

Introduction

1 Introduction

Faber Maunsell has been commissioned by Chesterfield Borough Council, Bolsover District Council and North East Derbyshire District Council to produce a Strategic Flood Risk Assessment (SFRA) to cover the three districts. The catchment area is shown in Figure 1. A joint study offers the benefit of reviewing flood risk and the potential for new development at a much wider scale. This recognises the nature of river catchments which cross administrative boundaries. Local Planning Authorities (LPAs) are encouraged to work in partnership to develop SFRA's at a sub regional level in national planning guidance.

The SFRA is required to provide a sound and robust evidence base for the preparation of each LPA's Local Development Framework (LDF). The LDF will comprise a portfolio of Local Development Documents which (together with the Regional Spatial Strategy) will provide the planning framework for the LPAs. The final SFRA will play a critical role in informing future planning decisions, policies, proposals and potential development sites with respect to all forms of flooding in the districts. This includes flooding from rivers and the sea, flooding from groundwater, land drainage, sewerage and other artificial forms of flooding. However, due to the catchment's proximity to the sea, there is no risk from tidal flooding.

The SFRA is based on the best available information at the time the study took place (September 2007).

The SFRA has been undertaken and structured to meet the requirements of national planning policy in Planning Policy Statement 25: Development and Flood Risk (December 2006) and the accompanying 'living draft' Practice Guide (February 2007).¹ Further details are provided in the methodology section of this report.

1.1

The need for a SFRA

Flooding is a natural hazard that puts people's lives at risk, causes immeasurable stress to the people affected and has an economic impact that can cost billions of pounds just from one event. Recent flooding in the UK (summer 2007) has emphasised the possible scale of flooding, in extent and impact, that can occur in the UK.

However it should be remembered that flooding is a natural process which cannot be stopped altogether and therefore tackling flooding is more than just defending against floods. It means understanding the complex causes of flooding and taking co-ordinated action in partnership with others to reduce the impact of floods.

Over the last century and in more recent times, pressures for development have resulted in the widespread development of floodplains. There is now increased pressure to develop in the floodplain but every effort should be made to ensure development only takes place in areas least at risk or constructed safely and not increasing risk either on the proposed site or elsewhere.

Producing a SFRA will allow the LPA to make more informed judgements about potential development sites in the LDF, and decisions on planning applications. In relation to flood risk a SFRA will also allow the LPA to consider flooding on a catchment scale rather than on a case by case basis. Strategic decisions can therefore be made on where development is most appropriate in relation to flood risk, taking into account climate change.

Guidance has been developed to enable the LPA to consider flood risk and drainage when considering strategic and site specific development. The government guidance in relation to flood risk is Planning Policy Statement 25: Development and Flood Risk (Communities and Local Government, Dec 2006) and Development and Flood Risk: A Practice Guide Companion to PPS25 'Living Draft' (Communities and Local Government, Feb 2007). The latter has been replaced with PPS25: Development and Flood Risk – (June 2008). Section 2.2 provides more information on PPS25.

¹ Updated by PPS 25 Practice Guide as this report was in its final draft stage.

The PPS25 living draft requires that a SFRA should be carried out by the LPA to inform the preparation of its Local Development Documents (LDDs), having regard to catchment-wide flooding issues which affect the area.

1.2

SFRA Objectives

The SFRA should provide sufficient data and information to enable the LPA to apply the Sequential Test to potential future development sites and, where necessary, the Exception Test. In addition, the SFRA should allow LPAs to:

- meet the requirements of Annex E, PPS25 and the living draft Companion Guide.
- prepare appropriate policies for the management of flood risk within the LDDs
- inform the sustainability appraisal so that flood risk is taken account within the wider context of sustainable development when considering options and in the preparation of strategic land use policies. This includes informing potential development sites through the LDF process.
- identify the level of detail required for FRAs in particular locations, and
- enable them to determine the acceptability of flood risk in relation to emergency planning capability. (PPS25)

1.3

Planning Policy

Development Plan Documents are one part of a Local Authority's (LA's) Local Development Framework. LPAs are required, under the Planning and Compulsory Purchase Act 2004, to prepare a Local Development Framework (LDF). The LDF is made up of a portfolio of Local Development Documents (LDDs), which collectively delivers the spatial planning strategy for the LPA's area. LDDs should reflect Government guidance regarding sustainable development. This includes the guidance within PPS25 Development and Flood Risk. This guidance aims to avoid placing new development, of a type which is incompatible with flooding, in areas at risk of flooding.

