Strategic Flood Risk Assessment
Non-technical summary
August 2015
1. Taking account of flood risk management across Northamptonshire

1.1 Local Plans should be supported by Strategic Flood Risk Assessment (SFRA) in accordance with the National Planning Policy Framework, NPPF (paragraph 100).

1.2 A SFRA is a study carried out by one or more local planning authorities to assess the risk to an area from flooding from all sources, now and in the future, taking account of the impacts of climate change, and to assess the impact that changes or development in the area will have on flood risk. The findings of the SFRA should be used to ensure that flood risk is considered at a strategic level to inform land use planning.

1.3 SFRA’s have been undertaken by each of the District or Borough Councils for their administrative area within Northamptonshire, producing flood risk maps that provide coverage across the county (to varying scales). These have been combined (and updated where necessary) for both North Northamptonshire (comprising Corby, Kettering, Wellingborough and East Northamptonshire Councils) and West Northamptonshire (comprising Daventry, Northampton and South Northamptonshire Councils) Joint Planning Units (JPU’s); of which the County Council is also a member. This report acts as a non-technical summary of SFRA’s across the county and how these have informed the plan-making process.

1.4 The Northamptonshire Local Flood Risk Management Strategy (LFRMS) (October 2013) and LFRMS Action Plan Update (October 2014), provide a robust local framework that employs a full range of complementary approaches towards managing and communicating the risks and consequences of flooding arising from surface runoff, groundwater and ordinary watercourses in Northamptonshire and the surrounding area. The LFRMS also includes an Action Plan to highlight and assist in delivery of its objectives, such actions cover measures such as updating of studies/strategies and identification of flood alleviation schemes to be investigated.

1.5 The North Northamptonshire Flood Risk Management Study 2012 and West Northamptonshire Strategic Flood Risk Assessment 2009 found that the main sources of flooding within North Northamptonshire are fluvial and surface water, and within West Northamptonshire is fluvial. The risk of groundwater flooding was generally found to be low however consideration of the potential effects of groundwater flooding should be considered as part of any site-specific flood risk assessment. In some areas (Kettering, Corby and East Northants) sewer flooding was also identified as an (localised) issue.

1.6 The LFRMS provides an overview of flood risk in the County (paragraph 2.30) “The nature of flood risk within Northamptonshire is extremely varied and widespread across the county. Northamptonshire has an extensive network of rivers and canals, combined with a large number of towns and extremely rural surroundings. This means that Northamptonshire is therefore at risk of flooding from a range of different sources.” The main watercourses in west and north Northamptonshire are summarised below (taken from paragraph 2.31 to 2.37 of the LFRMS):

- Watercourses in West Northamptonshire

  The main rivers within West Northamptonshire drain from west to east with the exception of the River Cherwell, which flows from north to south. The River Nene, River Great Ouse (including River Tove), River Cherwell and their tributaries all rise within West Northamptonshire. The upper reaches of these catchments are classed as being ‘flashy’ due to the underlying hard rock geology, leading to relatively short catchment response times. In addition to the above watercourses there are also interactions with the Grand Union Canal (with River Nene) and the Oxford Canal (with River Cherwell). The catchment of the River Nene covers the majority of Daventry District and the Borough of Northampton. Northampton lies at the confluence of the River Nene’s main upper tributaries, which include the Kislingbury Branch, the Brampton Branch and Wootton Brook. Through Northampton, the river is defended and the Northampton Washlands and Upton flood attenuation area compensate for the effect of upstream development on flow downstream. The Washlands consist of an area of former gravel workings into which floodwaters are diverted and stored for controlled release when required.
The Great Ouse river system starts in Northamptonshire (near Brackley), passing through Buckingham, Newport Pagnell, Bedford, St Neots, St Ives and Earith before crossing the Fens and flowing into The Wash.

The River Cherwell rises at Hellidon to the south east of Daventry, flowing in a southerly direction through parts of Daventry District and South Northamptonshire.

- Watercourses in North Northamptonshire

The vast majority of North Northamptonshire is located within the River Nene catchment. The northern extents fall within the River Welland catchment and the south eastern extent is located within the Great Ouse catchment. The principal watercourses in North Northamptonshire are: the River Nene and its main tributaries, the River Ise, Harpers Brook, Alledge Brook, Slade Brook and Willow Brook; and the River Welland and its main tributary the River Jordan.

1.7 The LFRMS / SFRA’s and studies addressed the potential impacts of climate change to varying levels.

1.8 With the impact of future climate change, the risk in terms of fluvial flood risk is set to increase, highlighting the importance of strategic flood attenuation measures and incorporating sustainable urban drainage systems (SuDS) with new development. The LFRMS / SFRA’s and studies also identified flood storage opportunities associated with mineral extraction, particularly along the River Nene corridor.

