

**via e-mail**

Mr Simon Marjoram

Planning Section

**South Norfolk Council**

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Your Ref: Level 2 SFRA Draft Review

Date: 16 January 2023

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Dear Mr Marjoram,

**Review of the South Norfolk Level 2 Strategic Flood Risk Assessment (SFRA) Addendum**

Thank you for your consultation on the above site, received on 19 December 2022. We have reviewed the application as submitted and wish to make the following comments.

The LLFA notes that very limited time was made available to the LLFA to review and respond on the submitted information. The LLFA had not previously been consulted specifically about the South Norfolk Level 2 SFRA Addendum and therefore this is the LLFA's first viewing of this report and supporting updated hydraulic modelling.

**South Norfolk Level 2 SFRA Hydraulic Modelling Report (JBA, Dec 2022)**

The LLFA have undertaken an initial review of the hydraulic modelling report. The report indicates the hydraulic model update is a strategic assessment with limited details included. While the model is coarse, this should not prevent an appropriate amount of method justification being provided. The information provided with the report is limited and there are many areas where better justification of modelling decisions should be provided. The main three areas of modelling concern at this time are outlined as:

- Where there is no existing 1D / 2D modelling, the modelling approach has been to coarsely stamp the tributaries into the geometry using the LiDAR and made the watercourse 3.5m wide modelling it in 2D only, rather than 1D / 2D. This is potentially over-estimating the size of the watercourse and there is not enough justification for applying this approach. This weakens the strength of the evidence base that the model aims to provide for the SFRA for assessing the suitability of these possible development sites. The LLFA notes that in the SFRA Addendum report it states the Level 2 SFRA objective is to

*Continued.../*

*"Provide individual flood risk analysis for site options using the latest available flood risk data".* The LLFA is concerned the strategic level modelling of the River Waveney tributaries is too coarse to at present to achieve this objective.

- The updated hydraulic modelling do not contain any detailed hydrology. The justification provided in the report is that the work was simply "not in scope". There is no meaningful technical justification as to the reason for not undertaking and including detailed hydrology. This weakens the strength of the evidence base that the model aims to provide for the SFRA for assessing the suitability of these possible development sites.
- At Gillingham, the hydraulic modelling report has highlighted the possibility of a tidal flood risk. However, the hydraulic modelling report the covers the principle ordinary watercourses, confirms that no joint probability analysis has not been undertaken to consider the joint flood risk from tidal and fluvial sources. Again, the justification provided in the report is the work was simply "not in scope" and there is no meaningful technical justification for not undertaking the analysis and assessment. This weakens the strength of the evidence base that the model aims to provide for the SFRA for assessing the suitability of these possible development sites. **Please liaise with colleagues in the Environment Agency, if required, to resolve this matter.**

### **South Norfolk SFRA Addendum Report (JBA, December 2022)**

The LLFA have undertaken an initial review of the South Norfolk SFRA Addendum Report. Overall, the LLFA requires a number of clarifications on the content of this report. It is clearly stated in the report that the latest NPPF Policy Planning Guidance (PPG), which was updated in August 2022, has not been applied to this SFRA addendum report or the SFRA in general. The LLFA is not able to find reasonable justification for this approach and requests a further clarification on this matter. Furthermore, the report states that the Level 2 SFRA objective is to

*"Provide individual flood risk analysis for site options using the latest available flood risk data, thereby assisting the Council in applying the Exception Test to their proposed site options in preparation of the South Norfolk VCHAP."*

However, the latest guidance has not been applied which would undermine the value of such data. In addition, the addendum also states the Level 2 SFRA's objective to

*"Take into account most recent policy and legislation in the NPPF, PPG and LLFA SuDS guidance"*

However, in the last paragraph of section 3.3 of the addendum report, it is indicated the Waveney Model was updated in 2022 to account for the updates PPG in relation to the Flood Zone 3b definition update. The LLFA requires clarification as this section contradicts the preceding statements that indicate the updated PPG and climate change guidance has not been applied in the report.

Furthermore, a review of the short paragraph in Section 2.6 does not seem to reflect the updates to the PPG. The LLFA notes that NPPF has not been discussed in the policy section. The LLFA recommends it is included or alternatively provide further clarification and justification as to why the NPPF has not been included as a relevant policy in the policy section of the addendum.

Section 3.4 on Climate change, there are a number of typos that are adding to the lack of clarity at the start of the section. For example, the peak rainfall central are quoted for "200s epoch" although when comparing to the latest peak rainfall allowances there is no 10% allowance for the 1% AEP. In addition, it is not clear why lower climate change allowances than those given in the most recent climate change guidance have been discussed. At present it is not clear whether the correct climate change allowances have been applied to the updated hydraulic modelling for the applicant to state they have applied the latest climate change guidance. The LLFA is concerned about the lack of clarity within this section and requires this whole section to be clarified and updated.