LPAs should ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding. Where new development is exceptionally necessary in such areas, the policies are to make it safe without increasing the risk elsewhere and where possible reducing overall risk.

Key development planning tools that are used to implement PPS25 at different scales are summarised in Table 1.

Table 1: Key development planning tools in PPS25 (taken from PPS25)

| Scale | FRA techniques | Decision-making tools |
|------------------------------------|---|------------------------------------|
| Regional Spatial Strategy (RSS) | Regional Flood Risk Appraisal (RFRA) | Sequential Approach |
| Local Development Documents (LDDs) | SFRA and Area FRAs | Sequential Test and Exception Test |
| Individual Planning Applications | FRA (including Drainage Impact Assessments) | |

Figure 1: SFRA Study Area Showing Main Rivers

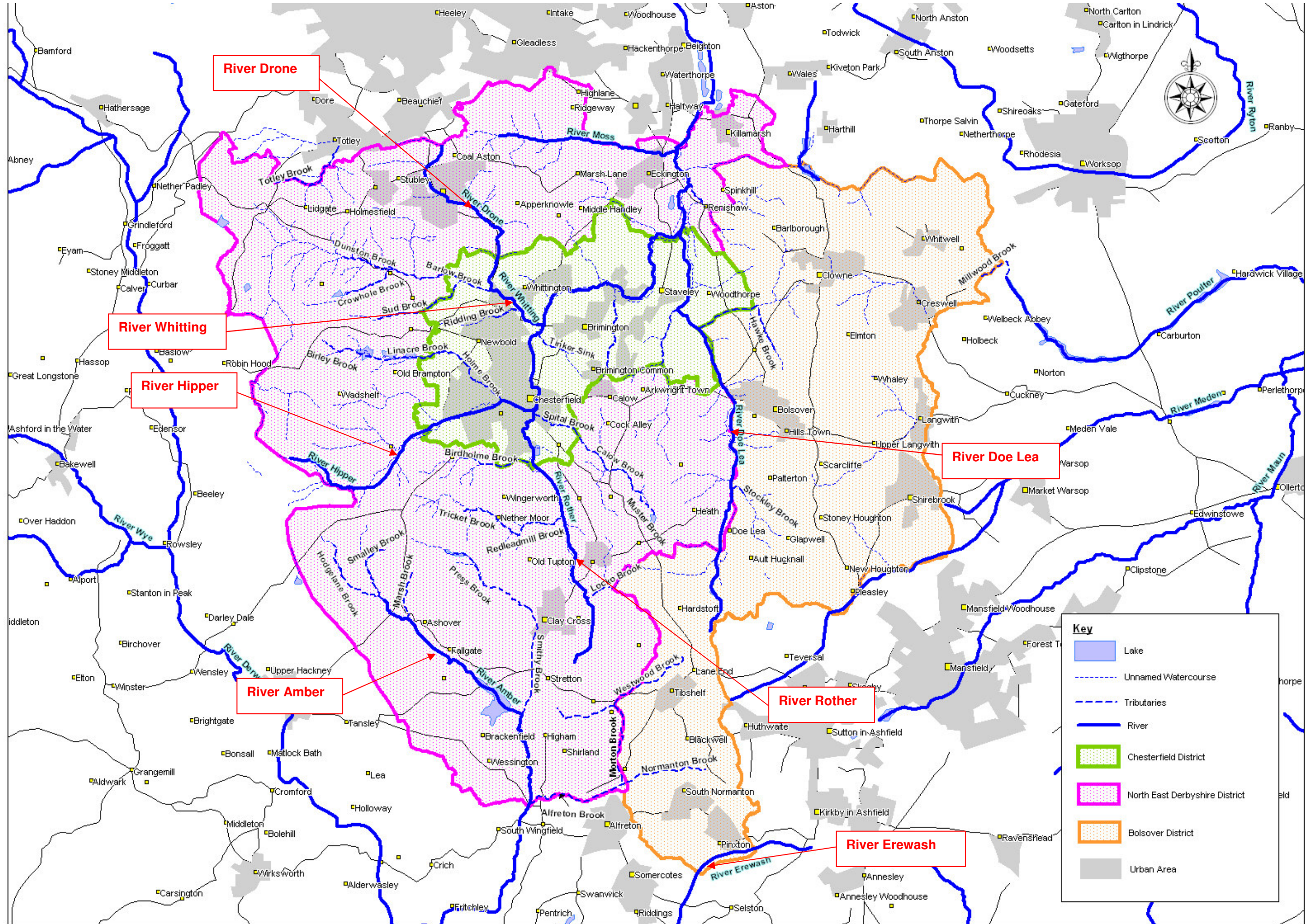
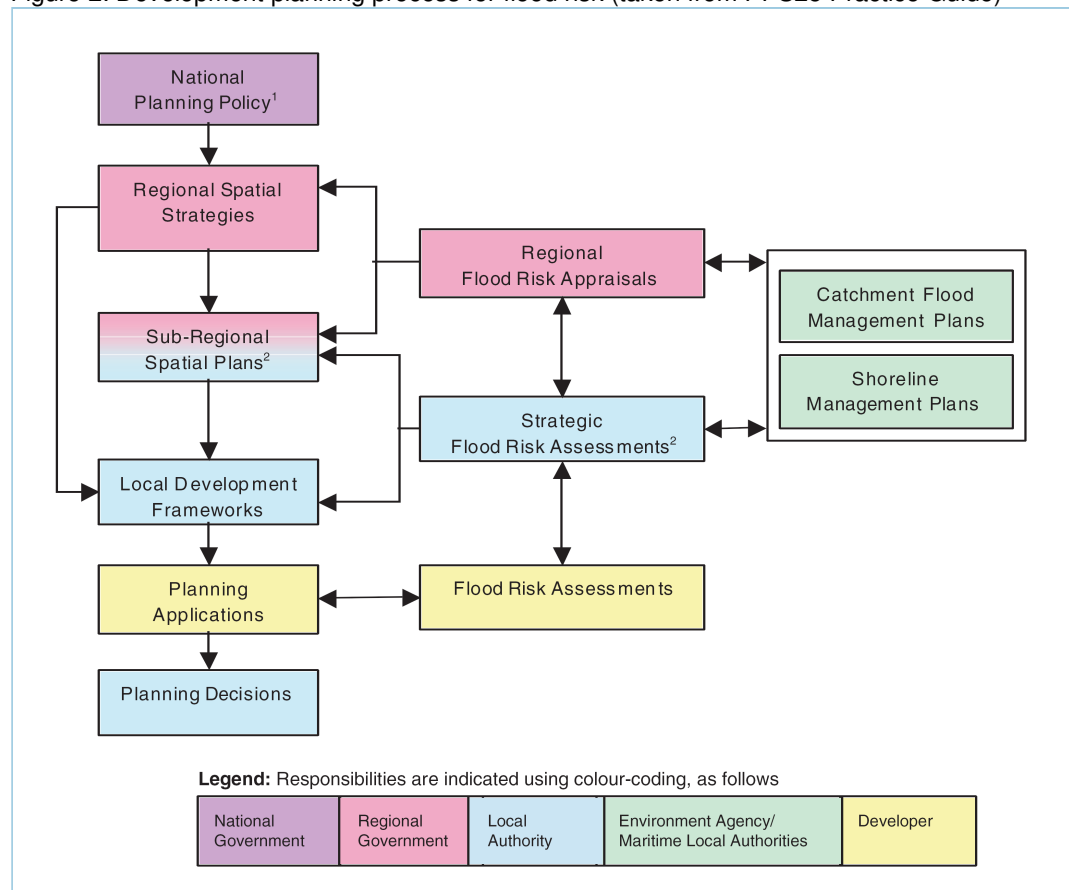


Figure 2 shows the links between strategy documents (including flood and coastal defence documents) and SFRA's and also indicates who is responsible for them.

