Appendix C: SFRA User Guide

This SFRA User Guide provides guidance on how the SFRA data should be used, how to consider different sources of flood risk and recommendations and advice for how each source of flood risk should be considered within the sequential and exception tests.

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests
Fluvial	Greater than 1% AEP (1 in 100 year) (FZ3)	Between 1% and 0.1% AEP (1 in 100 and 1 in 1000 year) (FZ2)	Less than 0.1% AEP (1 in 1000 year)	EA's Flood Zones 1, 2 and 3 use a risk-based approach. Functional Floodplain (FZ3b) is displayed using the best available model data, see Section 3.2.1 of the Main Report for details of the models used. Where model data is not available, Fluvial Flood Zone 3a is used as a Proxy for FZ3b.	EA's Flood Zones 1, 2 and 3 use a risk-based approach. Climate change uplifts should be assessed as part of the screening process. Where significant parts of sites are shown to be at risk in the 1000 year (0.1% AEP), a review of whether the site is sequentially appropriate may be required following a Level 2 assessment. This may result in slightly larger numbers of sites requiring assessment at Level 2. Climate Change uplifts use the best available data: - where climate change datasets are not available to define FZ3b, the 1% AEP event should be used. - where climate change datasets are not available to define FZ3a the 0.1% AEP event should be used. - no climate change datasets are available to define Low Risk into the future and the current 0.1% AEP event should be used, noting the comment above about re-screening following any Level 2 assessment.	Sites at high or medium risk of fluvial flooding either now or in the future should be explicitly addressed in a sequential test and may require preparation of further evidence to substantiate that the exception test can be satisfied. Evidence from a Level 2 SFRA (including detailed modelling of the impact of climate change) is required to demonstrate that the principle of development is supported.

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests
Surface Water	Greater than 1 in 100 year plus 40% climate change (Zone B)	N/A	Less than 1 in 100 year plus 40% climate change (Zone A)	Different assumptions are used to derive surface water risk than is the case for fluvial and tidal flood zones. The RoFSW dataset potentially does not provide the confidence or certainty required to define areas of high, medium and low flood risk that are comparable with the risk zones for river and sea flooding. Therefore, a precautionary approach should be taken so development is located in areas of lower flood risk. This approach will require that sites where proposed development is located in a higher risk surface water zone, and do not clearly show that development can be achieved away from the flood risk, are assessed in more detail in the Level 2 SFRA.	Different assumptions are used to derive surface water risk than is the case for fluvial and tidal flood zones. The RoFSW dataset potentially does not provide the confidence or certainty required to define areas of high medium and low flood risk that are comparable with the risk zones for river and sea flooding. Therefore, a precautionary approach should be taken so development is located in areas of lower flood risk. This approach will require that sites where proposed development is located in a higher risk surface water zone, and do not clearly show that development can be achieved away from the flood risk, are assessed in more detail in the Level 2 SFRA. Climate Change datasets exist for the following events and scenarios. 3.3% AEP +25% and +35%, 1% AEP +25% and +40% (for the Lower Trent and Erewash, Soar, and Welland Management Catchments). Surface water flood risk into the future should be sequentially assessed using the extent of the 1% AEP extent including 40% uplift for Climate Change.	Sites at high risk of surface water flooding should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that the Exception Test can be satisfied. Evidence from a Level 2 SFRA (including detailed modelling of the impact of climate change) is required to demonstrate that the principle of development is supported.
Groundwater	Groundwater flood risk is assessed on a case-by-case basis using best available data.			Datasets do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from groundwater as with surface water and fluvial flood risk. Therefore, a precautionary approach should be taken and the level of groundwater flood risk identified through the 3-step screening process will determine the level of risk and further assessment in the Level 2 SFRA. This screening process comprises of: - Groundwater risk zoning - Emergence mapping and flow routes - Consultation with the LPA	Datasets do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from groundwater as with surface water and fluvial flood risk. Therefore, a precautionary approach should be taken and the level of groundwater flood risk identified through the 3-step screening process will determine the level of risk and further assessment in the Level 2 SFRA. This screening process comprises of: - Groundwater risk zoning - Emergence mapping and flow routes - Consultation with the LPA	Level 2 SFRA required to provide evidence that the principle of development is supported.

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests
Sewer	Sewer flood risk is assessed on a case-by-case basis using best available data.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from sewers. Therefore, further assessment will be undertaken at a Level 2 SFRA where signifant risk from sewers is noted. This may be through historical sewer flood records and additional information from water companies.	Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from sewers. Therefore, further assessment will be undertaken at a Level 2 SFRA where signifant risk from sewers is noted. This may be through historical sewer flood records and additional information from water companies.	Level 2 SFRA required to provide evidence that the principle of development is supported.
Reservoir	Sites where reservoir flooding is predicted to make fluvial flooding worse to be assessed in a Level 2 SFRA.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from reservoirs. In addition, the reservoir flood map identifies the consequence of a reservoir breach rather than risk, so applying high, medium and low 'risk' is not possible using this dataset. Therefore, a precautionary approach should be taken and sites where reservoir flooding is predicted to make fluvial flooding worse for development will be assessed in Level 2 SFRA and the implications for sequential selection of alternative locations considered at that stage.	Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from reservoirs. In addition, the reservoir flood map identifies the consequence of a reservoir breach rather than risk, so applying high, medium and low 'risk' is not possible using this dataset. Therefore, a precautionary approach should be taken and sites where reservoir flooding is predicted to make fluvial flooding worse for development will be assessed in Level 2 SFRA and the implications for sequential selection of alternative locations considered at that stage.	Level 2 SFRA required to provide evidence that the principle of development is supported.