

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.

Legend	Description	Reference
Authority Information Blackpool Fylde Wyre	The boundary of the Fylde Coast Authorities, the study area for this SFRA. This includes Blackpool Council, Fylde Council, and Wyre Council.	Section 1.5 SFRA study area
Watercourses Main Rivers All Watercourses 8m watercourse buffer 16m 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. Data available from the DEFRA Data Services Platform.</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 and 16m watercourse buffers – 8m and 16m buffers applied to the All Watercourses layer to represent "Buffer Strips" for making space for water. A buffer strip of 8m (16m if tidally influenced) from any main river.</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 Water Framework Directive. The WFD defines an 'artificial water body' as a body of surface water created by human activity. Data available from the DEFRA Data Services Platform.</p>	Section 1.5 SFRA study area Section 4.3 Fluvial flood risk Section 8.2.8 Buffer strips
Flood Zones Modelled Flood	The Flood Zones are for use in development planning and flood risk assessments: Modelled Flood Zone 3b – Functional Floodplain: This zone comprises land	Section 3.2.1

Legend	Description	Reference
<p>Zone 3b Indicative Flood Zone 3b Flood Zone 3a Flood Zone 2</p>	<p>where water must flow or be stored in times of flood where detailed modelling is available, using both fluvial and tidal models.</p> <p>Indicative Flood Zone 3b – Where no detailed hydraulic modelling exists, Indicative Flood Zone 3b should be used, which shows the same extent as Flood Zone 3a.</p> <p>Flood Zone 3a – High probability: greater or equal to a 1% chance of river flooding or a 0.5% chance of flooding from the sea in any given year (Excludes Flood Zone 3b, which is derived as part of the SFRA).</p> <p>Flood Zone 2 – Medium probability: between a 1% and 0.1% chance of river flooding or between a 0.5% and 0.1% chance of flooding from the sea in any given year.</p> <p>The Environment Agency's Flood Map for Planning (FMfP) dataset can be downloaded from the DEFRA Data Services Platform for Flood Zone 2 and Flood Zone 3a.</p> <p>Flood Zones 2 and 3a, as shown in the Appendix A mapping, show the same extent as the online Environment Agency's FMfP (which incorporates latest modelled data) other than for Ashbournes Brook (2020).</p> <p>The 3.3% AEP defended modelled fluvial and tidal flood extents have been used to represent Flood Zone 3b, where available from the EA. For areas covered by detailed models, but with no defended 3.3% AEP output available, the 2% AEP defended outputs were used as a proxy and then the 3.3% AEP undefended outputs if neither defended output was available. Further details on model availability area available in Appendix B - Data Sources.</p>	<p>Flood Zones – river risk</p> <p>Section 4.3 Fluvial flood risk</p> <p>Appendix B – for model details</p>

Legend	Description	Reference
<p>Climate Change Extent (Modelled) Modelled Central CC Modelled Upper End CC</p>	<p>The modelled climate change extents are from existing hydraulic models, where the 1% AEP is upscaled by the EA’s climate change allowances for the 2080s epoch for the relevant management catchment. The defended outputs have been presented within the mapping.</p> <p>The study area lies across three management catchments (see Table 5-1 of the main report for further details and allowances).</p> <p>The following model outputs have been used to inform the modelled central climate change extent:</p> <ul style="list-style-type: none"> • Ribble-Douglas – 1% AEP plus 35% CC • Wyre – 1% AEP plus 35% CC • Dolphinholme – 1% AEP plus 35% CC • Red Bridge Pumping Station – 1% AEP plus 30% CC • Ashbournes Brook – 1% AEP plus 35% CC • River Brock – 1% AEP plus 35% CC <p>The following model outputs have been used to inform the modelled upper end climate change extent:</p> <ul style="list-style-type: none"> • Ribble-Douglas – 1% AEP plus 70% CC • Wyre – 1% AEP plus 70% CC • Dolphinholme – 1% AEP plus 70% CC • Red Bridge Pumping Station – 1% AEP plus 70% CC • Ashbournes Brook – 1% AEP plus 70% CC • River Brock – 1% AEP plus 70% CC <p>Where no detailed modelling exists, Flood Zone 3a (1% AEP) can be compared against Flood Zone 2, for an indication of areas most sensitive to climate change.</p>	<p>Section 5 Impact of Climate Change</p> <p>Appendix B – for model details</p>
<p>Risk of Flooding from Surface</p>	<p>The EA’s Risk of Flooding from Surface Water (RoFfSW) flood maps give an indication of the broad areas likely to be at risk of surface water flooding. This</p>	<p>Section 4.5 Surface</p>