Figure 2: Development planning process for flood risk (taken from PPS25 Practice Guide)



Notes

1 Including Planning Policy Statement 25 'Development and Flood Risk' and the other flooding-related national planning policies listed in Appendix A of this Practice Guide.

2 SFRA's may cover more than one LPA, and the adoption of a catchment-based approach by a number of LPAs working in partnership could be highly beneficial.

3 This diagram has been developed from the original within Flood Risk Assessment Guidance for New Development Phase 2 R&D technical report FD2320/TR2 (Defra and EA, 2005).

1.3.1

Planning Policy Statement 25

PPS25 requires that a sequential approach to the location of new development is applied. This is done by the application of the Sequential Test (see Annex D of PPS25). The Sequential Test should aim to steer new development to Flood Zone 1 (see section 2.3 of this report for Flood Zone definitions). Where there are no reasonably available sites in Flood Zone 1, taking into account the flood risk vulnerability of land uses, sites can be allocated 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 suitability of sites in Flood Zone 3, taking into account the flood vulnerability of land uses and applying the Exception Test if required.

The SFRA provides evidence to produce an initial Sequential Test for the potential future development sites provided by the LPAs. The SFRA also provides evidence which will allow the local authorities to assess any future development sites in terms of flood risk and produce their Local Development Documents. The evidence includes levels of flood vulnerability in Flood Zone 3 and the impact of climate change.

1.3.2 *Responsibility for LPA*

1.3.2.1 A) Policy formulation / Local Development Framework

Local Development Documents (LDDs) are mechanisms for ensuring that flood risk is factored into the detailed allocation of land use types across an area in accordance with national and regional policy, but also taking account of specific local issues and concerns. They provide an opportunity to provide clarification to prospective developers in the form of clear policies for the management of flood risk, as well as guidance on how flood risk issues should be addressed at sites allocated within flood risk areas. The Sequential Test and Exception Test should be applied in the site allocation process.

The LDD should contain clear, strategic and robust policies for flood risk management. The SFRA should provide the basis for these policies. The Development Planning Document (DPD) and some Supplementary Planning Documents (SPDs) within the LDD should be informed, through the SFRA, of specific flood risk related issues that should be taken into account for certain potential future development sites.

Figure 3 (see following page) from PPS25 further explains the process and links to the LDF.

This SFRA includes flood risk policies and recommendations for sustainable drainage for sites (See Section 9). The SFRA also provides evidence for an initial Sequential Test for existing potential future development sites and information which should allow the LPA to perform the Sequential Test on any future potential development sites. Locations where the Exception Test is required are also identified. Advice on the necessary scope of a FRA is included in the SFRA as well as other flood risk issues to be considered.

