Preliminary assessment report spreadsheet: instructions

Introduction:

This spreadsheet contains 3 sheets, for reporting details of a preliminary assessment report. The sheets are labelled Annex 1, 2 and 3 and should remain so.

This Environment Agency's PFRA Guidance should be referred to when completing the Annexes. Reporting information on past floods (Annex 1) is described in section 3.4 of the PFRA Guidance. Reporting information on future floods (Annex 2) is described in section 3.5 of the PFRA Guidance. Note that information might not be available for many of the optional fields in Annexes 1 and 2.

Reporting information on Flood Risk Areas (Annex 3) is described in section 4.4 of the PFRA Guidance.

If a PFRA does not identify a Flood Risk Area, Annex 3 does not have to completed.

Please select a Lead Local Flood Authority from the following list:

Note that only one LLFA name can be selected. Where several LLFAs are working together, select one of the LLFAs, and then list the others below. If a particular LLFA is leading the exercise then it should be identified in the box in row 15. If there is no particular lead then it does not matter which one is selected; for example you might enter the LLFA that comes first among the group alphabetically.

Select here: Kingston upon Hull, City of

Working with: (only complete this box where several LLFAs are working together to produce a PFRA)

For Annexes 1, 2 and 3:

Mandatory content to meet European Commission reporting requirements is shown in **red**. If an optional field is not applicable, record "Not applicable" or "NA". If an optional field is not known, record "Unknown".

For Annex 1 in particular:

Note that only past floods with significant consequences need to be reported in Annex 1. Each past flood record must have significant consequences for at least one type of consequence (human health, economic, environment, or cultural). Some information on past floods is optional, but only for this first PFRA cycle. In future cycles, the European Commission will require more information to be reported for floods that occur after 22 Dec 2011. This is shown by the fields labelled "Optional for first cycle". LLFAs should record the following information from 22 Dec 2011: Start date, Days duration, Probability, Main source, Main mechanism, Main characteristics, and Significant consequences of flooding.