1.9 The effects of climate change may also place further pressure on sewer systems with predictions of milder wetter winters and increased rainfall intensity in summer months. This combination is likely to result in more frequent sewer flooding and may require increased treatment capacity (to be assessed in line with new development); reflected in Water Cycle Strategies undertaken across the county.

1.10 The Minerals and Waste Local Plan (MWLP) was adopted on 1 October 2014. The MWLP brought together and updated the Minerals and Waste Development Framework (MWDF) which was portfolio of individual documents known as Local Development Documents (LDDs) adopted in 2010 and 2011. These comprised a Core Strategy, site-specific documents for minerals and waste and a document comprising policies on which to determine planning applications. The MWLP rolled the statutory components of the MWDF into one combined document and extended the plan period from 2026 to 2031. The scope of the partial review did not include allocations.

1.11 Although the MWLP is currently up-to-date and fully compliant with the NPPF, it needs to remain so. The MWLP Update will concentrate on the minerals and waste allocations and designations and the approach taken to these, particularly regarding waste sites. In addition recent local circumstance have brought forward a need to provide more comprehensive coverage of fire safety for waste development. The update offers a timely opportunity to cover this specific matter.

1.12 One of the main components of the plan concerned with flood risk management include the spatial strategies. The spatial strategies are not included in the scope of the Update and were found to be 'sound' through the MWDF plan-making and examination process, and also gave due consideration to flood risk management (in line with the national policy requirements).

1.13 Relevant flood risk strategies/studies were taken into account through the MWLP plan making process as outline below.

- Inform the County Council’s knowledge of flooding, refine flood mapping, determine the variations in flood risk from all sources of flooding across and from the county and prepare appropriate policies for flood risk management.

This was done by collating and giving due consideration to the strategies/studies undertaken and EA flood mapping as well as other relevant reports and data sets (listed in Appendix 1). The SFRA’s were also used as the basis for identifying the policy approach for flood risk management relating to minerals and waste development. For the MWLP this included development of the policy approach for flood attenuation measures to be identified through restoration schemes, particularly for minerals, to address local flood risk issues where appropriate – this was set out in the policies related to restoration and after-use (Policy 28).
This approach was reviewed in line with updated strategies/studies recently published, and is still considered to be an appropriate approach. The strategies/studies are also used in the development control process.

- Inform the Sustainability Appraisal of the Update.

This was done by incorporating the strategies/studies into the SA process (e.g. identification of relevant reports and subsequent flood risk issues and SA objectives) and the Sequential Test into the site assessment methodology (a key tool used to identify allocations taken forward through the plan making process).

1.14 The other main component of the plan concerned with flood risk management are the allocations and designations, which form the main elements subject to review through the MWLP Update. The SFRA’s and EA mapping will be used to provide the basis from which to apply the Sequential and Exception Tests in assessing potential sites for minerals and waste related development. New sites will be subject to the Sequential and Exception Tests through the MWLP Update process. The Sequential and Exception Tests have been incorporated into the site assessment methodology during Stage 2 which informs the selection of sites taken forward to the Draft Plan stage.

Application of the Sequential Test

1.15 The NPPF requires Local Plans to apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change. The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding.

1.16 Allocations in the adopted MWLP were previously subject to the Sequential Test (as part of the MWDF plan-making process). The conclusion of which was that all sites carried forward as allocations within the MWDF were determined to pass the sequential test. There was no need to apply the Exception Test. The adopted allocations were cross-checked against the most recent EA flood maps (2015) in preparing the Draft Plan; no significant difference was identified that would warrant further assessment. Any proposal on an allocated site affected by flooding would be required to include a site specific flood risk assessment which would accompany the planning application.

1.17 New sites identified through the MWLP Update process that are being proposed as allocations include:

- sand and gravel – Passenham Eastern Extension and Elton Extension,
- crushed rock (limestone) – Pury End Quarry Extension, Harlestone Quarry Extension and Easton Lodge, and
- waste – WL18 (boundary amendment).

1.18 All of the sites were determined to pass the Sequential Test, as such there was no need to apply the Exception Test.

1.19 Only the winning of minerals is deemed a water compatible land use. Ancillary activities (e.g. processing, vehicle handling, stockpiling, noise/amenity bunds, offices, etc) are able to be located on parts of the sites, or on other associated sites (e.g. minerals may be worked at one site and transported to a nearby existing plant for processing), that are subject to lower levels of flood risk.

1.20 Often the ancillary elements of extraction have the greatest impact on flood risk as such the planning of these elements must be subject to the results of a site specific flood risk assessment which would accompany the planning application. The construction of any structure that would impede floodplain flows would not be supported. The Environment Agency recommend a stand-off distance of 30 m from main rivers.