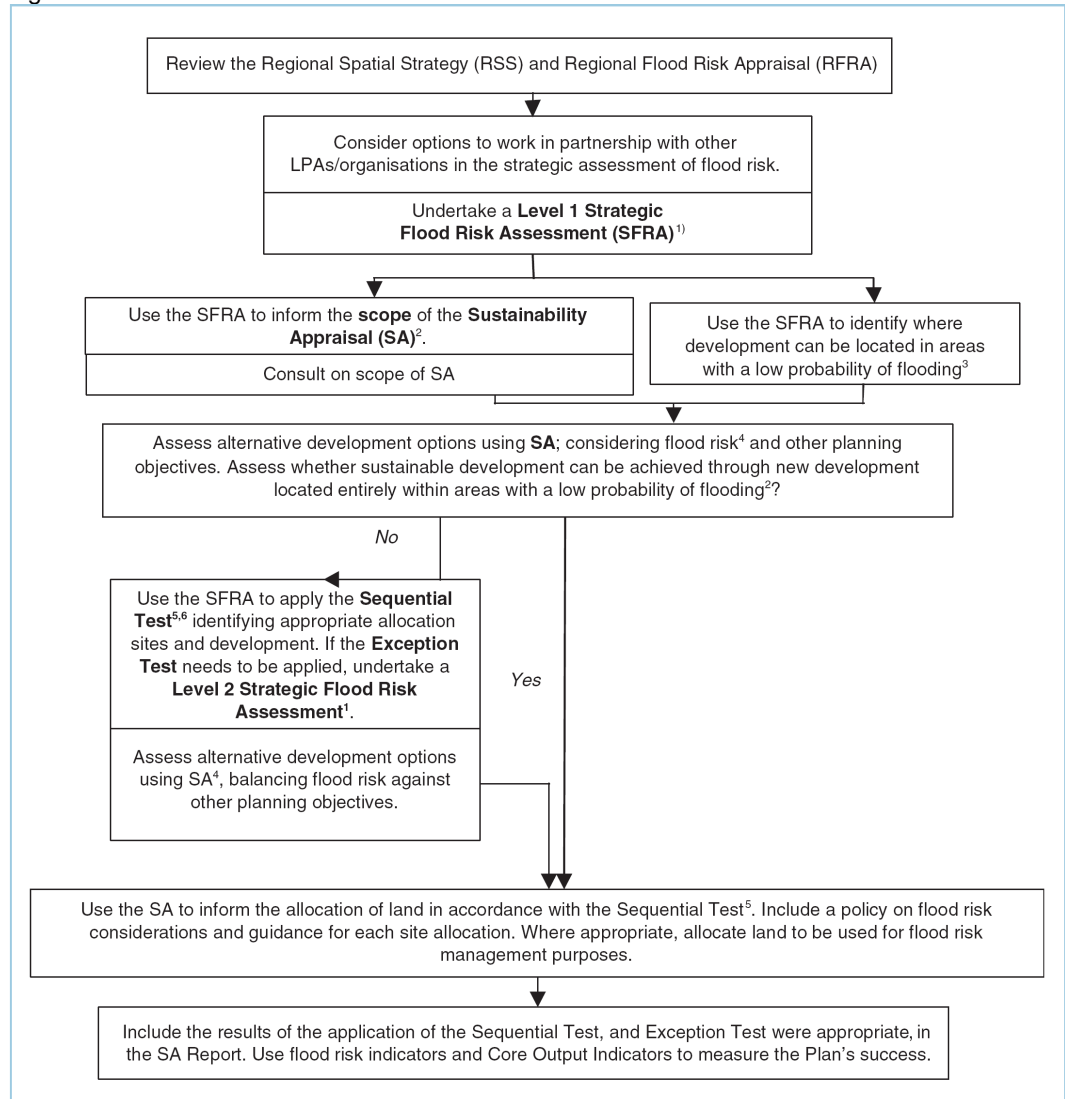
1.3.2.2 B) Development control and planning applications

The LPA is the principal decision-maker regarding applications for new development. LPAs should seek to engage in pre-application discussions with any developer expressing an interest in submitting a planning application for a site that is in an area at risk of flooding or which has potential to increase flood risk elsewhere. Specifically the LPA should:

- refer the developer to the SFRA and any planning policies of relevance to flood risk at the site, including policies or guidance on the application of sustainable drainage measures.
- if the site is allocated for a particular use in the LDF, inform the developer as to whether the Sequential Test and/or Exception Test has already been applied through the site allocation process undertaken during preparation of the DPD. If the development site does not comply with the Sequential Test and/or Exception test, clarify the specific supporting information required to allow the LPA to apply the Sequential or Exception Test as part of the individual planning application process.
- advise the developer on the need for a FRA and consultation with Environment Agency and/or other flood risk consultees.
- set out and agree the scope for the FRA using the Environment Agency Standing Advice, or in direct consultation with the Environment Agency and any relevant flood risk consultees, as appropriate.
- encourage pre-application discussions with the identified flood risk consultees (such as the Environment Agency) to ensure flood risk issues are resolved prior to submission of the planning application.

This process is summarised in Figure 4 (see page 23) which is taken from PPS25's practice guide.

