

Appendix B - Data sources used in the SFRA

1 Historical Flooding

East Sussex County Council as Lead Local Flood Authority provided details of historical flooding events in the district, these are provided in Figure 5-1. The Environment Agency's historic flood map has also been reviewed as part of the SFRA.

2 Fluvial and tidal flooding

2.1 Eastbourne fluvial modelling

This SFRA has incorporated the latest fluvial modelling into the SFRA flood zones, which was undertaken by JBA Consulting on behalf of East Sussex County Council. This modelling has been reviewed by the Environment Agency and represents a significant improvement in the understanding of fluvial flood risk in the study area. At the time of writing this is considered more up-to-date than the Flood Map for Planning.

2.2 Eastbourne tidal modelling

The 'do minimum' modelled events for the Pevensey-Eastbourne scheme have been used to understand tidal flood risk to the study area, with permission from the Environment Agency

2.3 Flood Zones 2 and 3a

Flood Zones 2 and 3a, as shown in Appendix A mapping, show the same extent as the online Environment Agency's Flood Map for Planning (which incorporates latest modelled data). Over time, the online mapping is likely to be updated more often than the SFRA, so SFRA users should check there are no major changes in their area.

2.4 Flood Zone 3b (the Functional Floodplain)

Flood Zone 3b, as shown in Appendix A mapping, has been compiled for the study area as part of this SFRA and is based on the 5% AEP (1 in 20-year chance of flooding in any given year) or 4% AEP (1 in 25-year chance of flooding in any given year) extents produced from Environment Agency detailed hydraulic models.

The defended 1 in 30 (3.3% AEP) event from the Eastbourne fluvial modelling has been used to define Flood Zone 3b along with the defended 3.3% AEP event from the Pevensey-Eastbourne modelling (do minimum). Furthermore, the defended 1% AEP event has also been used in Flood Zone 3b in the vicinity of the Eastbourne Lakes. The use of the 1% AEP event reflects the intended design and considers the existing operation and maintenance of the Lakes.

If the area of interest is in an area that has seen some major changes to the extent of the Flood Zones, having checked the online mapping, developers will also need to remap Flood Zone 3b as part of a detailed site-specific Flood Risk Assessment.

3 Climate change

Detailed Environment Agency hydraulic models were obtained, and an approach was agreed with the Environment Agency to update existing climate change modelling only where the new allowances were greater than 5% of the previous allowances. The outputs from the Eastbourne fluvial modelling have been used to understand the potential impacts of climate change on the fluvial flood risk, these include allowances for the of this have been incorporated into merged mapping showing the Higher Central and Upper End flood extents for Flood Zone 3a, these can be found in Appendix H.

Please refer to Chapter 4 for information on the approach to climate change in this SFRA.

4 Surface water

Mapping of surface water flood risk in study area has been taken from the Eastbourne Surface Water Modelling undertaken by JBA on behalf of East Sussex County Council using InfoWorks ICM, this provides significant update to the Risk of Flooding from Surface Water mapping and takes into account the sewer network.

Table B-1: Risk categories

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.

Although the modelling offers improvement on previously available datasets, the results should not be used to understand flood risk for individual properties. The results should be used for high level assessments such as SFRA for local authorities. If a site is indicated in the Environment Agency mapping to be at risk from surface water flooding, a more detailed assessment should be considered to more accurately illustrate the flood risk at a site-specific scale.

5 Groundwater

Existing groundwater flood mapping, including the BGS Groundwater Flood mapping, and similar products are not considered suitable for identifying actual risk of flooding to a site as they consider only the risk of groundwater emergence. JBA has undertaken additional analysis as part of this SFRA to identify this risk, dividing Eastbourne into a mapped 'high risk' zone, with everything outside this being considered 'low risk'.

To prepare a the high risk zone the 200 year (0.5% annual probability) present day sea level was mapped against the superficial deposits. An average sea level was also evaluated by assessing the Mean High Water Springs (MWHs) and Neaps (MWHN) and adjusted to understand the potential change as a consequence of the predicted sea level rise up to 2125 as shown in Table 6-1 and Figure 6-1. It is likely that the long term changes in mean sea levels will be more influential than

infrequent surge tide events, as although the infrequent surge tide levels are much higher, they are relatively short lived and so unlikely to control groundwater levels over a substantial area.

6 Sewers

Historical incidents of flooding are detailed by Southern Water through their Sewer Incident Report Form (SIRF) and Baseline Risk And Vulnerability Assessment (BRAVA) mapping. The SIRF database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding. This data is aggregated to a postcode level and JBA has mapped hotspots in Figure 5-2.

Section 5.7 of the Main Report presents this data.

7 Reservoirs

The risk of inundation because of reservoir breach or failure of reservoirs within the area has been mapped using the outlines produced as part of the National Inundation Reservoir Mapping (NIRIM) study, and are shown online on the Long-Term Risk of Flooding website at the time of publication. The Environment Agency are currently updating their national reservoir flood maps and SFRA users should check there are no major changes to the reservoir maps before relying on the mapping in the SFRA. Section 5.9 of the Main Report presents the reservoirs affecting Wealden District and Eastbourne Borough.

8 Flood Defences

The Environment Agency supplied the location of all flood defences within the district in their AIMS database, including information relating to the type of flood defence and their standard of protection. The Areas Benefitting from Defences shapefile was also considered. Chapter 6 of the Main Report provides information on flood defences and schemes.

9 Overview of supplied data

Overview of supplied data for the Southern Wealden and Eastbourne from stakeholders is as follows:

Source of flood risk	Data used to inform the assessment	Data supplied by
Historic (all sources)	Historic Flood Map Recorded Flood Outlines	Environment Agency
	Flood Incidents Database	East Sussex County Council
Fluvial (including climate change)	Existing modelling studies	Environment Agency East Sussex County Council JBA Consulting
	Flood Map for Planning Flood Zones	Environment Agency
Surface Water	Eastbourne Surface Water Modelling	East Sussex County Council

Source of flood risk	Data used to inform the assessment	Data supplied by
Sewers	Sewer Incident Report Form database	Southern Water
Groundwater	BGS Depth to Groundwater dataset	Environment Agency
Reservoir	Risk of Flooding from Reservoirs dataset	Environment Agency
Flood Defences	Location and description of flood defences	Environment Agency
Other datasets	Partner Data Catalogue: <ul style="list-style-type: none"> - Source Protection Zones - National Receptor Database - Aquifer Designation Maps - Areas Susceptible to Groundwater Flooding - Detailed River Network - Flood Alert Areas - Flood Warning Areas - Flood Maps for Planning - Groundwater Vulnerability - Historic Flood Map - Risk of Flooding from Rivers and Sea 	Environment Agency (defra data website)