

# Appendix F: GUIDANCE ON REQUIREMENTS FOR UNDERTAKING A FLOOD RISK ASSESSMENT

**F1 This guidance relates only to the commissioning and undertaking of flood risk assessment studies at particular sites or over particular areas**

## FLOOD RISK ASSESSMENTS

F2 Flood risk assessments may be of a relatively minor nature, evaluating a small development on a low risk site with minimal secondary effects, or may comprise major basin-wide studies for significant infrastructure developments. On occasions, preliminary or scoping studies may be undertaken prior to a fuller assessment. Developers should consult the Environment Agency and other relevant operating authorities to determine what information is already available on flood risk potentially affecting or affected by their site and its proposed development. They should also take full account of the local knowledge of flooding in the community.

F3 The detail and technical complexity of a flood risk report will reflect the scale and potential significance of the study but, in all cases, whenever a flood risk assessment is undertaken for any location, the resulting report should address, as a minimum, the following requirements:

1. A location plan at an appropriate scale that includes geographical features, street names and identifies all watercourses or other bodies of water in the vicinity. This should include drainage outfalls and, if necessary, cross-refer to their operational arrangements in the body of the report.
2. A plan of the site showing levels related to Ordnance Datum, both current and following development.
3. A more detailed indication, if appropriate, of flood alleviation measures already in place, of their state of maintenance and their performance.
4. An assessment of the source of potential flooding - rivers, tidal, coastal, groundwater, surface flow or any combination of these..
5. A plan of the site showing any existing information on extent and depth of flood events or on flood predictions. Information may be anecdotal, photographic, survey results or model estimates. The events should be identified with date/time, source of the data and supporting information provided on rainfall and/or return period, or probability of occurrence of the flood or storm surge event, or combination. Recorded data are particularly valuable and, if available, should be highlighted along with evidence of any observed trends in flood occurrence. Any changes that have taken place since the last event should be identified.
6. A plan and description of any structures which may influence local hydraulics. This will include bridges, pipes/ducts crossing the watercourse, culverts, screens, embankments or walls, overgrown or collapsing channels and their likelihood to choke with debris.
7. An assessment of the probabilities and any observed trends and the extent and depth of floods for the location and in the catchment context and, if appropriate, routes and speed of water flow. At this stage best estimates, based on the most up-to-date findings, should also be made of climate change impacts on probabilities. The assessment should ensure that the development meets an acceptable standard of flood defence for the design life of the development.
8. A cross-section of the site showing finished floor levels or road levels, or other relevant levels relative to the source of flooding, and to anticipated water levels and associated probabilities.
9. An assessment of the likely rate or speed with which flooding might occur, the order in which various parts of the location or site might flood, the likely duration of flood events and the economic, social and environmental consequences/impacts of flooding.
10. An assessment of the hydraulics of any drains or sewers, existing or proposed, on the site during

flood events. The methodology for assessment must be clearly stated.

- 11 An estimate of the volume of water which would be displaced from the site for various flood levels following development of the site and of the run-off likely to be generated from the development proposed.
- 12 An assessment of the likely impact of any displaced water on neighbouring or other locations which might be affected subsequent to development. This should address the potential for change of the flooding regime both upstream and downstream of the site due to ground raising or flood embankments.
- 13 An assessment of the potential impact of any development on fluvial or coastal morphology and the likely longer-term stability and sustainability.
- 14 Because of the uncertainties in flood estimation and expected climate change impacts, hydrological analysis of flood flows and definition of defence standards should include the allowances for increased flows and sea-level rise in MAFF's project appraisal guidance for flood defence cited in Appendix A.
- 15 An assessment of the residual risks after the construction of any necessary defences. Where new or modified flood defence arrangements are provided, consideration should always be given to their behaviour in extreme events greater than those for which they are designed and information should be provided on the consideration given to minimising risks to life in such circumstances.