

Executive Summary

In July 2008, the West Midlands Regional Assembly commissioned Halcrow to update the West Midlands Regional Flood Risk Appraisal (RFRA) in accordance with Planning Policy Statement 25: Development and Flood Risk (PPS25) (2006) and its Practice Guide Companion (2008). This report presents the findings of the RFRA update which conforms to the requirements of the PPS25 Practice Guide (2008) and takes into account the latest available plans, strategies, reports and data.

The West Midlands RFRA was originally completed in September 2007 and was used throughout the process to inform the Preferred Option, developed from Phase Two of the Regional Spatial Strategy (RSS) revision submitted to the Government in December 2007. The original RFRA was commissioned during a transitional stage in flood risk planning policy and whilst the most up to date guidance at the time was used to complete the study, more guidance has subsequently become available, including more specific guidance on the development of RFRA's and the June 2008 PPS25 Practice Guide Companion. Further studies have also become available which are relevant to the Region including Catchment Flood Management Plans (CFMPs) and Strategic Flood Risk Assessments (SFRAs) which have included a better understanding of flood risk from sources other than fluvial (e.g. surface water and sewers, groundwater, reservoirs and canals).

This study has therefore updated the RFRA for the West Midlands Region to provide a broader, more rigorous assessment of flood risk, enabling the West Midlands Regional Assembly to inform the RSS Revision Phase Three process and comply fully with Government policy as outlined in PPS25. A comprehensive understanding of flood risk in the region has been developed using existing flood risk information. It should be noted that the assessment of fluvial flood risk has been based on the Environment Agency's undefended flood map, which PPS25 requires to be used when locating new development. This assessment is therefore available to be used to inform the broad location of development, taking into account the effects of climate change on flood risk in the Region within the plan period up to 2026 and for the lifetime of proposed development. An assessment has also been made of the implications of flood risk on critical infrastructure in the Region, which can be used to begin to develop the region's response to the Pitt Review.

Flood risk issues have been considered specifically in areas of proposed housing development as identified in the Phase Two RSS, particularly on areas set to have the most development (Major Urban Areas (MUAs), Settlements of Significant Development (SSDs) and Government Growth Points) to inform the viability of the proposed allocations to be considered by the Examination process and the Government. The RFRA provides a basis for further policy development, including the recommendation of sustainable flood risk management policy options for the Options Report for the Phase Three RSS options consultation and development of the Preferred Option in 2009. It also provides support for SFRAs at the local level and provides the opportunity to inform the Panel's view of the housing figures outlined in the RSS Phase Two Revision, and to a certain extent the options for higher housing numbers in the region as put forward by a study carried out by Nathaniel Lichfield and Partners (NLP). It will also inform the development of the proposed new Regional Strategy and recommends that this work is informed by a further update to the RFRA.

Following the guidance set out in the PPS25 Practice Guide, existing data of flood risk from all sources was collected from a number of sources including: the Environment Agency, Local Planning Authorities, Water Companies, British Waterways and Internal Drainage Boards (IDBs). This included: an overview of the region and river profiles (catchment characteristics, geology, river/flood response); historical flooding (fluvial, surface water, sewers, groundwater, impounded water bodies); residual risk areas (locations and severity), flood defences (type, length), proposed development (location and scale) and flood risk management policies.

An initial assessment of flood risk within the Region was undertaken using the Environment Agency's undefended Flood Map and through a review of existing flood risk information contained within CFMPs and SFRA. An appraisal of flood risk at a Regional scale was followed by a more detailed analysis of areas where: flood risk at a local authority scale is comparatively low; areas of high flood risk; and areas where high growth is planned (MUAs, SSDs and Government Growth Points). As part of the analysis, flood risk indicators were developed to give more flood risk detail for selected locations in the region. These indicators are useful for a strategic regional overview of flood risk and can be used to develop strategic policies and to guide more detailed local flood risk assessments.

Following the severe floods in summer 2007 and recommendations within the Pitt Review, a key part of the RFRA has been to carry out an initial assessment of the type and number of critical infrastructure assets currently at risk. A baseline assessment of assets currently at risk has been undertaken upon which further work could be carried out to assess the risk and vulnerability of critical infrastructure in the Region, to create a prioritisation schedule for improved protection. Local Resilience Forums (LRFs) could be asked to consider undertaking this work.

For many local authorities within the Region there are localised areas of significantly high flood risk, often coinciding with urban centres which increase the potential consequences of flooding. It is in many of these urban centres that new development is proposed as part of the urban and rural renaissance strategy of the RSS. The findings of this RFRA could be used to inform decisions on whether there are other locations with lower flood risk that could be more appropriate for high levels of development instead. Should the panel report recommend the existing levels of development be proposed in these higher risk areas, then SFRA will be very important in guiding delivery of housing to suitable locations through the application of the Sequential Test and, where required, the Exception Test as set out in PPS25.

