

Appendix G – Spatial Planning Information Pack

Background

PPS 25 sets out national planning guidance for development in relation to flood risk. It takes a risk based approach and categorises land uses into different vulnerabilities, which are appropriate to different flood zones.

PPS 25 applies to all forms of flood risk, however, surface water, groundwater and ordinary watercourse flood risks are generally less well understood than fluvial or coastal flood risk. In part this is due to the much faster response times of surface water flooding, a perception that the impacts are relatively minor and the highly variable nature of influences, e.g. storm patterns, local drainage blockages, interactions with the sewer system.

However climate change models are predicting more frequent heavy storms and there is emerging evidence that this is already happening. It is also clear from the flooding that occurred in several parts of England in summer 2007 that surface water flooding can have major impacts. In the heavily urbanised area of London, the risks are significant and it is important that appropriate consideration is given to these risks when new development is proposed.

The planning system is a key tool in reducing flood risk, and with this additional information, this can apply to the surface water risk as well as fluvial and tidal risk.

Since April 2011, London Boroughs have been given the roles of Lead Local Flood Authorities (LLFAs) by the Flood and Water Management Act 2010. This means that each borough has new duties. The Planning Department has an important role to play in delivering these new duties and must ensure that it forms part of authority wide co-ordination of the LLFA role.

Whilst this document is titled a SWMP, it also identifies flood risk at ordinary watercourses and has been adapted to include consideration of groundwater flood risk through the identification of a map showing “Increased Potential for Elevated Groundwater (iPEG).

The Greater London Authority will examine the 33 SWMPs across London to update the Regional Flood Risk Appraisal during 2012.

Using the SWMP to update the borough SFRA

The SFRA for the LB of Hillingdon contains very little information on historic analysis of surface water, groundwater and ordinary watercourse flood risk. Only four incidents of groundwater flooding were discussed in the report. They are located in Hillingdon, Ruislip and Northwood.

The mapping within this SWMP (Figures 13 to 17 in Appendix D) shows some areas that are vulnerable to extensive deep accumulations of water (>0.5m), these areas have a high certainty of flooding during extreme storms and the damage occurring is likely to be significant. The mapping also shows some small areas of potentially deep (>0.5m), these areas may have particular risks associated with them, but may also occur due to irregularities in mapping and modelling. The mapping also shows areas of shallower flooding (<0.5m), some isolated and some more extensive flooding. Maps show general flow directions and approximate velocities (in the form of ‘hazard’ maps) as even relatively shallow water flowing at high velocities can be a threat to life and can cause damage.

The production of this SWMP will be a significant addition of new/updated data. Therefore, in due course, this should trigger a review of the SFRA. The SFRA should consider these risks in the following ways:

- Large areas of deep (>0.5m) flooding should be shown as Local Flood Risk Zones, unless there is evidence to suggest that these risks have been mitigated, for example by high capacity drainage or pumping infrastructure.
- Small, isolated areas of deep (>0.5m) flooding should be investigated to determine how likely they are to be at flood risk but do not need to be shown if there is no significant risk.
- Large areas of shallower flooding should be identified as Local Flood Risk Zones if they pose a significant risk, but do not need to be shown if the risks are relatively minor.
- Smaller isolated areas of shallower flooding should generally not be identified as Local Flood Risk Zones, unless there is a particular significant risk associated with that area, as it must be expected that most areas will be affected to some extent by rainwater.
- Routes of fast flowing water may be considered as Local Flood Risk Zones if they pose a significant risk.
- Areas of Increased Potential for Elevated Groundwater, should be shown where they are likely to pose a significant risk of flooding or where they are likely to affect the nature of future development, especially for the design and use of sub-surface spaces.

Identifying an area as a Local Flood Risk Zone, should mean that it is then be treated in a similar way to Environment Agency Flood Zone 3, namely that a Flood Risk Assessment is required and measures should be taken to reduce the likelihood and impact of any flooding.

Where a Critical Drainage Area contributes significant amounts of surface water to a Local Flood Risk Zone, the SFRA should identify this and suggest strict application of sustainable drainage measures in line with the London Plan Sustainable Drainage Hierarchy.