Legend	Description	Reference
Water Surface Water Extent 3.3% AEP 1% AEP 0.1% AEP	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. Data available from the DEFRA Data Services Platform .	water flooding Appendix E Summary of flood risk
Surface Water Extent plus Climate Change 3.3% AEP 2050s 3.3% AEP 2070s 1% AEP 2050s 1% AEP 2050s	The RoFSW was uplifted to represent surface water climate change by surface water zone for the following events and scenarios: <ul style="list-style-type: none"> • 3.3% AEP 2050s plus 35% CC • 3.3% AEP 2070s plus 40% CC (Ribble catchment) • 3.3% AEP 2070s plus 45% CC (Wyre and Lune catchments) • 1% AEP 2050s plus 40% CC (Ribble catchment) • 1% AEP 2050s plus 45 CC (Wyre and Lune catchments) • 1% AEP 2070s plus 50 CC 	Section 4.5 Surface water flooding Section 5 Impact of Climate Change
Tidal Flood Extents (Present) 3.3% AEP 0.5% AEP 0.1% AEP	Coastal flood models covering Blackpool, and the Lune and Wyre Estuaries, were developed as part of the 2015 Lancashire tidal areas benefiting from defences project. The existing hydraulic models were updated with new water level boundaries as part of this SFRA. Updated data for the coastal flood model covering the Ribble Estuary was also made available for this study. The tidal flood extents (Present) incorporate the following outputs: <ul style="list-style-type: none"> • Blackpool defended 3.3%, 0.5%, and 0.1% extents for the 2024 epoch. • Lune defended 3.3%, 0.5%, and 0.1% extents for the 2024 epoch. • Wyre defended 3.3%, 0.5%, and 0.1% extents for the 2024 epoch. • Ribble defended 3.3%, 0.5%, and 0.1% extents for the 2023 epoch. 	Section 4.4 Tidal Flood Risk Appendix E Summary of flood risk

Legend	Description	Reference
<p>Tidal Flood Extents (Future) 3.3% AEP CC 0.5% AEP CC 0.1% AEP CC</p>	<p>Coastal flood models covering Blackpool, and the Lune and Wyre Estuaries, were uplifted following the latest climate change guidance for the 3.3% AEP, 0.5% AEP and 0.1% AEP events as part of this study.</p> <p>Updated climate change extents for the coastal flood model covering the Ribble Estuary was also made available for this study.</p> <p>The tidal flood extents (Future) incorporate the following outputs:</p> <ul style="list-style-type: none"> • Blackpool defended 3.3%, 0.5%, and 0.1% extents for the 2124 epoch. • Lune defended 3.3%, 0.5%, and 0.1% extents for the 2124 epoch. • Wyre defended 3.3%, 0.5%, and 0.1% extents for the 2124 epoch. • Ribble defended 3.3%, 0.5%, and 0.1% extents for the 2123 epoch. 	<p>Section 4.4 Tidal flood risk</p> <p>Section 5.3 Representing Climate Change in the Level 1 SFRA</p>
<p>Groundwater Emergence Mapping (JBA) Within 0.025 m of the surface Between 0.025 m and 0.5 m of the ground surface Between 0.5 m and 5 m of the ground surface Levels are at least 5 m below the ground surface No Risk</p>	<p>JBA's Groundwater Flood emergence map shows the 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.</p>	<p>Section 4.7 Groundwater flooding</p> <p>Appendix E Summary of flood risk</p>

Legend	Description	Reference
<p>Risk of Groundwater Flooding EA Areas Susceptible to Groundwater Flooding</p> <ul style="list-style-type: none"> <25% >=25% <50% >=50% <75% >=75% 	<p>The EA's groundwater flooding susceptibility data shows the degree to which areas of England, Scotland and Wales 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.</p>	<p>Section 4.7 Groundwater flooding Appendix E Summary of flood risk</p>
<p>Risk of Flooding from Reservoirs Wet Day Dry Day</p>	<p>The EA reservoir flood extents show the predicted flooding which would occur if a dam or reservoir fails. The EA provide two scenarios:</p> <p>Dry Day – the predicted flooding which would occur if the dam or reservoir fails when rivers are at normal levels. Data available from the DEFRA Data Services Platform.</p> <p>Wet Day – the predicted worsening of the flooding which would be expected if a river is already experiencing an extreme natural flood. Data available from the DEFRA Data Services Platform.</p>	<p>Section 4.8 Flooding from reservoirs Appendix E Summary of flood risk</p>

