Tamworth, Lichfield, Stafford and Staffordshire Moorlands

Level 1 Strategic Flood Risk Assessment

Using the SFRA in the Planning Process

In August 2007 a group comprising the District and Borough Councils of Tamworth, Lichfield, Stafford and Staffordshire Moorlands commissioned Halcrow to produce a Level 1 Strategic Flood Risk Assessment (SFRA) in accordance with Planning Policy Statement 25 (PPS 25). This document contains a summary of the SFRA objectives and how it should be utilised.

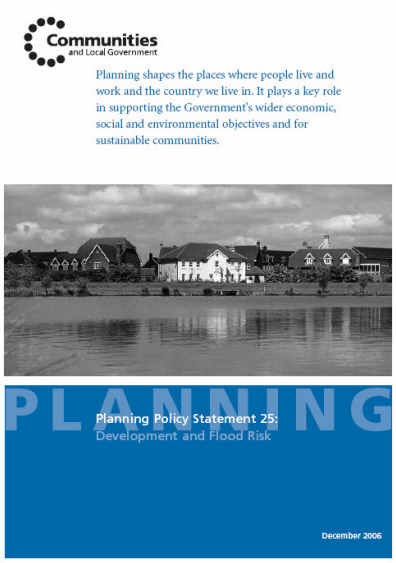
Planning Context

The Planning and Compulsory Purchase Act 2004 came into force in September 2004 and this replaced the Regional Planning Guidance for the West Midlands (RPG11) with a new West Midlands Regional Spatial Strategy (WMRSS). The WMRSS provides a long term land-use and transport planning framework for the West Midlands region, determining the scale and distribution of housing and economic development for each District or Borough within the region. It requires the Local Planning Authorities (LPAs) to produce a Local Development Framework (LDF) rather than a Local Plan. An LDF is a folder of Development Plan Documents (DPDs) prepared by an LPA, outlining the spatial planning strategy for the local area. In conjunction with the WMRSS, the LDF determines how the planning system will shape the local community.

DPDs outline the key development goals of the LDF. They are subject to rigorous procedures of community involvement, consultation and independent examination. DPDs are subject to a Sustainability Appraisal to ensure economic, environmental and social effects of the plan are in line with sustainable development targets. An SFRA satisfies the sustainability appraisal by ensuring that flood risk has been taken into account at all stages of the planning process. Once adopted, development control decisions must be made in accordance with the DPDs, unless material considerations indicate otherwise (source: http://www.planningportal.gov.uk/uploads/ldf/ldfguide.html).

PPS 25

In December 2006 the Government published Planning Policy Statement 25 (PPS 25): Development and Flood Risk (a restatement of PPG 25). It reflected the general direction set out in 'Making Space for Water' (Defra, 2004), the evolving strategy aiming to shape flood and coastal erosion risk over the next 10 to 20 years. The SFRA conforms with PPS 25, ensuring the Councils have met their PPS 25 obligations.



The SFRA is a strategic document which refines information on the probability of flooding, taking other sources of flooding (including surface water, groundwater, foul and combined sewers, canals and reservoirs) and the impacts of climate change into account. Through the creation of strategic flood risk maps, showing flooding from all sources, the SFRA provides the basis for applying the Sequential Test. This is a process which seeks to locate new development in appropriate flood zones, based on the development's vulnerability classification. As a living document, the SFRA should be updated as new data becomes available.

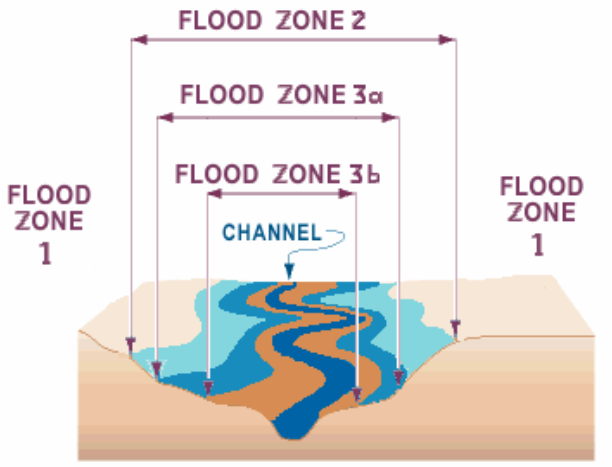
Flood Zones

PPS 25 Flood Zones are adjacent areas that subdivide the spatial variation of flood probability from rivers.

