Appendix B - Guide to using technical data

This guide sets out how the data contained within this SFRA should be used to undertake the Sequential and Exception Tests. The different sources of flood risk are divided into three levels of concern: high, medium and low. Within, recommendations and advice for undertaking the Sequential and Exception Tests are provided as well as references to relevant sections of this SFRA.

Flood risk source / information source: sets out the different sources of flood risk and technical data used within study, including Flood Zones, surface water, groundwater, climate change, reservoir inundation, historic flood risk and proximity to watercourses.

Relevant sections of this SFRA: cross-references the flood risk and information sources with the relevant sections of this SFRA.

Result: divides the flood risk and information sources into categories based on the extent of impact to a site. The Level 1 Site Screening spreadsheet (Appendix E) can be used to cross-reference a site against these criteria.

Level of concern: Categorises the flood risk and information sources into three levels of concern (high, medium and low) based on the result column.

Recommendations: Provides recommendations in relation to development suitability, further investigations, additional site-specific FRA considerations and consideration of defences and SuDS, based on the level of concern.

Sequential and Exception Tests: Provides advice on applying the Sequential and Exception Tests, including under what circumstances a Level 2 SFRA may be required, based on the level of concern.

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Fluvial / Tidal (Flood Zones)	3 - Planning policy for flood risk management 6 - Understanding flood risk within Maldon District Appendix A.1 - Flood Zones	Significant proportion (e.g. greater than 50%) of site in Flood Zones (2 and 3)	High	Residential development on a site in this zone is not normally appropriate unless the site is in an area benefitting from defence and can be made safe for the intended lifespan.	As appropriate sites in these categories should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that Exception Test can be satisfied. Evidence from a Level 2 SFRA is required to demonstrate that the principle of development is supported.
		A proportion (e.g. less than 50%) of site in Flood Zones (2 and 3)	Medium	Residential development may be appropriate, sequential approach should be applied to avoid developing in flood zones as far as reasonable. Parts of the site within flood zone 1 should also be reviewed against the criteria described below.	
		Site located in Flood Zone 1	Medium	Residential development is probably appropriate in this zone, however catchments <3km^2 in area are not covered by the Environment Agency Flood Zones and there may be a risk of flooding from small watercourses and/or other sources. These should be considered in conjunction with the DRN data and data on other sources of flooding. The surface water data in particular often highlights areas at risk of flooding from these smaller watercourses.	
Fluvial / Tidal - Climate change	4- Impact of climate change 6 - Understanding flood risk within Maldon District Appendices A.3-A.8 - Fluvial and tidal flood extents	Significant proportion (e.g. greater than 50%) of site at risk of flooding from the future flood zone 3a (e.g. 1% AEP +30%)	High	Residential development is not normally appropriate unless the site is in an area benefitting from defence. Consideration should be given to the Standard of Protection of existing defences in relation to future climate change and any other measures necessary to provide appropriate standards of protection to proposed development.	As appropriate sites in these categories should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that Exception Test can be satisfied. Evidence from a Level 2 SFRA is required to demonstrate that the principle of development is supported.
		A proportion (e.g. less than 50%) of site at risk of flooding from the future flood zone 3a (e.g. 1% AEP +30%)	Medium	Residential development may be appropriate, sequential approach should be applied to avoid developing in areas at risk of flooding as much as reasonable. Consideration should be given to the Standard of Protection of any defences in relation to future climate change and the commitment to deliver the required standards.	
		Site not at risk of flooding from the future flood zone 3a (e.g. 1% AEP +30%)	Medium	Residential development is probably appropriate in this risk area, however this will depend on the present-day fluvial / tidal risk - refer to fluvial / tidal flood zone recommendations	
Surface Water	6 - Understanding flood risk within Maldon District Appendix A.9 - Risk of Flooding from Surface Water	Significant proportion (e.g. >50%) of site is affected by surface water flooding (across all three surface water events)	High	Development on a site in this risk area is not normally to be appropriate unless measures (including drainage) are in place to control overland flow.	Apply sequential test if any proposed development in Surface Water Zone B (defined as land at >0.1% chance of surface water flooding per year) Evidence may be required in a Level 2 SFRA to demonstrate that the principle of development is supported.
		A proportion (e.g. <50%) of site is affected by surface water flooding (across all three surface water events)	Medium	Development may be appropriate and consultations should be held with the Lead Local Flood Authority.	
		No risk of surface water flooding	Low	Development is likely to be appropriate based on this criterion.	
Surface Water - Climate change	4 - Climate change 6 - Understanding flood risk within Maldon District Appendix A.10 - Risk of Flooding from Surface Water with climate change	Significant proportion (e.g. greater than 50%) of site at risk of surface water flooding from the future 1% AEP event	High	Development on a site in this risk area is unlikely to be appropriate unless measures (including drainage) are in place to control overland flow.	Apply sequnetial test if any proposed development in Surface Water Zone B (defined as land at >0.1% chance of surface water flooding per year). Evidence may be required in a Level 2 SFRA to demonstrate that the principle of development is supported
		A proportion (e.g. less than 50%) of site at risk of surface water flooding from the future 1% AEP event	Medium	Development may be appropriate and consultations should be held with the Lead Local Flood Authority.	
		Site not at risk of surface water flooding from the future 1% AEP event	Low	Development may be appropriate in this risk area, however this will depend on the present-day flood risk - refer to surface water recommendations	