In the future, climate change will be a major cause of increased flood risk from all sources across the Region. Flood Zones 2 and 3 are likely to flood more frequently and to a greater depth and where defences exist, it is expected that they may overtop more frequently. CFMPs covering the region have highlighted that it will not be sustainable to build flood defences to protect all risk areas within the Region. In addition, culverts through urban areas may not have the capacity to convey increased river flows, and may be subject to increased residual risk.

Floodplains should be safeguarded from future development and local authorities must apply the Sequential Test to ensure all new development is directed towards Flood Zone 1 in the first instance. Opportunities should be taken to reinstate areas of functional floodplain which have been previously developed and Flood Zones 2 and 3 should be left as open space.

Surface water flood risk presents a major flood risk in the Region, especially in parts of urban areas. It is expected that flood risk from surface water will increase in the future due to the increased incidence of short-duration high-intensity rainfall events associated with summer convective storms. It is currently difficult to accurately predict or quantify surface water flood risks owing to the lack of accurate predictive modelling techniques. New plans and procedures are coming to the fore so that surface water can be taken into account in the planning process and appropriately managed so local risk is reduced and not increased elsewhere.

Local authorities should be aware of the progress made in surface water modelling techniques and undertake Surface Water Management Plans (SWMPs) where high surface water flood risk has been identified. All new development should make allowance for climate change by designing safe and sustainable homes.

The following Local Authorities were identified as locations where, when considering the area and proportion of the Local Authority falling in climate change Flood Zone 3, from a broad perspective flood risk is unlikely to be a limiting factor for future development: Staffordshire Moorlands, Newcastle-under-Lyme, South Shropshire, Bridgnorth, Bromsgrove and Cannock Chase. Although flood risk from fluvial sources was generally perceived as low, flooding from other sources such as surface water was clearly an issue in many of the local authorities, particularly localised flash flooding from rapid runoff from fields. This emphasises the need to consider flood risk from all sources when considering opportunities for new development and scope for mitigation. When considering the area and proportion of these Local Authorities falling in climate change Flood Zone 3, the level of risk posed to these Local Authorities as a whole is low, but they do have local high flood risk and high hazard areas (e.g. Bridgnorth and Ludlow). In these areas, application of the Sequential Test is vital to reducing flood risk on site and at downstream locations. Opportunities to pull back from the river front through regeneration and planning control, providing a riverside green corridor through such areas, should be considered.

Surface water should be appropriately managed in all Flood Zones, with Environmental Stewardship Schemes considered in rural and upland areas to help ensure farming practices help reduce runoff to decrease flood risk in urban areas downstream.

An assessment was made of other constraints to development within low risk areas. For the West Midlands Region, Areas of Outstanding Natural Beauty (AONB) and National Parks present an additional constraint to new development and were therefore considered for the five local authority areas where the inherent flood risk was low. For some areas the reduction in developable area was as high as 70% (Cannock Chase and South Shropshire

Districts). For such areas, opportunities to liaise with adjoining local authorities to accommodate growth should be considered where appropriate.

A further fourteen local authorities were chosen for further assessment owing to their high level of new development proposals and/or high flood risk. There are areas with identified high flood risk which are broadly identified for significant future development. In these instances, opportunities to locate new development in lower flood risk areas, either in the wider authority area or in adjoining local authorities, should be explored by local planning authorities. Should other material planning considerations override the flood risk constraints in these areas, it will be imperative to ensure that sustainable development is achieved through rigorous application of the Sequential Test, and supported by a Level 2 SFRA where the Exception Test needs to be undertaken. In all cases, the policies outlined in relevant CFMPs must be adhered to and surface water must be appropriately managed. For some local authority areas, (e.g. Worcester) it is clear that the proposed level of development will be unsustainable given the high flood risk and the constrained developable land.

It is recommended that for high flood risk/high growth areas where potential flood risk constraints to development have been identified, opportunities to locate future development in lower risk areas in the wider authority or in adjoining local authorities should be sought.

For communities where there is identified flood risk, the focus should be on using redevelopment and new development to reduce flood risk to existing communities from all sources, including residual flood risk. The advice and guidance set out in the relevant CFMPs and SFRAs should be followed to achieve this.

This updated RFRA has provided a broader, more rigorous assessment of flood risk within the West Midlands Region. However, the analysis is limited by a number of uncertainties and assumptions. Information relating to flood risk from all sources is continuously being improved, as are methods for predicting flood risk. This RFRA should therefore be considered as a 'living' document and it is recommended that it is updated on an annual basis to ensure the most up-to-date information is used to guide strategic planning.