ANNEX 2: Records of future floods and their consequences (*preliminary assessment report spreadsheet*)

Field	Flood ID	Description of assessment method	Name of Location	National Grid Reference	Location Description	Name	Flood modelled	Probability	Main source of flooding	Additional source(s) of flooding	Confidence in main source of flooding	Main mechanism of flooding	Main characteristic of flooding	Adverse consequences to human health	Human health consequences - residential properties	Property count method	Other human health consequences	Adverse economic consequences	Number of non-residential properties flooded	Property count method	Other economic consequences	Adverse consequences to the environment	Environment consequences	Adverse consequences to cultural heritage	Cultural heritage consequences
Mandatory / optional / Format:	Mandatory Unique number between 1-9999	Mandatory Max 1,000 characters	Mandatory Max 250 characters	Mandatory 12 characters: 2 letters, 10 numbers	Optional Max 250 characters	Optional Max 250 characters	Optional Max 250 characters	Mandatory Max 25 characters	Mandatory Pick from drop-down	Optional Max 250 characters, same source terms	Optional Pick from drop-down	Mandatory Pick from drop-down	Mandatory Pick from drop-down	Mandatory Pick from drop-down	Optional Number between 1-10,000,000	Optional Pick from drop-down	Optional Max 250 characters	Mandatory Pick from drop-down	Optional Number between 1-10,000,000	Optional Pick from drop-down	Optional Max 250 characters	Mandatory Pick from drop-down	Optional Max 250 characters	Mandatory Pick from drop-down	Optional Max 250 characters
Notes:	A sequential number starting at 1 and incrementing by 1 for each record.	Description of the future flood information and how it has been produced. Cover Regulation 12(d) requirements of (a) topography, (b) the location of watercourses, (c) the location of flood plains that retain flood water, (d) the characteristics of watercourses, and (e) the effectiveness of any works constructed for the purpose of flood risk management. Information from other relevant fields (Probability, Main source, News) should be repeated here.	Name of the locality associated with the flood, using recognised postal address names such as streets, towns, counties. If the flood affects the whole LLFA, then record the name of the LLFA.	Reference of the centroid (centre point, falls within polygon) of the flood extent, or of the area affected if there is no extent information. If the flood affects the whole LLFA, then record the centroid of the LLFA.	A description of the general location that could be flooded.	Name of the model or map product or project which produced the future flood information	Background, or additional information on the probability of the flood modelled - such as whether Probability refers to probability of rainfall or water on the ground.	The chance of the flood occuring in any given year - record X from '1 in X chance of occuring in any given year'.	Pick the source which generates the majority of flooding. Refer to the PFRA guidance for definitions of sources.	If the flood is generated by, or interacts with, any other sources (other than the Main source of flooding), report the source(s) here, using the same source terms.	Pick a broad level of confidence in the Main source of flooding, from 'High' (compiling evidence source - about 80% confident that source is correct), 'Medium' (some evidence of source but not compelling - about 50% confident that source is correct) 'Low' (source assumed - about 20% confident that source is correct) or 'Unknown'.	Pick a mechanism from; 'Natural exceedance' (of capacity), 'Defence exceedance' (floodwater overtopping defences), 'Failure' (of a natural or artificial defences or infrastructure, or of pumping), 'Blockage' (of a natural or artificial blocking structure, or restriction of a conveyance channel or system), or 'No data'.	Pick a characteristic from; 'Flash flood' (rises and falls quite rapidly with little or no advance warning), 'Natural flood' (due to significant precipitation), at a slower rate than a flash flood), 'Snow melt flood' (due to rapid snow melt), 'Tidal flood', 'Debris' (conveying a high degree of debris), or 'No data'. Most UK floods are 'Natural flood'.	Would there be any significant consequences to human health if the future flood were to occur?	Where residential or non-residential properties have been counted, it is important to record the method of counting, to aid comparisons between counts. Choose from: 'Detailed GIS' (using property outlines, as per Environment Agency guidance), 'Simple GIS' (using property points), 'Estimate from map', or 'Observed number'.	If there would be other Significant consequences to human health, describe them including information such as the number of critical services flooded.	Would there be any significant economic consequences if the future flood were to occur?	Where residential or non-residential properties have been counted, it is important to record the method of counting, to aid comparisons between counts. Choose from: 'Detailed GIS' (using property outlines, as per Environment Agency guidance), 'Simple GIS' (using property points), 'Estimate from map', or 'Observed number'.	If there would be other Significant economic consequences, describe them including information such as the number of agricultural land flooded, length of roads and rail flooded.	Would there be any significant consequences to the environment if the future flood were to occur?	If there would be Significant consequences to the environment, describe them including information such as national and international designated sites flooded, and pollution sources flooded.	Would there be any significant consequences to cultural heritage if the future flood were to occur?	If there would be Significant consequences to cultural heritage, describe them including information such as the number and type of heritage assets flooded.