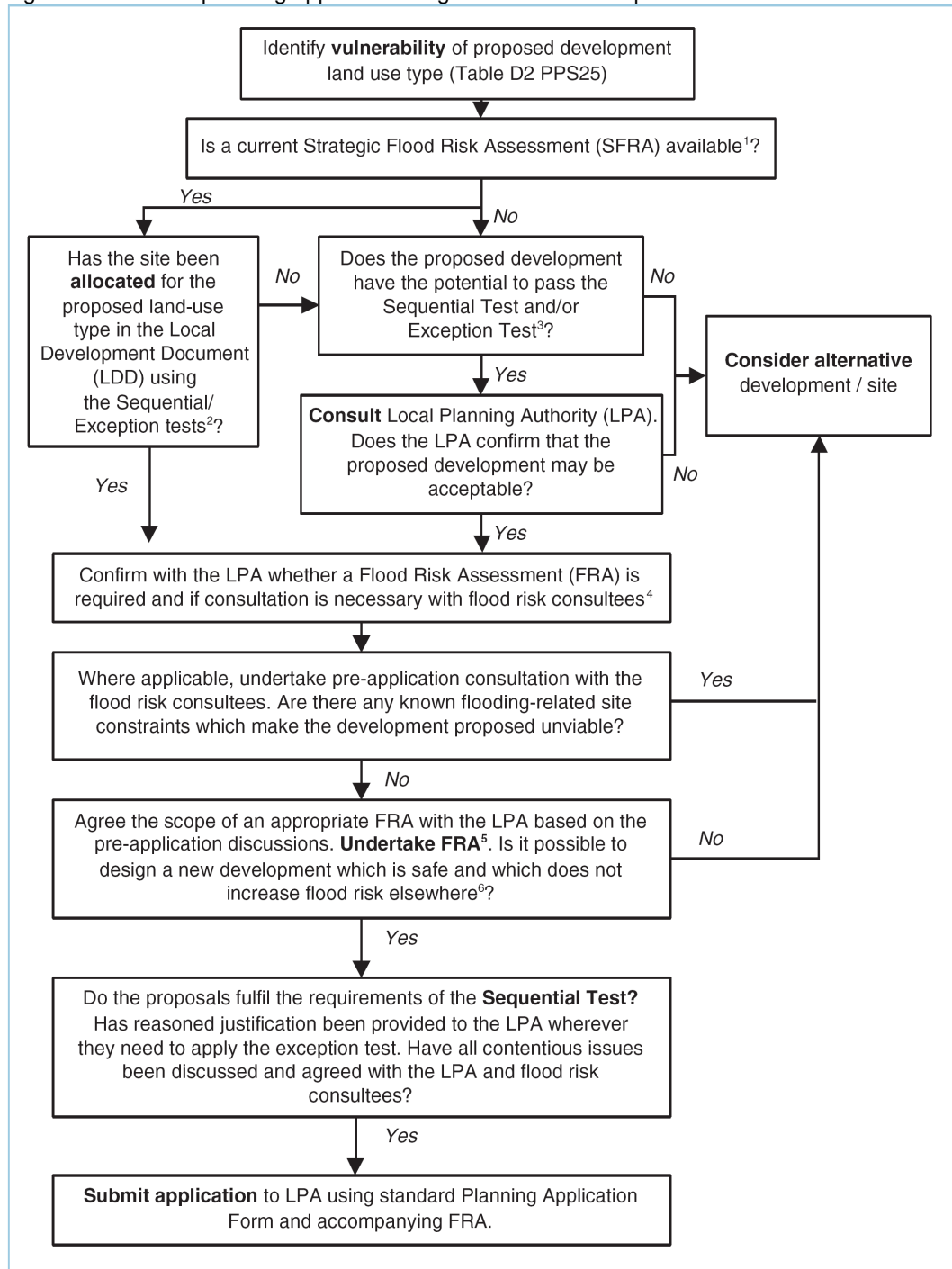
Figure 3: Process and links to the LDF from PPS25



Notes

- 1 Guidance on undertaking a SFRA can be found in Chapter 2 of this Practice Guide.
- 2 Guidance on developing the scope of SA can be found in ODPM (2005) Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents. Guidance on suitable flood risk indicators can be found in FD2320, D2.1.
- 3 Flood Zone 1 for fluvial and tidal flooding and with a low risk of flooding from other sources.
- 4 Including an assessment of the potential effect of proposed development on surface water run-off.
- 5 Including consideration of the variability of flood risk within a Zone.

Figure 4: Individual planning applications – guidance for developers from PPS25



1.4

Methodology

The SFRA is structured into four phases to meet the requirements of Annex E, PPS25 and the 'living draft' Companion Guide.

