

Appendix A: GeoPDF User Guide

Please tick the boxes next to the dataset titles in the map legend to display the data. If data does not display, it means it is not present in that particular area. For the tickbox functionality to work, the GeoPDFs must be downloaded locally to your PC and opened with Adobe.

Legend	Description	Reference
Authority Information Hinckley & Bosworth Borough Boundary	The boundary of Hinckley and Bosworth Borough, the study area for this SFRA.	Section 1.3 Study Area
Watercourses Main Rivers All Watercourses 8m watercourse buffer Canals	<p>Main Rivers – the Environment Agency (EA) statutory main rivers map detailing the watercourses which are designated a Main River by the EA.</p> <p>All Watercourses – the EA Detailed River Network representing the river network based on Ordnance Survey (OS) MasterMap for surface features and EA culvert surveys for underground features (where available).</p> <p>8m watercourse buffer - this shows the area of land within 8m of a watercourse, as shown in the EA Detailed River Network.</p> <p>Canals - WFD Artificial Water Bodies – Canals Cycle 1, is a polyline shapefile dataset containing Water Framework Directive (WFD) attributes that have been collated as defined for the implementation of the WFD. The WFD defines an ‘artificial water body’ as a body of surface water created by human activity.</p>	Section 1.3 Study Area Section 4.4 Fluvial flood risk
Defences Bridge Abutment Embankment Engineered High Ground Natural High Ground	The EA Asset Information Management System (AIMS) spatial Flood Defence dataset, which shows flood defences currently owned, managed, or inspected by the EA.	Section 6.4 Major flood risk management assets in the borough Table 6-3 Locations shown in the

Legend	Description	Reference
Wall		'EA AIMS' data set
<p>Modelled Flood Zones (Fluvial) Modelled Flood Zone 3b Modelled Flood Zone 3a Modelled Flood Zone 2</p>	<p>Modelled Flood Zone 3b – Functional Floodplain: This zone comprises land where water must flow or be stored in times of flood, identified as land which would flood with an annual probability of 3.3% AEP (1 in 30 years). Within this SFRA the following model outputs have been used:</p> <ul style="list-style-type: none"> • Rothley Brook - 3.3% AEP (defended) • Upper Soar - 3.3% AEP • Harrow and Sketchley Brook - 2% AEP (defended) • River Sence Sheepy Magna - 2% AEP • Shenton Brook - 3.3% AEP <p>Modelled Flood Zone 3a – High risk: between a 3.3% and 1% chance of river flooding in any given year. This layer shows the 1% AEP undefended extents for the EA's Rothley Brook (2022) and Shenton Brook (2015) models which have not been incorporated into the EA Flood Map for Planning but should be used in preference in these areas.</p> <p>Modelled Flood Zone 2 – Medium risk: between a 1% and 0.1% chance of river flooding in any given year. This layer shows the 0.1% AEP undefended extents for the EA's Rothley Brook (2022) and Shenton Brook (2015) models which have not been incorporated into the EA Flood Map for Planning but should be used in preference in these areas.</p>	<p>Section 4.4 Fluvial flood risk Appendix B – for model details</p>
<p>EA Flood Map for Planning Indicative Flood Zone 3b</p>	<p>Indicative Flood Zone 3b – This shows the same extent as Flood Zone 3a from the EA Flood Map for Planning and should only be used where no detailed hydraulic modelling exists. Further work should be undertaken as part of a detailed site-specific FRA to</p>	<p>Section 4.4 Fluvial flood risk Appendix B – for model details</p>

Legend	Description	Reference
Flood Zone 3a Flood Zone 2	define and refine the extent of Flood Zone 3b where no detailed modelling exists. Flood Zone 3a: High risk: between a 3.3% and 1% chance of river flooding in any given year. Flood Zone 2: Medium risk: between a 1% and 0.1% chance of river flooding in any given year.	
Climate Change Extent (Modelled) Indicative 3.3% AEP Central 3.3% AEP Central 3.3% AEP Higher Central 3.3% AEP Upper End 1% AEP Central 1% AEP Higher Central 1% AEP Upper End	Indicative 3.3% AEP Central: Where model data was available, the model inflows were used to align a 3.3% AEP plus climate change (central allowance) event with the nearest representative return period output. Within this SFRA the following model outputs have been used: <ul style="list-style-type: none"> • Upper Soar - 1% AEP • Harrow and Sketchley Brook - 1% AEP (defended) • River Sence Sheepy Magna - 1% AEP • Shenton Brook - 1% AEP 3.3% AEP Central: 1% AEP plus 28% climate change extent for Rothley Brook only. 3.3% AEP Higher Central: 1% AEP plus 37% climate change extent for Rothley Brook only. 3.3% AEP Upper End: 1% AEP plus 60% climate change extent for Rothley Brook only. 1% AEP Central: 1% AEP plus 22% climate change extents for the River Anker, Harrow and Sketchley Brook, the River Sence Sheepy Magna, and Shenton Brook. 1% AEP plus 28% climate change extent for Rothley Brook. 1% AEP Higher Central: 1% AEP plus 30% climate change extents for the River Anker, Harrow and Sketchley Brook, the River Sence Sheepy Magna, and Shenton Brook. 1% AEP plus 37%	Section 5 Impact of Climate Change Appendix B – for model details