Using the SWMP to update policies in Development Plan Documents

Ideally the review of the borough SFRA should be a pre-cursor to any significant change to the Core Strategy and development control policies. Therefore reference to the SFRA should automatically update the approach to local flood risks. Where the SFRA has not been updated, the review of Development Plan Documents should consider the same steps outlined above for the SFRA review.

Using the SWMP to influence major areas of redevelopment

Where major development areas are proposed, either in the London Plan or within the Core Strategy DPD, these should be examined for:

- Local Flood Risk Zones that affects the area
- Increased Potential for Elevated Groundwater
- Contribution of run-off to Local Flood Risk Zones beyond the actual redevelopment area.

Given the large scale of major developments, it is unlikely that the Local Flood Risk would prevent redevelopment taking place, but it may affect the location, uses, design and resilience of the proposals. Therefore, a Flood Risk Assessment needs to be undertaken and it should consider:

- the location of different types of land use within the site(s)
- the layout and design of buildings and spaces to take account of flood risk, for example by dedicating particular flow routes or flood storage areas
- measures to reduce the impact of any flood, through flood resistance/resilience measures/materials
- incorporating sustainable drainage and rainwater storage to reduce run-off to adjacent areas
- linkages or joint approaches for groups of sites, possibly including those in surrounding areas

Using the SWMP to influence specific development proposals

Where development is proposed in an area covered wholly or partially by a Local Flood Risk Zone, this should trigger a Flood Risk Assessment, as already required under PPS25.

Whilst some small scale developments may not be appropriate in high risk areas, in most cases it will be a matter of ensuring that the Flood Risk Assessment considers those items listed under major developments above and also considers some or all of the following site specific issues:

- Are the flow paths and areas of ponding correct, and will these be altered by the proposed development?
- Has the site been planned sequentially to keep major surface water flow paths clear?
- Has exceedance of the site's drainage capacity been adequately dealt with? Where will exceedance flows run off the site?
- Could there be benefits to existing properties at risk downstream of the site if additional storage could be provided on the site?
- In the event of surface water flooding to the site, have safe access to / egress from the site been adequately considered.
- Have the site levels been altered, or will they be altered during development? Consider how this will impact surface water flood risk on the site and to adjacent areas.
- Have inter-dependencies between utilities and the development been considered? (for example, the electricity supply for building lifts or water pumps)

Specific Locational Considerations

Within the London Borough of Hillingdon, the following major redevelopment areas have already been identified.

Table G-1: Specific Locational Considerations

Opportunity Area	Local Flood Risk
Uxbridge	<ul style="list-style-type: none"> • Surface water: Railway cuttings, Cowley Road • Groundwater: Parts of opportunity area • Fluvial: Fray's River
Yeading	<ul style="list-style-type: none"> • Surface Water: Shakespeare Avenue, Barnhill Community High • Fluvial: Yeading Brook
West Drayton	<ul style="list-style-type: none"> • Groundwater: Western extent of opportunity area • Fluvial: Fray's River and River Colne
Hayes	<ul style="list-style-type: none"> • Surface Water: Ponding in low points along Uxbridge Road • Groundwater: Parts of opportunity area
Heathrow	<ul style="list-style-type: none"> • Groundwater: The majority of Heathrow Airport is shown to be susceptible. • Fluvial: Duke of Northumberland's River

Mapping Checklist

Table G-2 below indicates the SWMP maps located in Appendix D which are of potential use to spatial planning, and indicates which maps may be suitable for replacing existing SFRA maps:

Table G-2: SWMP maps of potential use to spatial planners

Issue	SWMP maps	Consider replacing existing SFRA maps?
Surface water flood risk	Figures 13 to 22	Yes – more detailed methodology to that used for the SFRA.
Increased potential for elevated groundwater	Figure 10	Yes – more detailed methodology to that used for the SFRA.
Infiltration SUDs suitability map	Figure 11	Yes – provides a consistent initial infiltration SUDs screening process for all London Boroughs, but does not replace on-site assessments.
Recorded incidents of sewer flooding	Figure 9	Yes – similar method (based on postcode sector) but brings the records up-to-date to June 2010.