Field:	rd poloh gopy pspash FdD Syd p	NL NGJ R	Location Description Start date	Days duration Probability Main source flooding	f Additional source(s) Confidence of flooding source of f	in main Main mechanism of Main characteristic of flooding flooding flooding	g Human health Property count consequences - method	Other human health consequences q	Number of non-Property count Other economic consequences method	Sg Environment Sg g h consequences	q Cultural heritage consequences	Commenta Data ov	rner Area flooded	Flood event outline Flood ev confidence source	ent outline Survey date	Photo ID Lineage Sensitive data	Protective marking European Flood Event Code descriptor
Mandatory / optional: Format:	Mandatory Mandatory Unique number Max 5,000 characters	Mandatory Mandatory Max 250 characters 12 characters: 2	Optional Optional for Max 250 characters 'yyyy' or 'yyy	first cycle Optional for first cycle Optional for first cycle Optional for y-mm' or Number with two Max 25 characters Pick from dr	rst cycle Optional Optional p-down Max 250 characters, Pick from c	Optional for first cycle Optional for first cycle rop-down Pick from drop-down Pick from drop-down	h h h residential properties Mandatory Optional Optional Pick from drop-down Number between 1- Pick from drop-down	Optional Mandatory Max 250 characters Pick from drop-o	Toodied Optional Optional Optional Iown Number between 1- Pick from drop-down Max 250 characters	Mandatory Optional Ma s Pick from drop-down Max 250 characters Pic	h g ndatory Optional k from drop-down Max 250 characters	Optional Optiona Max 1,000 characters Max 250	Optional Ocheracters Number with two	Optional Optional Pick from drop-down Pick from	Optional h drop-down 'yyyy' or 'yyyy-i	Optional Optional Optional mm' or Max 50 characters Max 250 characters Pick from drop-do	Optional Auto-populated wm Max 50 characters Max 42 characters
Notes:	between 1-9299 A sequential number Description of the flood and its adverse or potentially adverse consequences. When starting at 1 and available, information from other fields (<u>Stan date, Dave duration</u> , <u>Probability</u> , <u>Main</u>	re Name of the locality National Grid associated with the Reference of the	rs yyyy-mm-dd A description of the The date wh general location that flood comme	r decimal places en the The number of days The chance of the Pick the sour moed - (duration) of the flood -flood occuring in any which the ma	same source terms e from If flooding occurred Pick a broa prity of from, or interacted confidence	d level of Pick a mechanism Pick a characteristic in the <u>Main</u> from; 'Natural from; 'Flash flood'	10,000,000 Were there any Record the number of Where residential or significant residential properties non-residential	If there were other Were there any Significant significant econo	10,000,000 Record the number of Where residential or If there were other mic non-residential ron-residential <u>Significant economic</u>	Were there any If there were We ic significant sig	re there any If there were nilicant <u>Significant</u>	Any additional comments about the	decimal places The total area of t land flooded, in kn	the Choose from; 'High' m ² (data includes one of:	, yyw-mm-dd	Provide references to Lineage is how and Has the information relevant specific what the data is made been classified un	This field will autopopulate using the LLFA reme provided on the "Instructions" tab, an
	incrementing by 1 for <u>source</u> , <u>Main mechanism</u> , <u>Main characteristics</u> , <u>Significant consequences</u>) should be each record. repeated here.	 flood, using centroid (centre p recognised postal falls within polygo activess names such the flood extent o 	oint, was flooded. when land no n) of normally cov w of water become	t that land not normally given year - record X flooding occu ered by covered by water was from "a 1 in X chance. Refer to the newswell hwater of occurring name weighting for the second sec	red. with, any other <u>source of f</u> FRA sources (other than from; 'High the Main source of (competition	coding exceedance' (of (rises and falls quite capacity). 'Defence rapidly with little or no existence exceedance' arbance warrient	consequences to where the building properties have been human health when structure was affected counted, it is the fixed encurred or either internativ or immonstration second	consequences to consequences w <u>Puman health</u> the flood occurre describe them would there he it	hen properties where the properties have been <u>consequences</u> , d, or building structure was counted, it is describe them 1 a offsetted either important to record indexifies information	consequences to the <u>consequences to the</u> con environment when the <u>environment</u> describe cult in fixed occurred or them including	sequences to consequences to tural heritage when cultural heritage.	past flood record.		Aerial video, Aerial photos, Professional survey, Flood level		photographs, or to a from. Has this data the Government's set of relevant been created by using Protective Markin rohotographs it may data revend or decided Systems? Include	g Protective Marking identifier and will be used to report the floo
