Broads Authority
Planning Committee
10 November 2017
Agenda Item No 13

Most of Norfolk Strategic Flood Risk Assessment
Report by Planning Policy Officer

Summary:	This report introduces the Strategic Flood Risk Assessment completed for most of Norfolk Local Planning Authorities**.**
Recommendation:	Members are requested to note this important piece of evidence that supports the Local Plan**.**

1 Introduction

1.1 As part of the preparation of the evidence to support the Local Plan for the Broads, the Broads Authority has worked together with the other Norfolk constituent District Councils[1] to commission consultants to produce a Strategic Flood Risk Assessment (SFRA).

1.2 There will actually be four SFRAs that cover the Broads Authority Executive Area: one for Great Yarmouth, one for North Norfolk and one covering the area of the Greater Norwich Authorities. Waveney District Council is producing a SFRA on their own; it will cover the entire Waveney District Area including that part which is the Broads[2].

1.3 This report relates to the relevant Norfolk SFRAs.

1.4 Please note that at the time of writing this report, the Environment Agency had not agreed the SFRA. That being said, the Environment Agency have been part of the project team for the SFRA and have therefore been kept informed of the SFRA's findings and indeed commented on the SFRA at the relevant stages. An update on this will be given verbally at Planning Committee.

2 What is a SFRA?

2.1 A Strategic Flood Risk Assessment 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 land use changes and development in the area will have on flood risk. One of the main outputs of such a study is the identification of the flood risk zones that are needed in planning – 1, 2, 3a and 3b plus climate change.

[1] Great Yarmouth, North Norfolk, South Norfolk, Broadland, Norwich as well as King's Lynn and West Norfolk. Please note that Breckland Council produced its own SFRA.

[2] The Waveney SFRA was at final draft stage at the time of writing this report and it is intended to bring the Waveney SFRA to the December or January Planning Committee.

2.2 This particular SFRA does not model flooding itself; but brings together the many flood model outputs that have been competed around Norfolk. SFRAs are high-level strategic documents and, as such, do not go into detail on an individual site-specific basis.

2.3 More detailed information about a SFRA can be found on the NPPG webpages (https://www.gov.uk/guidance/flood-risk-and-coastal-change#Strategic-Flood-Risk-Assessment-section).

2.4 The key objectives of the 2017 Strategic Flood Risk Assessment are:

- To provide up to date information and guidance on flood risk for the area taking into account the latest flood risk information and the current state of national planning policy;
- To determine the variations in risk from all sources of flooding in the area, taking into account climate change;
- To identify the requirements for site-specific flood risk assessments;
- To consider opportunities to reduce flood risk to existing communities and developments;
- To enable the local authorities to apply the Sequential Test;
- To aid authorities in identifying when the Exception Test is required and when a more detailed Level 2 SFRA will be required, when determining strategic site allocations; and,
- To inform the Sustainability Appraisal of the authorities' Local Plans, so that flood risk is taken into account when considering strategic site allocations.

3 What the SFRA says

3.1 SFRAs are high-level strategic documents and, as such, do not go into detail on an individual site-specific basis. The 2017 SFRA has been developed using the best available information, supplied at the time of preparation, taking into account the latest flood risk information and the current state of national planning policy. The SFRA addresses the following issues/topic areas:

a) General background. The SFRA looks at historical flooding events as well as flood and coastal defences in the area.

b) Dry islands. The reports looks into these areas of lower flood risk surrounded by higher flood risk (and therefore at times of flood, would effectively be an island). These are important as a certain type of development compatible with the lower flood risk zone could be permitted, but would not necessarily have a safe access or egress at times of flood. Members will recall that we address this in the supporting text of the flood risk section of the Local Plan.

c) Flood zones. The SFRA produces maps that show the predicted extent of flood zone 1, 2, 3a and 3b.

Zone	Probability	Description
Zone 1	Low	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).
		All land uses are appropriate in this zone.
		For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a flood risk assessment.
Zone 2	Medium	This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% - 0.1%) or between 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.
		Essential infrastructure, water compatible infrastructure, less vulnerable and more vulnerable land uses (as set out by NPPF) are appropriate in this zone. Highly vulnerable land uses are allowed as long as they pass the Exception Test.
		All developments in this zone require an FRA.
Zone 3a	High	This zone comprises land assessed as having a greater than 1 in 100 annual probability of river flooding (>1%) or a greater than 1 in 200 annual probability of flooding from the sea (>0.5%) in any year. Developers and the local authorities should seek to reduce the overall level of flood risk, relocating development sequentially to areas of lower flood risk and attempting to restore the floodplain and make open space available for flood storage.
		Water compatible and less vulnerable land uses are permitted in this zone. Highly vulnerable land uses are not permitted. More vulnerable and essential infrastructure are only permitted if they pass the Exception Test.
		All developments in this zone require an FRA.
Zone 3b	Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. LPAs should identify, in their SFRA, areas of functional floodplain, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances.
		Only water compatible and essential infrastructure are permitted in this zone and should be designed to remain operational in times of flood, resulting in no loss of floodplain or blocking of water flow routes. They must also be safe for users and not increase flood risk elsewhere. Essential Infrastructure will only be permitted if it passes the Exception Test.
		All developments in this zone require an FRA.