Data Collection

Data Collection and identifying areas at risk of flooding (theoretical and actual) from rivers, groundwater, land drainage, sewerage, and other artificial sources e.g. reservoirs and canals having regard to defences, topography and topographic features. A primary task of the SFRA was to evaluate all existing data, identifying any gaps or inadequacies in the datasets. The data collected and analysis completed has been used to inform the SFRA.

Assessment of Flood Risk

Assess the impact of external factors on flood risk including land management practices, climate change on flood risk for future horizons e.g. 25 year and 50 year flood risk zones, increased runoff and flood defence failure. Flood risk locations have been collected and mapped. In addition, any other information such as historic flood outlines and defended areas have been collected and mapped. Climate change flood extents have been produced where information is available. The level of risk within flood extents and the level of hazard to people will be assessed where there is existing modelling data to do so. More details on the maps produced can be seen in section 6.1. In addition, further information on the types of flood mapping available is in Section 2.3

It is necessary to identify areas of flood risk outside of Flood Zones 2 and 3. PPS25 requires that FRAs look at all sources of flood risk not just from fluvial sources. During the SFRA information on flood risk problem locations has been collected from knowledge holders in the Environment Agency, LPAs, and water companies. This information has been put into a database, each entry has a reference. These locations have been mapped in GIS so that it can be seen if a potential development site could be at risk from one of these other sources of flood risk.

Assessment of mitigation measures

Consultation with the Environment Agency and the LPA to ensure that policies are drafted with regard to their procedures and policies for responding to Flood Risk Assessments. The SFRA has been completed in close communication with the Environment Agency. The Environment Agency attended progress meetings where technical issues have been discussed. The Environment Agency has also been available throughout the study for guidance to ensure the SFRA is completed in line with their objectives for flood risk management and planning. This also includes the development of flood risk policies for the LPAs.

Reporting and providing guidance

Reporting which includes the preparation of a matrix of flood risk in each area (which includes recommendations on mitigation measures to bring development forward), identification of ongoing or further analysis necessary to build on and reinforce the knowledge base. A flood risk matrix has been developed. This lists current housing, employment and major mixed use development sites and assesses them against all the information gathered. This includes flood extents, historic flood maps, flood defences, flood risk locations from other sources and flood hazard. The matrix will form the basis for further analysis by the LPA of future potential development sites being considered for the LPA's LDF. This is included in the addendum of this SFRA.

1.5

The Study Area

The main population centres in the Study Area are Chesterfield, Bolsover, Dronfield, Shirebrook, South Normanton, Clowne, Creswell, Renishaw, Killamarsh, Staveley, Clay Cross and Eckington, although there are also numerous other villages (See Figure 1).

A number of rivers serve the area namely the Rother, Hipper, Doe Lea, Drone, Whitting, Erewash and Amber and tributaries.

In addition, the Chesterfield Canal Trust has been active in restoring a section of the Chesterfield Canal between Chesterfield and Staveley.

Most rivers drain northwards into the River Rother ultimately flowing into the River Don, with the main exceptions being the River Amber which drains south into the River Derwent, and the River Erewash which drains south to the River Trent.

The Rother is an extensively managed river to protect downstream communities including Rotherham and Doncaster. The EA's model of the river should reflect the operation of the river in relation to flood risk.

As stated in Section 1, SFRAs are required to consider all aspects of flooding. The floods of July 2007 in South Yorkshire, North East Derbyshire, Nottinghamshire and the Midlands have further highlighted the need to include an assessment of flooding at all levels of the planning process. The locations of historical flooding have been considered as part of this report. Flood risk issues from reservoirs were also graphically illustrated with the near failure of the Ulley Dam in the Rotherham area and flooding from surface water drainage was evidenced in many areas, for example Chesterfield and Killamarsh.

The Regional Flood Risk Appraisal states that only Chesterfield (of the three councils) expects any development to take place on Flood Risk Zone 3 land. In central Chesterfield a few development sites have been identified which are partly brownfield land and partly in Flood Zone 3. It is stated in the RFRA that the intention of these regeneration schemes will not include built development on those sections of the sites identified as lying within Flood Zone 3 and will attract developer contributions to flood management schemes.