		as streets, towns, the area affected counties. If the flood there is no extent	i covered by v	vater. Values should be given year". Where definitions of within the range 0.01 - this is difficult to	iources. flooding), report the of source- source(s) here, using confident th	about 80% (floodwater "Natural flood" (due to at source overtopping significant	would there be if it externally by the flood, the method of were to re-occur? or that would be so counting, to aid	including information were to re-occur such as the number of	? internally or externally the method of such as the area of by the flood, or that counting, to aid agricultural land	f would there be if it information such as wo were to re-occur? national and we	uld there be if it including information re to re-occur? such as the number			information, EA flood data recording staff		not be practical to from data owned by protective marking reference all relevant 3rd party (external) time limit where	Format: UK <ons code=""><p f="" or=""><llfa< th=""></llfa<></p></ons>
		attected the whole information. LLFA, then record the name of the LLFA.		1997.99 (permitting estimate, a range can records to the nearest be recorded. quarter of an hour,	terms. (some evid source but	Medium defences), +-auxer (of precipitation, at a ince of natural or artificial slower rate than a not defences or flash flood), 'Snow	affected if the flood comparisons between were to re-occur. counts. Choose from; Detailed GIS' (using	flooded.	would be so affected comparisons between hooded, length of if the flood were to re- counts. Choose from; roads and rail flood occur. 'Datailed GIS' (using	international ded. designated sites flooded, and pollution	and type of heritage assets flooded.			includes one of: EA/LA ground video,		protographia for each organisations? If yes known. Note: If flood event. please give details. "Approved for Ac- then report	Hood ID "ONS code" is a unque reference for each LLFA. "P or F" indicates if the event is past or future. "LLFA Flood
				where appropriate).	compelling 50% confid source is o	about infrastructure, or of melt flood' (due to ant that pumping), 'Blockage rapid snow melt), marth or restriction' (natural "Debris flow"	property cutines, as per Environment Anency mintages		property outlines, as per Environment America outlinene)	sources flooded.				EALA ground photos, EALA flood event outline man		"Unmarked".	ID* is a sequential number beginning with 0001.
					Low' (sour assumed -	e or artificial blockage (conveying a high about 20% or restriction of a degree of debris), or	Simple GIS' (using property points),		"Simple GIS" (using property points).					LA/professional partner officer site			
					contident to is correct) "Unknown".	at source conveyance channel "No data". Most UK ir or system), or "No floods are "Natural data". floods".	or Observed number		"Estimate from map", or "Observed number".					video), "Low' (not confident) or			
Example:	1 On the 14 April 1998 an interse storm system produced surface water flooding acr Essex, concentrated in the west of the courty. The flooding lasted about 6 hours, a residential encentration ware acentrated as officient internal flooding in Encena and Ma	ross Essex SX1234512345 and 23 hyth	Several towns and 1998-04-15 villages across west Fisser	0.25 20-50 Surface runo	Hgh	Natural exceedance Natural flood	Yes 23 Observed number	No		No No		Epping I Council	Forest District	Medium Site surv	ey 1998-04-20	Ordnance Survey Unmarked AddressPoint; CEH 1 Stite Bear	Private UKE10000012P0001
	Weald. The surface runoff exceeded the drainage capacity in several places, and s probably had a 1 in 30 to 1 in 50 chance of occuring in any given year.	10														Centreline; NextMap DTM.	
Records begin here:	1 On 25 June 2007 an unprecedented amount of rain fell on the city of Hull and the surrounding area. All drainage systems were overwhelmed leading to extensive sur- water flooding across the city. Over 8,000 homes and 1,300 businesses were floor	City of Kingston upon TA1000031400 rface Hull ded	city of Hull and the 2007-06-25 surrounding area	150 Surface runo	The intensity of the High rainfall overwhelmed ditches, drains and	Natural exceedance Natural flood	8657 Observed number	Yes 91 of a total 99	1300 Observed number A63 link from M62 Only passable with extreme care due to	No No I		Hull City	r Caunal	High Site surv	ey 2007-08-25		UKE06000010P0001
	and over 90 of the oity's schools were affected by floodwaters. Hull City Council be the cost of the June 2007 flood damage to its own housing stock to be in the order \$41M (ref. Economic Development and Reseneration Project correspondence). will	allerves of th the			sewers.			area affected; Major gas leak reported in	starding water on ti road surface.	the							
	total cost considerably higher than this figure						Yes	Wold Road.									
	1																