Groundwater	6 - Understanding flood risk within Maldon District Appendix C - Groundwater flood zone methodology	Historic records of groundwater flooding within or near a site	Medium	The effect of this will depend on the location and historic evidence of known problems - a site-specific FRA should consider overland flow paths once groundwater has emerged. It is unlikely that infiltration SuDS will be appropriate and groundwater monitoring should be recommended.	Groundwater mapping shows risk of emergence and does not quantify groundwater volumes or flows. The available mapping is not competent to enable a comparative assessment to be made for groundwater floor risk and thus should not be used alongside river, sea and surface water flooding when performing the Sequentuial Test. If it is proposed to allocate sites that are potentially at risk of groundwater flooding more detailed assessment should be performed in a Level 2 SFRA to demsontrate that the principle of development can be supported. The exception test should be applied to any sites potentially at risk of groundwater flooding.
		Risk of flooding from groundwater is not negligible	Medium	Development might be appropriate but a site-specific FRA should consider groundwater risk. A high likelihood may mean infiltration SuDS are not appropriate and groundwater monitoring should be recommended.	
		Negligible risk of flooding from groundwater	Low	Development is likely to be appropriate in this risk area, however as groundwater datasets are generally produced nationally it is recommended that ground investigations are carried out and reported on within a site-specific FRA where this is required (known to be a problem locally).	
Reservoir inundation	6 - Understanding flood risk within Maldon District Appendix A.19 - Reservoir flood extents	Maximum risk of flooding from reservoir inundation (is greater than 2m depth or 2m/s velocity)	High	Development on a site in this risk area might not be appropriate - this will be heavily dependent on the state of repair of the dam and the long term commitment to its management and maintenance. If development is considered, the local authority Emergency Planning team should be consulted to confirm that proposals can be safely implemented.	Reservoir flood mapping shows a credible worst case but not the risk of failure, it is therefore not appropriate to use this mapping alongside river, sea and surface water flood risk to inform the Sequential Test. If it is proposed to allocate sites potentially affected by reservoir breach failure more detailed assessment should be prepared in a Level 2 SFRA. The exception test should be applied to any sites potentially at risk of reservoir flooding.
		Maximum risk of flooding from reservoir inundation (is less than 2 m depth or 2 m/s velocity)	Medium	Risk of flooding from reservoirs should not rule out development as the likelihood of reservoir breach is low, however risk should still be considered by the developer at site-specific FRA stage and an emergency plan is likely to be required. The local authority Emergency Planning team should be consulted.	
		No risk of reservoir inundation	Low	Development is likely to be appropriate in this risk area.	
Historic flood map	6 - Understanding flood risk within Maldon District	Any part of site within historic flood extents	Medium	Sites located in areas that have historically flooded might be appropriate for Development, however further investigation will be required regarding the severity and frequency of the historic flooding and accuracy of the historic flood extent. This should be used alongside other information in Level 1 SFRA to decide whether the site is appropriate for allocation. Technical work will be required to inform this at the site-specific FRA stage.	
		No risk of historic flooding	Low	Development is likely to be appropriate based on this criterion.	
Sewer Flooding	6 - Understanding flood risk within Maldon District	All sites assumed to be at high risk of sewer flooding		Datasets available from Water Company Drainage Water Management Plan (DWMP) process potentially do not have the resolution, 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, a precautionary approach should be taken, and all sites where sewer flood risk identified to be high will be identified and assessed in a Level 2 SFRA or site specific Flood Risk Assessment.	
Detailed River Network	6 - Understanding flood risk within Maldon District	Any part of site within 20m of a watercourse (from the Detailed River Network dataset)	Medium	Sites located within 20m of the DRN line might be appropriate for development. Where the DRN goes through or adjacent to a site, the Flood Zones and surface water map should also be considered to further determine the effect on development. Where the DRN is located away from a site and land slopes down towards the site, development may be less appropriate than a site where land slopes down towards the watercourse and away from the site.	
		Site not within 20m of a watercourse (from the Detailed River Network dataset)	Low / Medium	Development is likely to be appropriate in this risk area, however not all watercourses are mapped on the Detailed River Network dataset, smaller drains may not be mapped and may need to be considered along with flood risk from other sources.	
Reduction in Risk of Flooding from Rivers and Sea due to Defences	6 - Understanding flood risk within Maldon District 7 - Flood alleviation schemes and assets Appendix A.2 - Areas at reduced risk of flooding from rivers and the sea due to defences	Any part of the site is within an area where the risk of flooding from rivers and sea is reduced due to defences	Advisory	Development in this risk area is normally appropriate in principle, however, the performance of formal defences and residual flood risk will need to be considered and consideration given to the commitment and contributions required to maintain the appropriate standard of protection.	Level 2 SFRA required to provide evidence that the principle of development is supported
		The site is not in an area benefiting from defence	Low	Development is likely to be appropriate in this risk area if there is no risk of flooding from other sources on the site. See other recommendations if there is any risk of flooding.	
Cumulative impacts	8 - Cumulative impacts and strategic flood risk solutions Appendix D - Cumulative impact assessment	High - Any part of the site is within a High Cumulative Impact Zone	Medium	Development could be considered as appropriate, however, specific planning policy recommendations may need to be formulated. Drainage and flood risk reduction opportunities will probably need to be considered further withinse catchments that may have financial and/or land take implications for the site and allay concerns of existing communities potentially at risk.	Level 2 SFRA may be required to provide evidence that the principle of development is supported
		Medium - Any part of the site is within a Medium Cumulative Impact Zone (unless the site is also within a High Zone)	Low / Medium	Development is likely to be appropriate inse risk areas, however if a Medium score has been identified based on a high amount of development then specific planning policy recommendations may need to be formulated. Drainage and flood risk reduction opportunities may need to be considered further withinse catchments that may have financial and/or land take implications for the site.	
		Low - Any site not partially or fully within either High or Medium Cumulative Impact Zones	Low	Development is likely to be appropriate in this risk area.	