Example:	1 See records below for examples of description of assessment method.		Essex	SX123451234S		Flood Map for Surface Water - 1 in 200 deep	Probability refers to the probability of the rainfall event, in this case producing flooding of greater than 0.3m depth.	200	Surface runoff		High	Natural exceedance	Natural flood	Yes	12000	Detailed GIS		No				No		No	
Records begin here:		1 • Topography is derived from LiDAR (in larger urban areas, on 1, 2 and 3m grids; original accuracy ± 0.15m) and Geoperspective data (original accuracy ± 1.5m), processed to remove buildings and vegetation, then degraded to a composite 5m DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; no allowance made for manmade drainage. The DTM may miss flow paths below bridges. • Areas that may flood are defined by dynamically routing a 6.5 hour duration storm with 1 in 200 chance of occurring in any year, over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 is used throughout, to allow broad scale effects of buildings and other obstructions to be approximated. • No allowance made for drainage, pumping or other works constructed for the purpose of flood risk management. • The 'less susceptible' layer shows where modelled flooding is 0.1-0.3m deep; you must not interpret this as depth of flooding, rather as indicative of susceptibility to flooding.	Neath Port Talbot	SS279561932		Areas Susceptible to Surface Water Flooding (ASWF) - Less	Probability refers to the probability of the rainfall event. This identifies areas which are 'less susceptible' to surface water flooding. For more information refer to 'What are Areas Susceptible to Surface Water Flooding" Environment Agency December 2010.	200 Surface runoff		High	Natural exceedance	Natural flood	Yes	12005 Detailed GIS	Unknown	Yes	Available from EA	Unknown	Unknown	Yes	Unknown	Yes	Unknown				
		2 • Topography is derived from LiDAR (in larger urban areas, on 1, 2 and 3m grids; original accuracy ± 0.15m) and Geoperspective data (original accuracy ± 1.5m), processed to remove buildings and vegetation, then degraded to a composite 5m DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; no allowance made for manmade drainage. The DTM may miss flow paths below bridges. • Areas that may flood are defined by dynamically routing a 6.5 hour duration storm with 1 in 200 chance of occurring in any year, over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 is used throughout, to allow broad scale effects of buildings and other obstructions to be approximated. • No allowance made for drainage, pumping or other works constructed for the purpose of flood risk management. • The 'Intermediate susceptibility' layer shows where modelled flooding is 0.3-1.0m deep; you must not interpret this as depth of flooding, rather as indicative of susceptibility to flooding.	Neath Port Talbot	SS279561932		Areas Susceptible to Surface Water Flooding (ASWF) - Intermediate	Probability refers to the probability of the rainfall event. This identifies areas with 'Intermediate susceptibility' to surface water flooding.	200 Surface runoff		High	Natural exceedance	Natural flood	Yes	6421 Detailed GIS	Unknown	Yes	Available from EA	Unknown	Unknown	Yes	Unknown	Yes	Unknown				
		3 • Topography is derived from LiDAR (in larger urban areas, on 1, 2 and 3m grids; original accuracy ± 0.15m) and Geoperspective data (original accuracy ± 1.5m), processed to remove buildings and vegetation, then degraded to a composite 5m DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; no allowance made for manmade drainage. The DTM may miss flow paths below bridges. • Areas that may flood are defined by dynamically routing a 6.5 hour duration storm with 1 in 200 chance of occurring in any year, over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 is used throughout, to allow broad scale effects of buildings and other obstructions to be approximated. • No allowance made for drainage, pumping or other works constructed for the purpose of flood risk management. • The 'more susceptible' layer shows where modelled flooding is >1.0m deep; you must not interpret this as depth of flooding, rather as indicative of susceptibility to flooding	Neath Port Talbot	SS279561932		Areas Susceptible to Surface Water Flooding (ASWF) - More	Probability refers to the probability of the rainfall event. This identifies areas which are 'more susceptible' to surface water flooding.	200 Surface runoff		High	Natural exceedance	Natural flood	Yes	1686 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Yes	Unknown				
