G Site-specific FRAs: checklist for developers

G.1 Introduction

This Appendix sets out a checklist for developers to assist with site-specific flood risk assessments, based upon the list set out in Paragraph 068 of the NPPF Flood Risk and Coastal Change Planning Practice Guidance. Where possible, links to sources of information and guidance have been provided.

G.1.1 Development Site and Location

Where is the development site located? Include location map, if possible	
What is the current use of the site?	
Which Flood Zone is the site within (use Appendix C of the SFRA or the Environment Agency's Flood Map for Planning)	
Flood Zone 1	
Flood Zone 2	
Flood Zone 3a	
Flood Zone 3b	

G.1.2 Development Proposals

What are the development proposal(s) for this site? Will it involve a change of use and, if so, what will that change be?	
What is the development's flood risk vulnerability classification (see Table 2 of NPPF Flood Risk and Coastal Change Planning Practice Guidance)	
Essential Infrastructure	
Highly Vulnerable	
More Vulnerable	
Less Vulnerable	
Water-Compatible	
What is the expected or estimated lifetime of the proposed development likely to be? (see paragraph 026 of Flood Risk and Coastal Change Planning Practice Guidance)	

G.1.3 Sequential Test

This section is for developments in Flood Zones 2 and 3 only. Development sites wholly within Flood Zone 1 skip this section and go straight to Section F1.4

What other locations with a lower risk of flooding have you considered for the proposed development?
If you have not considered any other locations, what are the reasons for this?
Explain why you consider the development cannot reasonably be located within an area with the lowest probability of flooding (Flood Zone 1); and, if your chosen site is within Flood Zone 3, explain why you consider the development cannot
As well as flood risk from rivers or the sea, have you taken account of the risk from any other sources of flooding in selecting the location for the development? See SFRA appendices for surface water maps and Environment Agency's Long term flood information website

G.1.4 Climate change

How is flood risk at the site likely to be affected by climate change? (see section 4 of the main SFRA report and Appendix D)

G.1.5 Site specific flood risk

What is/are the main sources of flooding could affect the site? (see evidence base in SFRA, Environment Agency maps and historic flooding records)	
Fluvial	
Surface water	
Groundwater	

Reservoir	
Sewers	
What is the probability of the site flooding, taking account of the maps of flood risk available?	
Are you aware of any other sources of flooding that may affect the site?	
What is the expected depth and level for the design flood? If possible, flood levels should be presented in metres above Ordnance Datum	
Are properties expected to flood internally in the design flood and to what depth? Internal flood depths should be provided in metres	
How will the development be made safe from flooding and the impacts of climate change, for its lifetime	
How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere? Have you taken into account the impacts of climate change, over the expected lifetime of the development	
Are there any opportunities offered by the development to reduce the causes and impacts of flooding?	

G.1.6 Surface water management

What is the existing surface water drainage arrangements for the site? (Undertake a site survey to determine details)
If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?
What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates? For major developments (e.g. of 10 or more homes or major commercial developments), and for all developments in areas at risk of flooding, sustainable drainage systems should be used, unless demonstrated to be inappropriate.
How will you prevent run-off from the completed development causing an impact elsewhere?
Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?

G.1.7 Occupants and users of the development

Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use? If this is the case, by approximately how many will the number(s) increase?

Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.	
Yes	
No	

Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (e.g. residents who will sleep in the building; people with health or mobility issues etc.) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?

G.1.8 Exception test

Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development?
How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere?
Will it be possible to for the development to reduce flood risk overall (e.g. through the provision of improved drainage)?

G.1.9 Residual Risks

What flood-related risks will remain after you have implemented the measures to protect the site from flooding?
How, and by whom, will these risks be managed over the lifetime of the development? e.g. flood warning and evacuation procedures. (See sections 9, 10 and 11 of the main SFRA report)

G.1.10 Flood risk assessment credentials

Who has undertaken the flood risk assessment?
When was the flood risk assessment completed

G.2 Evidence based reviews (Flood Map Challenge)

National flood maps were created by the Environment Agency. The Flood Zones are derived from detailed hydraulic models, where available, and more generalised 2D modelling elsewhere. Whilst they are generally accurate on a large scale, they are not provided for specific sites or land where the catchment of the watercourse falls below 3km^2. In some instances, the Flood Map may be challenged. A challenge is usually made when there is local knowledge suggests the mapping is wrong.

In order to change Flood Zones, the challenger must provide revised flood extents produced by detailed site specific flood modelling and assessment, and in accordance with EA guidance.

In order to challenge the Flood Zones, the challenger would have to undertake the following:

- Agreeing with EA the extent and details of the model.
- Review defences, if appropriate
- Research past flooding incidents.
- Undertake channel and topographic survey for the hydraulic model.
- Flood Modelling
- Calculating 1% and 0.1% AEP flood levels and mapping flood zones.