In addition, the LLFA notes the climate change allowance that should be applied for the surface water is 45%. As while the applicant has correctly applied the selected epoch, they have not applied the relevant exception rule. The exception rule states;

*"In some locations the allowance for the 2050s epoch is higher than that for the 2070s epoch. If so, and development has a lifetime beyond 2061, use the higher of the two allowances."*

In this location, the 1% AEP event for the 2050s epoch is 45%. Therefore, it is appropriate for this development to apply the 45% climate change allowance to the 1% AEP events. In relation to the information available in section 4 of the addendum report, the LLFA notes that in section 4.2 the commercial development lifetime is misleading as this has now been updated to 75 years. While again in section 4.3 there is no discussion about the exception rule.

To add to the LLFA's confusion, in section 4.4 of the addendum report it is indicated that

*"for this Level 2 SFRA, additional 2D Domains were added sections of the River Waveney (2013) model where this aligned with sites being assessed. The latest Central and Higher Central scenarios were modelled."*

Before going on to state that

*"For any sites not covered by the EA's detailed modelling, Flood Zone 2 was used as an indicative climate change extent. This is appropriate given the 100-year +60% flows are often similar to the Flood Zone 2 extents; therefore, the impacts of climate change would be minimal."*

When previously in section 3.3 it is clearly stated the Waveney Model was updated in 2022 to account for the updates PPG in relation to the Flood Zone 3b definition update. Therefore, it remains unclear to the LLFA why the Flood Zone 3b climate change allowances were updated but other climate change allowances were not. Further justification is expected, although the LLFA would point out that the "not within our scope" response is not considered as an acceptable technical justification.

Again, in relation to inconsistency, clarity and technical justification to the application of the latest PPG and the updated climate change guidance. In section 4.6 of the addendum, the potential impacts of climate change on the functional floodplain are discussed vaguely. It is clear that no scientific analysis has been undertaken to define the impact of climate change on the functional flood due to the vague conjecture that is presented in the paragraph based upon the use of outdated flood zone 3b definitions. The latest PPG defines Flood Zone 3b as the 3.3% AEP (or 1 in 30 year) extent. In addition, section 4.6 of the Addendum advises the application of a climate change allowance (that is lower than the preceding climate change allowances) to the Flood Zone 3b extent for the 5% or even the 4% AEP with an unsubstantiated claim that this “may equate to a 75-year or 100-year flood event”. While this approach may have been used historically, technical verification had been undertaken to determine whether this was possible. As both the flood zone 3b defined AEP event and the climate change allowances have changed significantly, updated scientific verification will be expected to support this claim. **Please liaise with colleagues in the Environment Agency, if required, to resolve this matter.**

The LLFA expects the model to be updated with the correct climate change allowances and appropriate updates are then made throughout the report. Furthermore, the LLFA expects the Addendum report to be updated to provide better clarity on the reporting of the work undertaken and the associated results.

The LLFA notes that the updated NPPF confirms

*“the Environment Agency’s Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment when considering location and potential future flood risks to developments and land uses.”*

However, as the SFRA has a confusing and at times what appears to be a contracting approach to the application of climate change, the LLFA has concerns about whether the SFRA addendum will be able to clearly provide that information as an evidence base to developers and planners.

The LLFA has reviewed a selection of the sites identified in Table 5-1 and in the Hydraulic Modelling report. The LLFA is concerned there are a few sites that under the updated PPG would be unlikely as appropriate to consider for development. However, the wording around the site potential for developments appears to either infer doubt on the modelled results or rather optimistic compared to the modelled flood extents for both fluvial and surface water sources, such as at SN0274RevB and SN2183. As there has been no significant changes in the hydraulic modelling for either fluvial, tidal or surface water mapping that the SFRA is based upon, it is not clear to the LLFA based on the information in the addendum whether the previous LLFA site specific advice has been applied. The LLFA notes that it is not clear from the report whether consultation with the Environment Agency was undertaken for the fluvial sites and the outcome of that consultation either.

*Informative* – In December 2022 it was announced the FEH rainfall data was updated to account for additional long term rainfall statistics and new data. As a consequence, the rainfall statistics used for surface water modelling and drainage design has changed. In

some areas there is a reduction in comparison to FEH2013 and some places an increase (see FEH22 - User Guide (hydrosolutions.co.uk)). The LLFA advises that future flood risk assessment activities should use the most up to date FEH22 data. For the avoidance of doubt, the use of FSR and FEH1999 data has now been superseded by FEH 2013 and 2022.

*Informative* – Schedule 3 of the FWMA is scheduled to be enacted in 2024. However, the LLFA is yet to receive further information determining the precise role and responsibilities they will be expected to fulfil. Further information will be provided once available.

*Informative* - Further guidance on the information required by the LLFA from applicants can be found at <https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-developers>.

Yours sincerely,

Sarah

**Sarah Luff**  
**Strategic Flood Risk Planning Officer**

Lead Local Flood Authority

***Disclaimer***

*We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue.*