

- 9.11.5 The United Kingdom Onshore Oil and Gas Group (UKOOG), which represents the industry, has established a **Community Engagement Charter** for new onshore oil and gas proposals.¹⁷² The Charter sets out a number of commitments for operators which includes engagement with local communities at each of the three main stages of operations (exploration, appraisal and production). Where any proposals for fracking to come forward, applicants who are members of UKOOG would be expected to comply with these commitments.

Policy SI 12 Flood risk management

- A Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.
- B Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.
- C Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.
- D Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.
- E Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.

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Community Engagement Charter – oil and gas from unconventional reservoirs, UKCOOG, 2013, <http://www.ukoog.org.uk/community/charter>

- F Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.
- G Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

- 9.12.1 In London, the boroughs are **Lead Local Flood Authorities** (LLFAs) and are responsible, in particular, for local surface water flood risk management and for maintaining a flood risk management assets register. They produce Local Flood Risk Management Strategies. LLFAs should cooperate on strategic and cross-boundary issues.
- 9.12.2 The **Regional Flood Risk Appraisal** (RFRA) considers all sources of flood risk including tidal, fluvial, surface water, sewer, groundwater and reservoir flooding and has been updated in collaboration with the Environment Agency. The RFRA provides a spatial analysis of flood risk including consideration of risks at major growth locations such as Opportunity Areas and Town Centres and key infrastructure assets. The Government's updated allowances for climate change are reflected in the expected sea level rise and increased flood risks considered in the RFRA. The updated allowances consider the lifetime, vulnerability and location of a development.
- 9.12.3 The **Thames Estuary 2100 Plan** (TE2100), published by the Environment Agency, and endorsed by Government, focuses on a partnership approach to tidal flood risk management. It requires the ability to maintain and raise some tidal walls and embankments. The Environment Agency estimates that a new Thames Barrier is likely to be required towards the end of the century. Potential sites will be needed in Kent and/or Essex requiring close partnership working with the relevant local authorities.
- 9.12.4 The concept of Local Authorities producing **Riverside Strategies** was introduced through the TE2100 Plan to improve flood risk management in the vicinity of the river, create better access to and along the riverside, and improve the riverside environment. The Mayor will support these strategies.

- 9.12.5 The Environment Agency's Thames River Basin District **Flood Risk Management Plan** is part of a collaborative and integrated approach to catchment planning for water. Measures to address flood risk should be integral to development proposals and considered early in the design process. This will ensure they provide adequate protection, do not compromise good design, do not shift vulnerabilities elsewhere, and are cost-effective. Natural flood risk management in the upper river catchment areas can also help to reduce risk lower in the catchments. Making space for water when considering development proposals is particularly important where there is significant exposure to flood risk along tributaries and at the tidal-fluvial interface. The Flood Risk Management Plan should inform the boroughs' Strategic Flood Risk Assessments.
- 9.12.6 In terms of mitigating **residual risk**, it is important that a strategy for resistance and then resilience including safe evacuation and quick recovery to address such risks is in place; this is also the case for utility services. In the case of a severe flood, especially a tidal flood, many thousands of properties could be affected. This will make rescue and the provision of temporary accommodation challenging. Designing buildings such that people can remain within them and be safe and comfortable in the unlikely event of such a flood, will improve London's resilience to such an event.

Policy SI 13 Sustainable drainage

- A Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed.
- B Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:
- 1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
 - 2) rainwater infiltration to ground at or close to source
 - 3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)

- 4) rainwater discharge direct to a watercourse (unless not appropriate)
 - 5) controlled rainwater discharge to a surface water sewer or drain
 - 6) controlled rainwater discharge to a combined sewer.
- C Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.
- D Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

- 9.13.1 London is at particular risk from surface water flooding, mainly due to the large extent of impermeable surfaces. Lead Local Flood Authorities have responsibility for managing surface water drainage through the planning system, as well as ensuring that appropriate maintenance arrangements are put in place. **Local Flood Risk Management Strategies and Surface Water Management Plans** should ensure they address flooding from multiple sources including surface water, groundwater and small watercourses that occurs as a result of heavy rainfall.
- 9.13.2 Development proposals should aim to get as close to greenfield run-off rates¹⁷³ as possible depending on site conditions. The **well-established drainage hierarchy** set out in this policy helps to reduce the rate and volume of surface water run-off. Rainwater should be managed as close to the top of the hierarchy as possible. There should be a preference for green over grey features, and drainage by gravity over pumped systems. A blue roof is an attenuation tank at roof or podium level; the combination of a blue and green roof is particularly beneficial, as the attenuated water is used to irrigate the green roof.
- 9.13.3 For many sites, it may be appropriate to use **more than one form of drainage**, for example a proportion of rainwater can be managed by more sustainable methods, with residual rainwater managed lower down the hierarchy. In some cases, direct discharge into the watercourse is an appropriate approach, for example rainwater discharge into the tidal Thames or a dock. This should include suitable pollution prevention filtering measures, ideally by using soft engineering or green infrastructure. In addition, if direct discharge is to a watercourse where

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The runoff that would occur from a site in undeveloped natural state.



the outfall is likely to be affected by tide-locking, suitable storage should be designed into the system. However, in other cases direct discharge will not be appropriate, for example discharge into a small stream at the headwaters of a catchment, which may cause flooding. This will need to be assessed on a case-by-case basis, taking into account the location, scale and quality of the discharge and the receiving watercourse. The maintenance of identified drainage measures should also be considered in development proposals.

- 9.13.4 The **London Sustainable Drainage Action Plan** complements this policy. It contains a series of actions to make the drainage system work in a more natural way with a particular emphasis on retrofitting.

Policy SI 14 Waterways – strategic role

- A Development Plans and development proposals should address the strategic importance of London's network of linked waterways, including the River Thames, and should seek to maximise their multifunctional social, economic and environmental benefits.
- B To ensure coordination and alignment at the interface between terrestrial and marine planning, Development Plans and development proposals should take account of the emerging Marine Spatial Plans prepared by the Marine Management Organisation.
- C Boroughs are encouraged to work together on policies or other appropriate area-based strategies that address cross-boundary waterways issues.
- D To reflect the distinctiveness of areas that specifically relate to the River Thames, relevant Development Plans should designate, and ensure the maintenance of, Thames Policy Areas (TPAs). Setting the boundary of TPAs should be done in consultation with neighbouring boroughs, including those across the river. Boroughs are encouraged to plan for TPAs through joint Thames Strategies.
- E Joint Thames Strategies and other area-based joint waterways strategies should consider:
 - the local character of the river/waterway
 - water-based passenger and freight transport nodes
 - development sites and regeneration opportunities