Accounting for climate change

1.21 The National Planning Policy Guidance (NPPG) sets out flood risk vulnerability classifications, of relevance to minerals and waste planning:

- Sand and gravel working is classified as water-compatible development.
- Waste treatment (except landfill and hazardous waste facilities), minerals working and processing (except for sand and gravel working), water treatment works (which do not need to remain operational during times of flood) and sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place) are classified as less vulnerable.

- Landfill and sites used for waste management facilities for hazardous waste are classified as more vulnerable.

1.22 The table below shows the NPPG flood risk vulnerability and flood zone ‘compatibility’ (NPPG paragraph 067).

<table>
<thead>
<tr>
<th>Flood zone (see table 1)</th>
<th>Flood vulnerability classification (see table 2)</th>
<th>Essential infrastructure</th>
<th>Water compatible</th>
<th>Highly vulnerable</th>
<th>More vulnerable</th>
<th>Less vulnerable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Zone 2</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>Exception Test required</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Zone 3a</td>
<td>Exception Test required</td>
<td>✓</td>
<td>×</td>
<td>Exception Test required</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Zone 3b</td>
<td>Exception Test required</td>
<td>✓</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
- ✓ Development is appropriate.
- × Development should not be permitted.

1.23 Sensitivity testing of the flood map produced by the Environment Agency, using the 20 per cent from 2025 to 2115 allowance for peak flows, suggests that changes in the extent of inundation are negligible in well-defined floodplains, but can be dramatic in very flat areas. However, changes in the depth of flooding under the same allowance will reduce the return period of a given flood. This means that a site currently located within a lower risk zone (e.g. Zone 2) could in future be re-classified as lying within a higher risk zone (e.g. Zone 3a). This in turn could have implications for the type of development that is appropriate according to its vulnerability to flooding.

1.24 This means that for ‘water compatible development’ (i.e. sand and gravel working), even if the flood risk increases (re-classifying the current zone to a higher risk zone e.g. Zone 2 could increase to Zone 3a) development would still be considered appropriate. The MWLP Update Draft Plan allocations include four minerals sites that area located within Zones 2 and 3; all of which are for sand and gravel working.

1.25 For ‘less vulnerable’ development the flood zone would need to be upgraded to Zone 3b before development could not be permitted. The ancillary activities of the above noted mineral sites would be able to be accommodated on parts of the site subject to lower levels of flood risk and in some cases the mineral processed off-site (e.g. at an existing associated plant). One of the allocated sites for integrated waste development is identified as being within Zone 2 and fourteen of the industrial area locations for waste management use are identified as being within Zone 2 and 3 (all are classified as classified as ‘less vulnerable’). These sites either have only a very small section of the site identified as Zones 2 and 3 (the majority being Zone 1 – the lowest risk) or have sufficient area to allow for built development to be located so as to avoid the higher flood zone areas. Should the flood zone increase it would be unlikely to result in the development falling into the category of ‘should not be permitted’. The majority of the industrial area designation in Northampton – St. James / Far Cotton (WL6) is subject to Zones 2 and 3,
development within this designation should be directed towards areas of lower flood risk (Zone 1 and 2) as development within areas identified as Zone 3a may not be appropriate should the flood risk increase to a Zone 3b – in which case development would be categorised as ‘should not be permitted’.

1.26 No landfills or sites used for waste management facilities for hazardous waste allocated through the MWLP are located within Zone 2 or 3.

Flood risk mapping

1.27 The County Council maintains an up-to-date flood risk map (in line with the EA dataset releases) through its online interactive Proposals Map, available to view through Councils website (http://northamptonshire.opus3.co.uk/ldf/maps).
Appendix 1: Flood and water related studies and strategies for Northamptonshire

Northamptonshire-wide related work
Northamptonshire Multi-Agency Flood Plan - procedures relating to support the multi-agency response to and recover from flooding - August 2011.
Northamptonshire Community Flood Risk Summary - A Summary analysis of relative flood risk across Northamptonshire in support of the Multi-Agency Flood Plan - September 2011.
Nene Flood Storage Study - August 2011.
Environment Agency Flood maps and datasets - 2014/15.

North Northamptonshire SFRA’s and related work
Corby Borough Council Strategic Flood Risk Assessment. Stage 2 - Study Update 2011.
Corby Flood Risk Management Study - January 2015.
East Northamptonshire Council Level 1 Strategic Flood Risk Assessment - Review and Update. August 2011.
North Northamptonshire Flood Risk Management Study Update - April 2012.

West Northamptonshire SFRA’s and related work

**Catchment Flood Management Plans**


**River Basin Management Plans**


**National**


**Emerging documents**

In addition there are a number of emerging documents that will be taken into consideration in due course:

East Northamptonshire Surface Water Management Plan

Wellingborough Surface Water Management Plan

Kettering Town Surface Water Management Plan

Northampton Surface Water Management Plan

South Northamptonshire Surface Water Management Plan

Daventry Surface Water Management Plan