

Appendix C – SFRA User Guide

This SFRA User Guide provides guidance on how the SFRA data should be used, including reference to relevant sections of the SFRA, 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	Relevant sections of the SFRA
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) (FZ1)	<p>EA's Flood Zones 1, 2 and 3 use a risk-based approach.</p> <p>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.</p> <p>Where model data is not available, Fluvial Flood Zone 3a is used as a proxy for FZ3b.</p>	<p>EA's Flood Zones 1, 2 and 3 use a risk-based approach.</p> <p>Climate change uplifts should be assessed as part of the screening process. Where significant parts of a site's area is shown to be at risk in the 0.1% AEP event, 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.</p> <p>Climate Change uplifts use the best available data:</p> <ul style="list-style-type: none"> - 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. 	<p>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.</p>	<p>3.2.1 – Flood Zones – fluvial and tidal risk.</p> <p>4.3 – Fluvial Flood Risk</p> <p>5.3.1 – Fluvial climate change</p> <p>Appendix A – GeoPDF Mapping</p> <p>Appendix E – Summary of Flood Risk</p>
Tidal	Greater than 0.5% AEP (1 in 200 year) (FZ3)	Between 0.5% and 0.1% AEP (1 in 200 and 1 in 1000 year) (FZ2)	Less than 0.1% AEP (1 in 1000 year) (FZ1)	<p>EA's Flood Zones 1, 2 and 3 use a risk-based approach.</p> <p>Functional Floodplain (FZ3b) is displayed using the best available model data, see</p>	<p>Climate change uplifts should be assessed as part of the screening process.</p> <p>Climate change datasets exist for the 2123/24 epoch for the</p>	<p>Sites at high or medium risk of tidal 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</p>	<p>3.2.1 – Flood Zones – fluvial and tidal risk.</p> <p>4.4 – Tidal Flood Risk</p>

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests	Relevant sections of the SFRA
				Section 3.2.1 of the Main Report for details of the models used.	3.3%, 1%, and 0.1% AEP events.	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.	5.3.2 - Tidal climate change Appendix A – GeoPDF Mapping Appendix E – Summary of Flood Risk Appendix G – Coastal Change Management Areas
Surface Water	Greater than 1% AEP plus 50% climate change (Zone B)	N/A	Less than 1% AEP plus 50% 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 upper end climate change allowances for the 2050s and 2070s for the 3.3% and 1% AEP events.	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.	3.2.2 Flood Zones – surface water risk 4.7 – Surface water flooding 5.3.3 – Surface water climate change Appendix A – GeoPDF Mapping Appendix E – Summary of Flood Risk
					Surface water flood risk into the		

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests	Relevant sections of the SFRA
					future should be sequentially assessed using the extent of the 1% AEP extent including 50% uplift for Climate Change.		
Groundwater	Groundwater flood risk is assessed on a case-by-case basis using best available data.	Groundwater flood risk is assessed on a case-by-case basis using best available data.	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.	While all sources of flood risk should inform the sequential test, the national data available for use in this SFRA for other sources of flooding are not sufficient 'risk-based' datasets to inform the sequential test in the same way as the available data for fluvial and surface water risk, and therefore a more detailed assessment will be required in a Level 2 assessment. Level 2 SFRA required to provide evidence that the principle of development is supported.	3.2.3 – Flood Zones – other sources of flooding 4.9 – Groundwater flooding Appendix A – GeoPDF Mapping Appendix E – Summary of Flood Risk
Sewer	Sewer flood risk is assessed on a case-by-case basis using best available data.	Sewer flood risk is assessed on a case-by-case basis using best available data.	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 significant 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 significant risk from sewers is noted. This may be through historical sewer flood records and additional information from water companies.	While all sources of flood risk should inform the sequential test, the national data available for use in this SFRA for other sources of flooding are not sufficient 'risk-based' datasets to inform the sequential test in the same way as the available data for fluvial and surface water risk, and therefore a more detailed assessment will be required in a Level 2 assessment. Level 2 SFRA required to provide evidence that the principle of development is supported.	3.2.3 – Flood Zones – other sources of flooding 4.8 – Sewer flooding
Reservoir	Sites where reservoir flooding is predicted to	Sites where reservoir flooding is predicted to	Sites where reservoir flooding is predicted to	Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative	Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative	While all sources of flood risk should inform the sequential test, the national data available for use in this	3.2.3 – Flood Zones – other sources of flooding

Source of Flooding	High Risk	Medium Risk	Low Risk	Present Day	Future	Sequential and Exception Tests	Relevant sections of the SFRA
	make fluvial flooding worse to be assessed in a Level 2 SFRA.	make fluvial flooding worse to be assessed in a Level 2 SFRA.	make fluvial flooding worse to be assessed in a Level 2 SFRA.	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.	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.	<p>SFRA for other sources of flooding are not sufficient 'risk-based' datasets to inform the sequential test in the same way as the available data for fluvial and surface water risk, and therefore a more detailed assessment will be required in a Level 2 assessment.</p> <p>The mapping could be used to direct proposed new development away from locations that could potentially be affected by reservoir flood risk. However, it is different to the risk pertaining to river and sea flooding and further assessment would be required to understand the magnitude of the potential hazard.</p> <p>Level 2 SFRA required to provide evidence that the principle of development is supported.</p>	<p>4.11 – Flooding from reservoirs</p> <p>Appendix A – GeoPDF Mapping</p> <p>Appendix E – Summary of Flood Risk</p>