		4 Topography is derived from 64.5% LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on OS MasterMap 2008 building footprints, then resampled to a 5m grid DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; a uniform allowance of 12mm/hr has been made for manmade drainage in urban areas. Infiltration allowance reduces runoff to 38% in rural areas and 70% in urban areas. • Areas that may flood are defined by dynamically routing a 1.1 hour duration storm with 1 in 30 chance of occurring in any year over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 in rural areas; 0.03 in urban areas, to reflect explicit modelling of buildings in urban areas. • No allowance made for local variations in drainage, pumping or other works constructed	Neath Port Talbot	SS279561932		Flood Map for Surface Water (FMSW) - 1 in 30	Probability refers to the probability of the rainfall event, in this case producing flooding of greater than 0.3m depth.	30 Surface runoff		High	Natural exceedance	Natural flood	Yes	4108 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	No	Unknown	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each 5km model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then used to derive 1.1 hr, 1:30 chance rainfall depth; this is converted to hyetograph, using summer rainfall profile. See "Description of assessment method" for allowances for infiltration and drainage.	Rainfall Hyetograph, EA 2m Composite DTM, OSMM Topography	Unmarked		Protect	Commercial	UKWD600001ZF0004
		5 • Topography is derived from 64.5% LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on OS MasterMap 2008 building footprints, then resampled to a 5m grid DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; a uniform allowance of 12mm/hr has been made for manmade drainage in urban areas. Infiltration allowance reduces runoff to 38% in rural areas and 70% in urban areas. • Areas that may flood are defined by dynamically routing a 1.1 hour duration storm with 1 in 30 chance of occurring in any year over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 in rural areas; 0.03 in urban areas, to reflect explicit modelling of buildings in urban areas. • No allowance made for local variations in drainage, pumping or other works constructed	Neath Port Talbot	SS279561932		Flood Map for Surface Water (FMSW) - 1 in 30 deep	Probability refers to the probability of the rainfall event, in this case producing flooding of greater than 0.3m depth.	30 Surface runoff		High	Natural exceedance	Natural flood	Yes	1273 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each 5km model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then used to derive 1.1 hr, 1:30 chance rainfall depth; this is converted to hyetograph, using summer rainfall profile. See "Description of assessment method" for allowances for infiltration and drainage.	Rainfall Hyetograph, EA 2m Composite DTM, OSMM Topography	Unmarked		Protect	Commercial	UKWD600001ZF0005
		6 • Topography is derived from 64.5% LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on OS MasterMap 2008 building footprints, then resampled to a 5m grid DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; a uniform allowance of 12mm/hr has been made for manmade drainage in urban areas. Infiltration allowance reduces runoff to 38% in rural areas and 70% in urban areas. • Areas that may flood are defined by dynamically routing a 1.1 hour duration storm with 1 in 200 chance of occurring in any year over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 in rural areas; 0.03 in urban areas, to reflect explicit modelling of buildings in urban areas. • No allowance made for local variations in drainage, pumping or other works constructed	Neath Port Talbot	SS279561932		Flood Map for Surface Water (FMSW) - 1 in 200	Probability refers to the probability of the rainfall event, in this case producing flooding of greater than 0.3m depth.	200 Surface runoff		High	Natural exceedance	Natural flood	Yes	4001 Detailed GIS	Unknown	Yes	Available from EA	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each 5km model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then used to derive 1.1 hr, 1:200 chance rainfall depth; this is converted to hyetograph, using summer rainfall profile. See "Description of assessment method" for allowances for infiltration and drainage.	Rainfall Hyetograph, EA 2m Composite DTM, OSMM Topography	Unmarked				UKWD600001ZF0006