Field:	R di dihi q p y p sp dsh F d D p h d	NL NGd R	Location Description Name Flood modelled P b b	y M dig	Additional source(s) Confidence in a of flooding source of flood	nain M. h. M. h. Sng dig dig	5g	Human health Property count Other hur consequences - method conseque residential mmeethor	nan health Sig nces q	Number of non-Property count Other economic residential properties method consequences flooded	Sig Environment q h consequences	S g Cultural heritage consequences	Comments Data owner	Area flooded Confidence i modelled out	n Model date line	Model Type	Hydrology Type	Lineage Sensitive dat	a Protective marking descriptor	European Flood Event Code
Mandatory / optional: Format: Notes:	Mandatory Minutatory Usign embra Usign embra batewen 1-9899 A semantial embre Description of the formation intermation and trew it has been rectired. Onser	Mandatory Mandatory Max 250 characters 12 characters: 2 letters, 10 numbers Name of the locality National Grid	Optional Optional Optional Mandato Max 250 characters Max 250 characters Max 250 characters Max 250 characters The characters and the model or Backersend or The characters	ory Mandatory characters Pick from drop-down	Optional Optional n Max 250 characters, Pick from drop same source terms ch If the finod is Pick a broad la	Mandatory Mandatory down Pick from drop-down Pick from drop-down well of Pick a mechanism Pick a characteristic	Mandatory Pick from drop-dow	Optional Optional Optional Optional n Number between 1- Pick from drop-down Max 250 10,000,000 Becond the number of Where residential or II there w	Mandatory characters Pick from d	Optional Optional Optional Optional Optional rop-down Namber between 1- Pick from drop-down Max 250 characters 10,000,000 to any. Recruit the number of Where residential or. If there would be	Mandatory Optional Pick from drop-down Max 250 characters Writit there he any	Mandatory Optional Pick from drop-down Max 250 characters Whild there he any	Optional Optional Max 1,000 characters Max 250 characters	Optional Optional Number with two Pick from dr decimal places The total area of the Pick a troad	Optional sp-down yyyy' or 'yyyy-mr 'yyyy-mm-dd'	Optional m' or Max 250 characters Tune nl software use	Optional Max 250 characters of Type of hydrology method used to create	Optional Optional Max 250 characters Pick from dro	Optional sp-down Max 50 characters	Auto-populated Max 42 characters This field will automorphize using the LLEA
	starting at 1 and Perspatient 21(b) requirements of (a) topography, (b) the location of watercourses, (c) incrementing by 1 for the location of flood plains threatin flood water (d) the characteristics of each record, watercourses, and (e) the effectiveness of any works constructed for the purpose of flood risk management. Information from other reviewant fluids. (Postality, Marin surges)	associated with the flood, using centroid (centre poin recognised postal address names such the flood extent, or or	general location that map product or additional information flood occ nt, could be flooded. project which on the probability of given yea of produced the luture the flood modelled - from "a 1 flood information such as whether of occurr	suring in any generates the majori ar - record X of flooding. Refer to 1 in X chance the PFRA guidance ring in any for definitions of	rity generated by, or confidence in the interacts with, any source of flood other sources (other from; 'High' than the Main source (compelling evi	he <u>Main</u> from; 'Natural from; 'Flash flood' ing exceedance' (of (rises and falls quite capacity), Defence rapidly with little or no dence exceedance' advance warring),	significant consequences to human health if the future flood were to	residential properties non-residential other Say where the building properties have been <u>conseque</u> structure would be counted, it is <u>tuman he</u> affected either important to record describe	<u>vificent</u> significant e nces to consequent ath future flood them occur?	conomic non-residential non-residential other <u>Significant</u> sei if the properties where the properties have been <u>concernic</u> were to building structure counted, it is would be affected important to record disscribe them	significant Significant consequences to the environment if the future flood were to them including	significant Significant consequences to cultural heritage if the future flood were to describe them	comments about the future flood record.	land flooded, in km ² confidence in modelled floo from; 'High' (match to par	the id outline good t flood	to create future flood information.	future flood information.	what the data is made been classifi from. Has this data the Governm been created by using Protective M data owned or derived Scheme? Inc	d under organisations apply ent's the Government's arking Protective Marking lude Scheme.	name provided on the "Instructions" tab, ar the <u>Flood ID</u> . It is an EU-wide unique identifier and will be used to report the floo information.