Zone 1: Low Probability
This zone comprises land assessed as having a less than 1 in 1000 annual probability of river flooding in any year (<0.1%).

Zone 2: Medium Probability
This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) in any year.

Zone 3a: High Probability
This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) in any year.



Zone 3b: The Functional Floodplain
This zone comprises land where water has to flow or be stored in times of flood. This Flood Zone comprises land which would flood with an annual probability of 1 in 20 (5%) or greater in any year, or at another probability to be agreed between the LPA and the Environment Agency.

The Sequential Test

A key aim of a Level 1 SFRA is to guide development to the appropriate Flood Zone using the Sequential Test. This is a process whereby preference is given to locating a new development in Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1, decision-makers should take into account the flood risk vulnerability of the development and consider reasonably available sites in Flood Zone 2, applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should decision-makers consider the suitability of sites in Flood Zone 3, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required. Within each Flood Zone, new development should be directed to sites at the lowest probability of flooding from other sources, also depicted on the strategic flood risk maps. The flood vulnerability of the development should be matched to the flood risk of the site, e.g. higher vulnerability uses should be located on parts of the site at lowest probability of flooding. The Sequential Test therefore demonstrates that there are no reasonably available sites, in areas with a lower probability of flooding, that would be appropriate to the type of development or land use proposed. The table overleaf (source: Annex D of PPS 25) summarises the appropriate uses of each zone, as well as Flood Risk Assessment (FRA) requirements and Policy Aims for each.

The success of the SFRA is heavily dependent upon the Council's ability to carry out the Sequential Test and implement the recommendations put forward for future sustainable flood risk management. It is ultimately the responsibility of the Council to establish robust policies that will ensure future sustainability with respect to flood risk.

Flood Zones and Appropriate Uses (Table D1 of PPS 25)

Zone 1 Low Probability	
Appropriate Uses	All uses of land are appropriate in this zone.
FRA Requirements	Sites comprising 1ha or above should have an FRA which incorporates the vulnerability to flooding from rivers and other sources and mitigates the potential to increase flood risk elsewhere. This need only be brief unless the factors above or other local considerations require particular attention.
Policy Aims	Developers and LPAs should seek opportunities to reduce the overall level of flood risk in the area and beyond, through the layout and form of the development, and the appropriate application of sustainable drainage techniques (SUDS).
Zone 2 Medium Probability	
Appropriate Uses	The water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure are appropriate in this zone. Subject to the Sequential Test being applied, the highly vulnerable uses are only appropriate in this zone if the Exception Test is passed.
FRA Requirements	All development proposals in this zone should be accompanied by an FRA.
Policy Aims	Developers and LPAs should seek opportunities to reduce the level of flood risk through the layout and form of the development and the application of SUDS.
Zone 3a High Probability	
Appropriate Uses	The water-compatible and less vulnerable uses of land are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable and essential infrastructure uses should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.
FRA Requirements	All development proposals in this zone should be accompanied by an FRA.
Policy Aims	Developers and LPAs should seek opportunities to: reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of SUDS; relocate existing development to land in zones with a lower probability of flooding; and create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b The Functional Floodplain	
Appropriate Uses	Only the water-compatible uses and essential infrastructure should be permitted in this zone. It should be designed and constructed to: remain operational and safe for users in times of flood; result in no net loss of floodplain storage; not impede water flows; and not increase flood risk elsewhere. Essential infrastructure in this zone should pass the Exception Test.
FRA Requirements	All development proposals in this zone should be accompanied by an FRA.
Policy Aims	Developers and LPAs should seek opportunities to: reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of SUDS; and relocate existing development to land with a lower probability of flooding.