Legend	Description	Reference
<p>Risk of Flooding from Rivers and Sea (EA)</p> <p>Very Low Low Medium High</p>	<p>The Risk of Flooding from Rivers and Sea maps have been generated from the EA's National Flood Risk Assessment (NaFRA) and National Receptor Dataset (NRD), available from the DEFRA Data Services Platform.</p> <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%). • High risk: each year there is a chance of flooding of greater than 1 in 30 (3.3%). 	<p>Section 4.3 Fluvial flood risk</p> <p>Appendix E Summary of flood risk</p>
<p>Reduction in Risk of Flooding From Rivers and Sea</p>	<p>The Reduction in Risk of Flooding from Rivers and Sea due to Defences is a spatial dataset that indicates where areas have reduced flood risk from rivers and sea due to the presence of flood defences and is available from the DEFRA Data Services Platform.</p> <p>Please note this dataset does not provide information on the Standard of Protection (SoP) offered by the defences.</p>	<p>Section 6.6 Actual and residual flood risk</p>
<p>Defences</p> <p>Demountable Defence Embankment Wall Natural High Ground</p>	<p>The EA Asset Information Management System (AIMS) spatial Flood Defence dataset, shows flood defences currently owned, managed, or inspected by the EA. A defence is any asset that provides flood defence or coastal protection functions. Data available from the DEFRA Data Services Platform.</p>	<p>Table 6-2 Locations shown in the 'EA AIMS' data set</p> <p>Section 6.5 Existing and future flood alleviation schemes</p>

Legend	Description	Reference
<p>Coastal Defences</p> <ul style="list-style-type: none"> Beach Breakwater Cliff Dune Embankment Inter-tidal Other hard defence/structure Rock Revetment Seawall 	<p>Coastal defence data from the Cell 11 defences 2014 dataset from the National Network of Regional Coastal Monitoring Programmes.</p>	<p>Section 6.5 Existing and future flood alleviation schemes</p> <p>Table 6.3 Locations shown in the Cell 11 defences 2014 coastal defences dataset</p>
<p>EA Flood Alert and Warning Areas</p> <ul style="list-style-type: none"> Flood Alert Areas Flood Warning Areas 	<p>The EA issue flood warnings to designated Flood Warning Areas when a river level hits a certain threshold, heavy rainfall or high tides and strong winds are forecast. “Flooding is expected, immediate action is required”.</p> <p>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”.</p> <p>Both datasets are a polygon GIS shapefile where the above are issued; they are not flood extents. Data available from the DEFRA Data Services Platform.</p>	<p>Section 4.9 Flood alerts and flood warnings</p> <p>Appendix D Flood Alert and Flood Warnings</p>
<p>Flood History</p> <ul style="list-style-type: none"> EA Historic Flood map 	<p>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. Data available from the DEFRA Data Services Platform.</p> <p>If an area is not covered by the 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. Other historic information is supplemented in the Level 1 report (Section 4.1).</p>	<p>Section 4.1 Historical Flooding</p> <p>Appendix E Summary of flood risk</p>

Legend	Description	Reference
<p>Shoreline Management Plan Policy</p> <p>SMP 20 year policy</p> <p>SMP 50 year policy</p> <p>SMP 100 year policy</p>	<p>The Shoreline Management Plan (SMP) sets short (20 year), medium (50 year) and long term (100 year) policies for coastal management of specific lengths of coastline. Data available to download from the DEFRA Data Services Platform and can also be viewed on the SMP explorer.</p> <p>The policies defined within the SMP are:</p> <ul style="list-style-type: none"> • HTL (Hold the line) - maintain or upgrade the level of protection provided by defences. • ATL (Advance the line) - build new defences seaward of the existing defence line. • MR (Managed realignment) - allowing retreat of the shoreline, with management to control or limit the movement. • NAI (No active intervention) - a decision not to invest in providing or maintaining defences. 	<p>Section 2.3</p> <p>Key national, regional, and local policy documents and strategies</p>