to take on maintenance (revenue funding) to enable the projects to go ahead. London Councils find it challenging to deliver schemes due to the perceived additional financial burden of ongoing maintenance

Furthermore, risk management authorities should be encouraged to work with strategic and local planning authorities to maximise investment, through mechanisms such as Community Infrastructure Levy and Section 106 from developers and contributions from other beneficiaries of flood risk management schemes. Particularly where such schemes deliver a wide range of additional benefits such as green space and amenity value.

16. What could be done to encourage private and community funded initiatives and help them succeed?

For various reasons, the current partnership funding model has been relatively ineffective at attracting private contributions to flood management schemes. In part, this is due to private contributors generally requiring certainty of scheme delivery before they will commit to a contribution. If a scheme has

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certainty of delivery, it is usually already fully funded. Such barriers will need to be examined, to enable greater contributions from private beneficiaries of new flood management measures.

Given this, the Mayor supports using new potential sources of funding such as green finance and upfront financing such as developer contributions and private finance which may be more effective at bringing contributions from a wider range of beneficiaries. The Thames Estuary 2100 project may offer such an opportunity to test new funding mechanisms.

Specifically, in terms of local flood risk, modifications to current funding mechanisms are required to help manage local flooding. The current partnership funding calculator, used by the Thames RFCC for both Flood Defence Grant-in-Aid and Local Levy, is heavily weighted towards fluvial/tidal flooding schemes. This makes it very difficult to obtain funding for localised surface water interventions, which are increasingly seen as the solution in dense urban environments such as London. In addition to this, it is also heavily weighted towards Environment Agency led schemes, as unlike the Environment Agency, other organisations (including Risk Management Authorities) are unable to claim maintenance costs and therefore are at a disadvantage when scoring/ranking schemes.

The GLA is currently leading on the London Strategic SuDS Pilot, which looks to quantify the reductions in flood risk possible from cumulative small-scale SuDS measures. This project will also produce a modified partnership funding calculator that aims to demonstrate a better measurement of specific benefits provided by urban surface water flood risk management measures. The results of this work should lead to an update of the partnership calculator to better accommodate urban flood risk.

Flood risk management schemes often create benefits far beyond their immediate surroundings. The Mayor would support research on funding schemes where costs for construction or upgrading of flood risk management measures can be fairly allocated across the beneficiaries of those measures.

Other measures to increase the likelihood of successful flood schemes delivery include:

- The stringent and often lengthy time scales associated with FDGIA lead to failure of schemes missed opportunities due to the challenges of aligning different funding sources. This is particularly the case to for schemes that deliver multiple benefits such as flood risk reduction, and amenity and green space.
- Private investment often requires assurances that the projects will be delivered before commitment to provide funding, if FDGIA also requires this level of assurance then it can lead to these schemes never materialising.
- As mentioned in Q14, remove the need to hydraulically model small SuDS schemes and work instead on an area/volume removed from the draining to the sewer/river network approach instead.
- Place more value in on the wider benefits that flood schemes can deliver.

Developer contributions

We would like to learn more about how these existing mechanisms are being used to secure funding from developers to ensure that new developments are safe for their lifetime.

17. Please provide evidence on the extent to which contributions being made by developers (through section 106, Community Infrastructure Levy and other means) are being used to fund works to manage the flood risks.

Currently, there is no centralised database of Section 106 contributions/obligations that can be searched to identify whether funds are due, have been received or have been spent on flood risk-related projects.

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We are aware that MHCLG have published a standard format for local authorities to publish information about planning obligations; however, as yet it has not been embedded into the planning process nor mandated, so it is difficult for strategic authorities to monitor this.

18. What are the barriers to securing and using developer contributions to ensure that new developments are safe for their lifetime, taking account of climate change? How can these barriers be overcome?

An issue, particularly relevant in the urban setting, is that flood risk assessments are only required for new developments in EA Flood Zones 2 or 3 or for sites over a hectare. The EA Flood Zones only cover tidal and fluvial flood risk and in London, this includes 37,359 homes in zones 2 and 3. This means anything less than a hectare or in EA Flood Zone 1 (which covers the rest of London's properties) does not have to complete a flood risk assessment, even though many of these properties, especially in high density areas, might be vulnerable to surface water flood risk. If all development is to achieve place-based resilience, then developments susceptible to surface water flood risk must also be considered.

Place-based resilience may require private investment in the surrounding public realm with flood risk playing more of a prominent role in developer contributions. Improving the use of developer contributions should be encouraged as a route to help fund investment on public land. Strategies for addressing flood risk at strategic local scales should be included in local plans and treated as enabling infrastructure or community assets necessary as part of new developments, making it easier to fund via developer contributions. Defra and MHCLG should be supporting and strongly encouraging local authorities to deliver this.

19. Please provide examples of cases where authorities have sought (successfully or unsuccessfully) to pool contributions to build larger pieces of flood or coast infrastructure that benefit more than one local authority area?

An innovative approach to delivery of strategic SuDS has been looked at for one of the London Mayoral Opportunity Areas, Old Kent Road. The potential for SuDS Offsetting within a local catchment is being considered as the density of development proposed within this area means there is limited space for green SuDS. By providing developments with the ability to offset a proportion of their SuDS requirements by contributing to a centralised fund, managed by the local authority, this can provide much needed funding to the Local Authority to deliver strategic green SuDS within the public realm. These provide multiple benefits to the wider community as well as providing the flood risk reduction that otherwise would have to be provided through on-plot attenuation (most likely using underground tanks). This will require the inclusion of the SuDS offsetting requirement, methodology and associated costs within local planning policies and guidance, but this is something the Mayor believes should be considered more widely for dense development areas. Defra and MHCLG have the opportunity to learn from this example and consider how to support such local planning policies, including standardising methodologies for setting costs.

Managing financial risks

We would like to know more about how other organisations are already identifying flooding related financial risks and how the information is used.

21. Please provide examples of public and private organisations which are already disclosing their financial exposure to flood or other climate risks and how they go about it.

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The Mayor supports London organisations disclosing and the London Climate Change Partnership is looking at how to support reporting, given the expectation set out in the government's Green Finance Strategy that states businesses should be reporting in line with Task Force on Climate-related Financial Disclosures (TCFD) recommendations by 2022. See more detail on TCFD at <https://www.fsb-tcfid.org/publications/tcfid-2019-status-report/>.