		7 • Topography is derived from 64.5% LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on OS MasterMap 2008 building footprints, then resampled to a 5m grid DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. • Flow routes dictated by topography; a uniform allowance of 12mm/hr has been made for manmade drainage in urban areas. Infiltration allowance reduces runoff to 38% in rural areas and 70% in urban areas. • Areas that may flood are defined by dynamically routing a 1.1 hour duration storm with 1 in 200 chance of occurring in any year over the DTM using JBA's JFLOW-GPU model. • Manning's n of 0.1 in rural areas; 0.03 in urban areas, to reflect explicit modelling of buildings in urban areas.	Neath Port Talbot	SS279561932		Flood Map for Surface Water (FMSW) - 1 in 200 deep	Probability refers to the probability of the rainfall event, in this case producing flooding of greater than 0.3m depth.	200 Surface runoff		High	Natural exceedance	Natural flood	Yes	10551 Detailed GIS	Unknown	Yes	Available from EA	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each 5km model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then used to derive 1.1 hr, 1:200 chance rainfall depth; this is converted to hyetograph, using summer rainfall profile. See "Description of assessment method" for allowances for infiltration and drainage.	Rainfall Hyetograph, EA 2m Composite DTM, OSMM Topography	Unmarked				UKWD600001ZF0007
		8 • Areas Susceptible to Groundwater Flooding (ASGWF) is a strategic scale map showing groundwater flood areas on a 1km square grid • This data has used the top two susceptibility bands of the British Geological Society (BGS) 1:50,000 Groundwater Flood Susceptibility Map, which was developed on a 50m grid from: • NEXTMap 5m grid DTM. • National Groundwater Level data on a 50m grid • BGS 1:50 000 geological mapping, with classifications of permeability • It covers consolidated aquifers (chalk, limestone, sandstone etc.) and superficial deposits. • Flood plains are not explicitly identified; the mapping identifies where groundwater is likely to emerge, and not where the water is subsequently likely to flow or pond. • No allowance is made for engineering works, or for groundwater rebound or abstraction to prevent groundwater rebound. • The 'Susceptible' layer shows areas which is susceptible to groundwater	Neath Port Talbot	SS279561932		Areas Susceptible to Groundwater Flooding (ASGWF)	Does not describe a probability, but shows places where groundwater emergence more likely to occur.	Unknown	Groundwater		High	Natural exceedance	Natural flood	Yes	63928 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Data developed specifically for PFRA, and is unlikely to be suitable for any other purposes.	Environment Agency	Low	2010-11	ArcGIS	Uses data which is developed from published BGS groundwater level contours, groundwater levels in BGS WellMaster database and some river levels. No probability is associated with this data.	British Geological Society (BGS) DiGMapGB-50 [Susceptibility to Groundwater Flooding].	Unmarked				UKWD600001ZF0008