Flood Risk Vulnerability Classification (Table D2 of PPS 25)

Essential Infrastructure	Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.
Highly Vulnerable	➢ Police stations, Ambulance stations and Fire stations, Command Centres and telecommunications installations required to be operational during flooding ➢ Emergency dispersal points ➢ Basement dwellings ➢ Caravans, mobile homes and park homes intended for permanent residential use ➢ Installations requiring hazardous substances consent
More Vulnerable	➢ Hospitals ➢ Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels ➢ Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels ➢ Non–residential uses for health services, nurseries and educational establishments ➢ Landfill and sites used for waste management facilities for hazardous waste ➢ Sites used for holiday or short-let caravans and camping, **subject to a specific warning and evacuation plan**
Less Vulnerable	➢ Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non–residential institutions not included in 'more vulnerable'; and assembly and leisure ➢ Land and buildings used for agriculture and forestry ➢ Waste treatment (except landfill and hazardous waste facilities) ➢ Minerals working and processing (except for sand and gravel working) ➢ Water treatment plants ➢ Sewage treatment plants (if adequate pollution control measures are in place)
Water-compatible Development	➢ Flood control infrastructure ➢ Water transmission infrastructure and pumping stations ➢ Sewage transmission infrastructure and pumping stations ➢ Sand and gravel workings ➢ Docks, marinas and wharves ➢ Navigation facilities ➢ MOD defence installations ➢ Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location ➢ Water-based recreation (excluding sleeping accommodation) ➢ Lifeguard and coastguard stations ➢ Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms ➢ Essential ancillary sleeping or residential accommodation for staff required by uses in this category, **subject to a specific warning and evacuation plan**

A summary table showing the Flood Risk Vulnerability Classifications that are and are not appropriate in each Flood Zone, as well as areas where the Exception Test needs to be passed in order for the development to go ahead, is shown in the table below (source: Annex D of PPS 25).

Flood Risk Vulnerability and Flood Zone 'Compatibility' (Table D3 of PPS 25)

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✔	✔	✔	✔	✔
	Zone 2	✔	✔	Exception Test required	✔	✔
	Zone 3a	Exception Test required	✔	✗	Exception Test required	✔
	Zone 3b 'Functional Floodplain'	Exception Test required	✔	✗	✗	✗

Key:

✔ Development is appropriate

✗ Development should not be permitted

Climate Change and SUDS

In line with PPS 25 requirements, climate change has been taken into account in this SFRA. A series of Flood Zone maps have been produced, showing how climate change might affect Flood Zones over a period of 50-100 years. It is recognised that the larger flood flows resulting from climate change are more likely to impact wide, flat floodplains. In these areas, the LPA might wish to use the climate change maps to carry out the Sequential Test, in order to ensure a long-term risk-based approach has been adopted in planning.

PPS 1 and PPS 25 require that LPAs should promote SUDS, the various approaches that can be used to manage surface water drainage in ways that mimic the natural environment. This is considered an essential element of reducing future flood risk to both the site and its surroundings. Indeed, reducing the rate of discharge from urban sites is one of the most effective ways of reducing and managing flood risk. LPAs should, therefore, ensure policies encourage sustainable drainage practices in their LDDs.

The Exception Test and Level 2 SFRAs

If, following the application of the Sequential Test, it is not possible to locate the development in zones of lower flooding probability, the Exception Test should be applied where indicated in Table D3. This allows flood risk to be managed while still allowing necessary development to occur. The Exception Test should be facilitated by a Level 2 SFRA. A Level 2 SFRA is required for developments which have been placed in Flood Zones 2 and 3, in order to assess the flood hazard posed to the site. Developments which are placed behind defences should also be assessed to understand the effects of a breach or overtopping of the defence during times of flood.