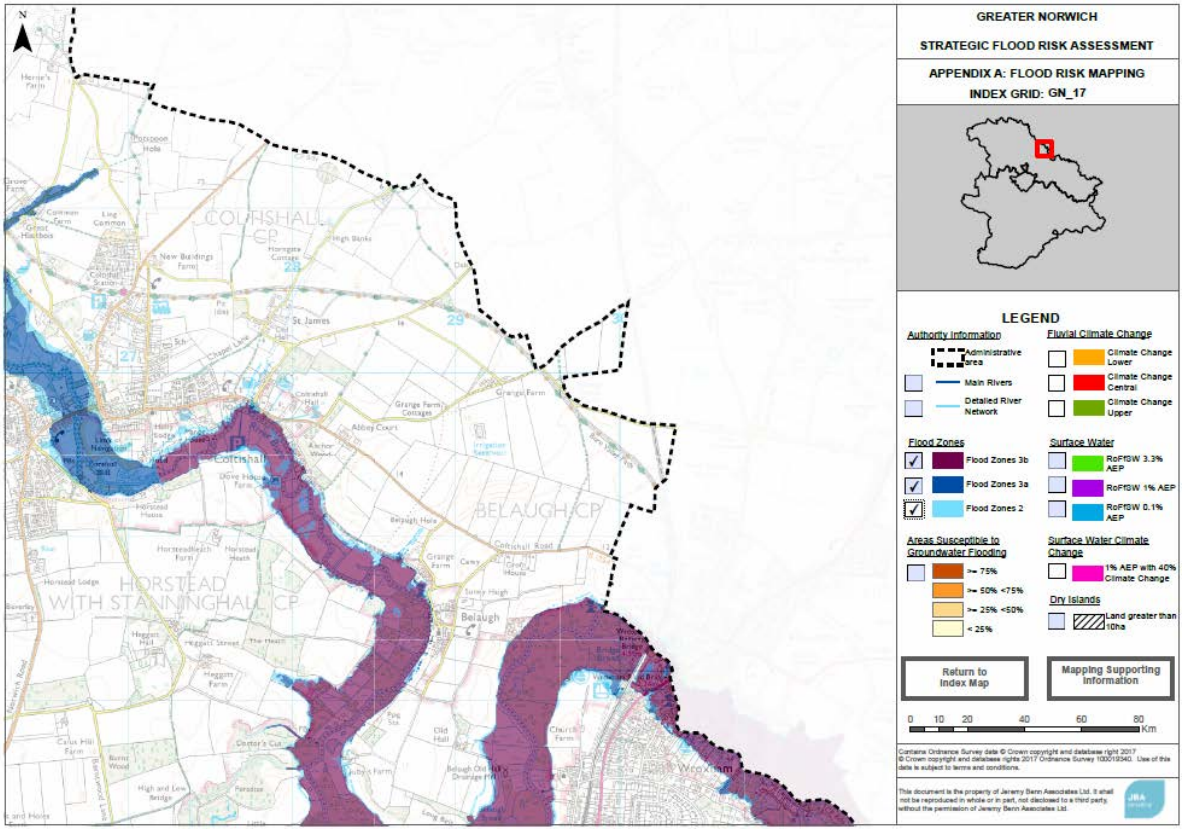
d) Climate Change. The Environment Agency published updated climate change guidance on 19 February 2016 (and updated on 3 February 2017), which supports the NPPF and must now be considered in all new developments and planning applications. The 2016 climate change guidance includes climate change predictions of anticipated change for peak river flow and peak rainfall intensity. The guidance also covers sea level rise and wave height. These allowances are based on climate change projections and different scenarios of carbon dioxide emissions to the atmosphere. By making an allowance for climate change, it will help reduce the vulnerability of the development and provide resilience to flooding in the future. The allowances are shown in the following table:

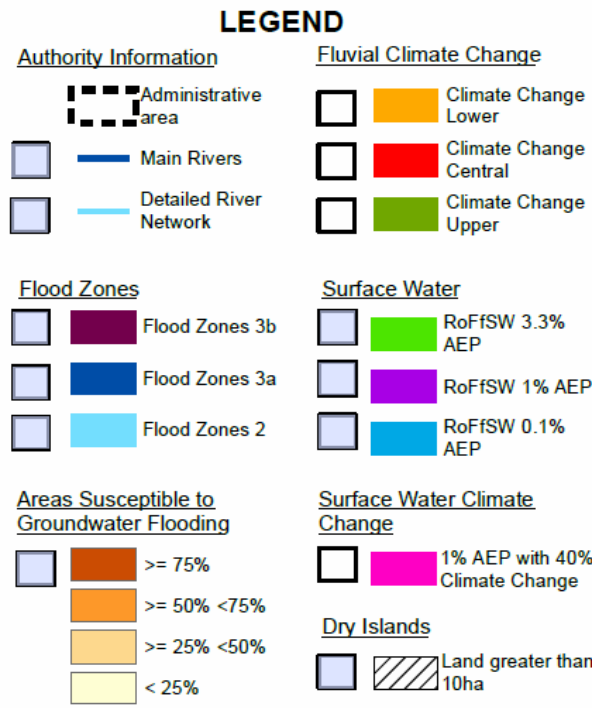
Table 4-1: Peak river flow allowances for the Anglian river basin district

Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper end	25%	35%	65%
Higher central	15%	20%	35%
Central	10%	15%	25%

e) Geo-pdfs. These are interactive pdfs. In this instance, one can click layers on over a map to show the different data sets provided as part of the

SFRA. A screen shot of one of these pdfs is given below. It is intended that these will be placed on the Broads Authority's website so members of the public can use them. In the following example, flood zones 2, 3a and 3b are 'clicked on' and shown. Below that, you can see the key and the information presented on the pdfs.





f) GIS layers. The SFRA also provides GIS layers that will be loaded onto the GIS system to be used in relation to determining planning applications as well as for the production of the Local Plan.

4 The SFRA and the Local Plan

4.1 On receipt of the SFRA, the impacts of its findings will be checked against the Local Plan. The Policies Maps that accompany the Local Plan will be updated to reflect the flood zone data. The site allocation policies will be checked to see if the flood risk to each site has changed.

4.2 As was agreed at the meeting of the Broads Authority on 29 September 2017, the changes to the Local Plan as a result of the SFRA will be agreed with the Chief Executive, the Chair of the Broads Authority and the Chair of Planning Committee before the Local Plan goes out for pre-submission consultation. If those changes are significant the Local Plan will be referred back the Planning Committee and the Broads Authority for their comments.

4.3 Please note that the Waveney Council SFRA has not been finalised at the time of writing. The SFRA is near to completion. The River Waveney part of Waveney District is included in the modelling for the Broadland Flood Alleviation Project and this area is not included in detail in both the Norfolk and Waveney SFRAs – see next section for more information.

5 Broadland Flood Alleviation Project Area

5.1 A large area of the Broads Authority Executive Area has not been looked at in detail as part of this SFRA. This area is the Broadland Flood Alleviation Project Area. The model used for this project needs major updates. The Environment Agency say the model will be available for use in summer 2019. As such, this area is considered to be un-modelled for the purposes of this SFRA and a precautionary approach has been taken whereby this area is shown to be indicatively in flood zone 3b[3]. What this means in practice is that any proposed schemes in this area may need to look into flood risk in detail to ascertain the risk that site experiences. This approach has also been used in the Waveney SFRA for areas that are not modelled, such as the River Waveney.

5.2 Members may recall that to reflect this very issue, a Joint Position Statement has been produced with the Environment Agency. This came before Planning Committee in May 2017 and can be found here: http://www.broads-authority.gov.uk/__data/assets/pdf_file/0011/958286/SFRA-Position-Statement-9-May-2017.pdf. It also provides more background information into this issue.

[3] This is the approach used for all areas that are un-modelled.

6 Summary and recommendation

6.1 Flood risk is an important consideration when producing Local Plans and the SFRA is an important piece of evidence. Members are requested to note this important piece of evidence that supports the Local Plan.

7 Financial Implications

7.1 Our contribution to the Norfolk SFRA has cost £5,000. There may be regular updates to the SFRA in future years, but the timeline to this is not known. It is anticipated that work related to the SFRA will be required in summer 2019 to produce a SFRA for the Broadland Flood Alleviation Project area (as described above). These updates may cost a similar amount.

Background papers: None

Author: Natalie Beal
Date of report: 27 October 2017

Appendices: Appendices can be viewed at the following address:
http://www.broads-authority.gov.uk/planning/planning-policies/sfra/sfra

Appendix 1: North Norfolk SFRA
Appendix 2: Great Yarmouth SFRA
Appendix 3: Greater Norwich SFRA

Please note that for each SFRA, there are three appendices as follows:

- Appendix A: This shows the flood risk for each area. It is in the form of interactive PDFs or GEOPDFs – when you open the file, it shows the map, but you then 'click on' what layer you want to see.
- Appendix B: This shows the watercourses for the area covered by each SFRA
- Appendix C: This shows the flood warning systems in place for the area covered by each SFRA