	Name) should be repeated here.	as streets, towns, the area affected if counties. If the flood there is no extent affects the whole information. If the LLFA, then record the flood affects the	Probability refers to given yes probability of rainfall or water on the ground.	ar". sources.	of flooding), report the of source - abo source(s) here, using confident that s the same source is correct), 'Me terms. (some evidence	sut 80% (floodwater "Natural flood" (due to source overtopping significant defences), "Failure" (of precipitation, at a e of natural or artificial slower rate than a	occur?	internally or externally the method of including if the flood were to counting, to aid such as to occur. comparisons between critical as counts. Choose from; flooded.	nformation ve number of rvices	either internally or the method of including information externally if the flood courting, to aid such as the area of comparisons between agricultural land courts. Choose from: flooded, length of	occur? information such as national and international designated sites	occur? including information such as the number and type of heritage assets flooded.		extents - abo confident the is correct), 1 (reasonable	ut 80% t outline Aedium' match -			from data owned by protective m 3rd party (external) time limit who organisations? If yes known. Note please give details. "Approved for	urking Ine If r Access"	Format: UK-CNS Code>-cP or F>-cLLFA Flood ID>. "ONS Code" is a unique reference for each LLFA. "P or F" indicates
		name of the LLFA. whole LLFA, then record the centroid o the LLFA.	of		source but not compelling - ab 50% confident source is corre	defences or flash flood), Snow sout infrastructure, or of melt flood' (due to the pumping), Blockage rapid snow melt), ct) or restriction' (natural 'Debris flow'		Detailed GIS' (using property cutines, as per Environment Agency guidance),		"Datalied GIS" (using robats and rail flooded. property outlines, as per Environment Agency guidance),	. flooded, and pollution sources flooded.			about 50% o that outline is "Low" (poor is sparse data	onfident i correct), natch, - about			then report "Unmarked".		if the event is past or future. "LLFA Flood ID" is a sequential number beginning with 0001.
					"Low" (source assumed - abo confident that s is correct) or "Inference"	or anthoad blockage t20% or restriction of a source conveyance channel dross, and the source of debria), or to data". Most UK or system), or "No floods are "Natural floods are "Natural		Simple GIS (using property points), "Estimate from map', or 'Observed number'.		Sample GIS' (using proparty points), "Estimate from map", or "Observed number".				20% controle outline is con 'Unknown'.	e that rect) or					
Example:	1 See records below for examples of description of assessment method.	Essex SX1234512345	Flood Map for Surface Probability releases 200 Water - 1 in 200 deep the probability of the related event, in this case producing flooding of greater	Surface runoff	High	Natural exceedance Natural flood	Yes	12000 Detailed GIS	No		No	No	Epping Forest District Council	Medium-Low	2008-08	2D-TuRiow	FEH (Revised Rainfall Ruroff)	Ordnance Survey Ummarked AddressPoint; CEH 1:50k River Centreline; NextMap DTM.	Private	LIKE10000012F0001
Records begin here:	1 - Topography is derived from LIDAR (in larger urban areas, on 1, 2 and 3m grids; original accuracy ± 0.15m) and Geoparspective data (original accuracy ± 1.5m); processed to remove buildings and vegetation, then degraded to a composite 5m DTM. Manual edits availed where the wrather device writter or here there there have a composite the remove.	City of Kingston upon TA1000031400 Hull	Areas Susceptible to Probability refers to Surface Water the probability of the Plooding (ASISWF) - raintal event. This Loss interfice onceau which	200 Surface runoff	Hgh	Natural exceedance Natural flood	Yes	57900 Detailed GIS	Yes	7800 Detailed GIS	No	No	JBA Consulting (distributed by Environment Agency under (reacro)	Low	2009-07	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each Sikm model, with areal reduction factor anniard to consert noist rainfall estimate to	Protect	Commercial	LKE06000010F0001
	Flow routes distinted by topography: no allowance made for marmade drainage. The DTM may miss frew 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 vales, over the DTM using DBA's UR_DW-GPUI model.		are 'less susceptible' to surface water flooding. For more information refer to														more representative figure. Curve then us to derive 6.5 hr, 1:200 chance rainfall dep this is converted to hystograph, using summer rainfall profile.	ed th;		
	Manning's n 0 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 floor risk management.		"What are Areas Susceptible to Surface Water Flooding" Environment Agency																	
	 The fass susceptible "kyer allows where modelled flooting is 0.1-0.3m deex; you must not interpret this aid depth of hooting, rather as it diotative of susceptibility to flooting because of modelling uncertainties. 2. ropography is derived from LIDAR (in larger urban areas, on 1, 2 and 3m grids; original 	City of Kingston upon TA1000031400	December 2010. Areas Susceptible to Probability refers to	200 Surface runoff	Hah	Natural exceedance Natural flood	Yes	14700 Detailed GIS	Yes	2200 Detailed GIS	No	No	JBA Consulting	Low	2009-07	JFLOW-GPU	Depth-duration-frequency curves derived	Protect	Commercial	UKE06000010F0002
	accuracy ± 0.5m/ and Geoparspective data (original accuracy ± 5m), processed to remove buildings and vegetation, then degraded to a composite SmDTM. Manual edits applied where flow paths clearly orithted a, balve bridges. • Fiber notate dictated by topography? no advances made for marmade drainage. The	Hul	Surface Water the probability of the Flooding (AStSWF) - raintal event. This Intermediate identities areas with "intermediate										(distributed by Environment Agency under licence)				from FEH CD-ROM, from centre of each Skm model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then use	ad		