		9 • Modelling developed from combination of national (2004) and local (generally 1999-2010) modelling. • Topography derived from LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m), NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation. For local modelling, topography may include ground survey. • Location of watercourses and tidal flow routes dictated by topographic survey. • Areas that may flood are defined for catchments >3km² by routing appropriate flows for that catchment through the model to ascertain water level and thus depth and extent. • Manning's n of 0.1 used for national fluvial modelling; variable (calibrated) values for national tidal modelling; appropriate values selected for local modelling. Channel capacity assumed as QMED for national fluvial modelling; local survey methods used for local modelling. • For the purpose of flood risk management, models assume that there are no raised defences.	Neath Port Talbot	SS279561932		Flood Map (for rivers and sea) - flood zone 3	Fluvial 1 in 100, tidal 1 in 200	100 Main rivers	Sea, ordinary watercourses	Medium	Natural exceedance	Natural flood	Yes	7003 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Data updated quarterly. To understand the likelihood of future flooding, taking account of defences, refer to Areas Benefitting from Defences and National Flood Risk Assessment (NaFRA) data. Marked 'Protect' for complete national dataset only.	Environment Agency	Medium	2010-11	Varies but mainly JFLOW, ISIS, HEC-RAS, TUFLOW for fluvial, and HYDROF for tidal.	National methodology described in "National Generalised Modelling for Flood Zones - Fluvial & Tidal Modelling Methods - Methodology, Strengths and Limitations". A national dataset (for England and Wales) of fluvial flood peak estimates was derived from the Flood Estimation Handbook (FEH) to generate a 1 in 100 chance fluvial flood. Local fluvial modelling uses FEH methods. Peak tidal water levels from either Dixon & Tawn (DT3) or local data sets to derive 1 in 200 chance tide levels including surge from POL CSX model.	NextMap SAR DTMs, UKHO Admiralty Charts, 1:50K CEH River Centre Line, CEH FEH QT3 Grids, POL CSX Peak Extreme Water Levels, POL CS3 Astronomical Tides, UKHO Admiralty Tide Time-Series Calibration Locations, OS 1:10 Boundary Line MHW.	Protect	Commercial	UKWD600001ZF0009
		10 • Modelling developed from combination of national (2004) and local (generally 2004-2010) modelling. • Topography derived from LiDAR (on 0.25m-2m grids; original accuracy ± 0.15m), NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & vegetation. For local modelling, topography may include ground survey. • Location of watercourses and tidal flow routes dictated by topographic survey. • Areas that may flood are defined for catchments >3km² by routing appropriate flows for that catchment through the model to ascertain water level and thus depth and extent. • Manning's n of 0.1 used for national fluvial modelling; variable (calibrated) values for national tidal modelling; appropriate values selected for local modelling. Channel capacity assumed as QMED for national fluvial modelling; local survey methods used for local modelling. • For the purpose of flood risk management, models assume that there are no raised defences.	Neath Port Talbot	SS279561932		Flood Map (for rivers and sea) - flood zone 2	Extreme flood outline is 1 in 1000, and includes some historic where judged that this gives an indication of areas at risk of future flooding.	1000 Main rivers	Sea, ordinary watercourses	Medium	Natural exceedance	Natural flood	Yes	10333 Detailed GIS	Unknown	Yes	Unknown	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Data updated quarterly. To understand the likelihood of future flooding, taking account of defences, refer to National Flood Risk Assessment (NaFRA) data. Marked 'Protect' for complete national dataset only.	Environment Agency	Medium	2010-11	Varies but mainly JFLOW, ISIS, HEC-RAS, TUFLOW for fluvial, and HYDROF for tidal.	National methodology described in "National Generalised Modelling for Flood Zones - Fluvial & Tidal Modelling Methods - Methodology, Strengths and Limitations". A national dataset (for England and Wales) of fluvial flood peak estimates was derived from the Flood Estimation Handbook (FEH) to generate a 1 in 1000 chance fluvial flood. Local fluvial modelling uses FEH methods. Peak tidal water levels from either Dixon & Tawn (DT3) or local data sets to derive 1 in 1000 chance tide levels including surge from POL CSX model.	NextMap SAR DTMs, UKHO Admiralty Charts, 1:50K CEH River Centre Line, CEH FEH QT3 Grids, POL CSX Peak Extreme Water Levels, POL CS3 Astronomical Tides, UKHO Admiralty Tide Time-Series Calibration Locations, OS 1:10 Boundary Line MHW, Historic	Protect	Commercial	UKWD600001ZF0010