Legend	Description	Reference
	climate change extent for Rothley Brook. 1% AEP Upper End: 1% AEP plus 51% climate change extents for the River Anker, Harrow and Sketchley Brook, the River Sence Sheepy Magna, and Shenton Brook. 1% AEP plus 60% climate change extent for Rothley Brook.	
Reservoir Flood Extents (EA) Dry Day Extent Wet Day Extent Fluvial Contribution	The EA reservoir flood extents show the predicted flooding which would occur if a dam or reservoir fails. Dry Day – the predicted flooding which would occur if the dam or reservoir fails when rivers are at normal levels. Wet Day – the predicted worsening of the flooding which would be expected if a river is already experiencing an extreme natural flood. Fluvial Contribution - the extent of river flooding added to the reservoir model to determine the impacts of failure on a wet-day. This can be compared with the Risk of Flooding from Rivers and Sea dataset to see the impact the reservoir flooding has.	Section 4.9 Flooding from reservoirs
Risk of Flood from Rivers and Sea (EA) Very Low Low Medium High	The Risk of Flooding from Rivers and Sea maps have been generated from the EA’s National Flood Risk Assessment (NaFRA) taking account of flood defences and the condition they are in. Each 50m x 50m cell is allocated one of four flood risk likelihood categories: <ul style="list-style-type: none"> • Very low risk: each year there is a chance of flooding of less than 1 in 1000 (0.1%) • Low risk: each year there is a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%) • Medium risk: each year there is a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%) 	Section 4.4 Fluvial flood risk Appendix E Summary of flood risk

Legend	Description	Reference
	<ul style="list-style-type: none"> High risk: each year there is a chance of flooding of greater than 1 in 30 (3.3%) 	
Reduction in Risk of Flooding from Rivers and Sea (EA)	The Reduction in Risk of Flooding from Rivers and Sea is a spatial dataset that indicates where areas have reduced flood risk from rivers and sea due to the presence of flood defences.	Section 6 Flood alleviation schemes and assets
Risk of Flooding from Surface Water (EA) 3.3% AEP 1% AEP 0.1% AEP	The EA's Risk of Flooding from Surface Water (RoFSW) flood maps give an indication of the broad areas likely to be at risk of surface water flooding. This includes flooding that takes place from the surface runoff generated by rainwater. The data includes the extent, velocity, depth, and hazard mapping for the 3.3%, 1% and 0.1% AEP events. The extent of flooding for each of the events is shown in the mapping.	Section 4.5 Surface water flooding Appendix E Summary of flood risk
Climate Change Surface Water Extent (Modelled) 3.3% AEP Upper End 2070s 1% AEP Upper End 2070s	The RoFSW was uplifted with the upper end 2070s allowances to represent the impact of climate change on surface water flood risk.	Section 4.5 Surface water flooding Section 5 Impact of Climate Change
Groundwater Emergence Mapping (JBA) Less than 0.025m below surface Between 0.025-0.5m below surface Between 0.5-5m below surface	JBA's Groundwater Flood emergence map shows the predicted level of groundwater below the surface, at a resolution of 5m. Flood risk could increase when groundwater is already high or emerged, causing additional overland flow paths or areas of still ponding, which may occur at sites other than those shown in the emergence mapping.	Section 4.7 Groundwater flooding Appendix E Summary of flood risk

Legend	Description	Reference
At least 5m below surface No risk.		
Groundwater Flooding Susceptibility (EA) <25% ≥25% <50% ≥50% <75% ≥75%	The EA's groundwater flooding susceptibility data shows the degree to which areas are susceptible to groundwater flooding on the basis of geological and hydrogeological conditions. This is shown at a resolution of 50m. It does not show the likelihood of groundwater flooding occurring, i.e. it is a hazard not risk-based dataset.	Section 4.7 Groundwater flooding Appendix E Summary of flood risk
Historic Flooding Recorded Flood Outlines Historic Flood Map	The EA Recorded Flood Outlines show all the EA records of historic flooding from rivers, the sea, groundwater and surface water. The EA Historic Flood Map shows areas of land that have been previously subject to fluvial flooding in the area. This includes flooding from rivers, the sea, and groundwater springs but excludes surface water. If an area is not covered by the Recorded Flood Outlines or Historic Flood Map, it does not mean that it has never flooded, only that currently there are no records of flooding in this area from the EA records.	Section 4.2 Historical flooding Appendix E Summary of flood risk
Flood Alert and Warning Areas EA Flood Alert Areas EA Flood Warning Areas	The EA issue flood warnings to designated Flood Warning Areas when a river level hits a certain threshold or when heavy rainfall or high tides and strong winds are forecast. "Flooding is expected, immediate action is required". Flood Alerts are issued when there is water out of bank for the first time anywhere in the catchment and when forecasts indicate flooding may be possible. "Flooding is possible, be prepared".	Section 4.10 Flood alerts and flood warnings Appendix D Flood Alerts and Flood Warnings

Legend	Description	Reference
	Both datasets are a polygon GIS shapefile where the above are issued; they are not flood extents.	