	Units may make their games below dragos. Areas that may flood are defined by dynamically reading a 6.5 hour duration storm with 1 in 200 obtains o docurring in any yain, over the DTML aing UBA's UFCOW-GPU model. Marmings in d1.6 is used troughout, to allow broad scale effects of buildings and		succeptowy to surface water flooding.														this is converted to hystograph, using summer rainfall profile.	ur,		
	 No allowant to be appointment. No allowant mail for draining, pumping or other works constructed for the purpose of flood risk management. The "intermediate sacospibility" layer shows where modeled flooding is 0.3-1.0m deep; you must not "interpret this as depth of flooding, rather as indicative ed sacceptibility to 																			
	flooding because of modeling uncertainties. 3 • Topography is derived from LIDAR (in larger urban aneas, 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. Marvai edits	City of Kingston upon TA1000031400 Hull	Areas Susceptible to Probability refers to Surface Water the probability of the Flooding (AStSWF) - raintal event. This	200 Surface runoff	Hgh	Natural exceedance Natural flood	Yes		Yes		No	No	JBA Consulting (distributed by Environment Agency	Low	2009-07	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each 5km model, with areal reduction factor	Protect	Commercial	LKE06000010F0003
	appead while llow paths calaby omtated a, balow brotpist. - Flow routed acticated by topography: no advances made for marmade drainage. The DTM may miss flow paths balow defined by one marmade at 5 hour dwarts notom with - Avaus that may flow date adde that by one marmade at 5.5 hour dwarts notom with - Avaus that may flow date adde that by one marmade a 6.5 hour dwarts notom with - Avaus that paths and the second		More identifies areas which are 'more susceptible' to surface water flooding.										under licence)				applied to convert point raintial estimate to more representative figure. Curve then us to derive 6.5 in; 1:200 chance rainfall dep this is converted to hystograph, using numeer shifted applied.	» ed th;		
	 Manning's on 0.1.1 is used through the bit with the bit was an extreme to indust • Manning's on 0.1.1 is used through the bit was been as a set of the bit with the bit was and other obstructions to be approximated. No allowance made for drainage, pumping or other works constructed for the purpose of food risk management. 																automoti rannan promo.			
	 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 because of modelling uncertainties. 4 - Topography is derived from 64.5% LIDAR (on 0.25m-2m grids; original accuracy ± 	City of Kingston upon TA1000031400	Flood Map for Surface Probability refers to	30 Surface runoff	Hgh	Natural exceedance Natural flood	Yes		Yes		No	No	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived	Rainfall Hystograph, Unmarked		UKE06000010F0004
	0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m, processed to remove buildings a vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on OS MadarMap 2000 building fordprint, then reasonable to a 5m grid DTM. Manual edits applied where flow paths clearly omitted e.g. below buildings.	Hull	Water (FMtSW) - 1 in the probability of the 30 rainfall event, in this case producing flooding of greater boot of the														from FEH CD-ROM, from centre of each Skm model, with areal reduction factor applied to convert point rainfall estimate to more representative figure. Curve then us	EA 2m Composite DTM, OSMM 5 Topography ed		
	 Flow routes dictated by topography: a uniform allowance of 12mm/h has been made for mammach drainage in uniona areas. Infittation allowance reduces amont to 39% in rural areas and 70% in unban areas. Areas that must lood are direfinds by dynamically routine a 1.1 hour dynation storm with 		unian d. mit degen.														this is converted to hystograph, using summer rainfall profile. See " <u>Description</u> assessment method" for allowances for infitration and drainage.	n at		
	1 in 30 chance of occurring in any year over the DTM using JBA's JFLOW-GPU model. • Maming's n of 0.1 in nural areas; 0.03 in urban areas, to reflect explicit modeling of buildings in urban areas. • No allowance made for local variations in dnainage, pumping or other works constructed																			
	for the purpose of flood risk management. • The >0.1m layer shows where modaled flooding is greater than 0.1m deep. 5 • Topography is derived from 64.5% LIDAR (on 0.25m 2m prids; original accuracy ± 0.15m) and 35.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to	City of Kingston upon TA1000031400 Hull	Flood Map for Surface Probability refers to Water (FMISW) - 1 in the probability of the	30 Surface runoff	Hgh	Natural exceedance Natural flood	Yes		Yes		No	No	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-RDM, from centre of each	Rainfall Hyetograph, Unmarked EA 2m Composite		UKE06000010F0005
	Northway building a Wegalaanin, time contrained on a zim ginc, building autoald will and arbitrary height of Sm basel of on SM MasterMap 2008 building footprints, then resampled to a Sim grid DTM. Manual edits applied where flow paths clearly omitted e.g. below bridges. - Flow music distant he tonoversity: a uniform allowance of 12mm/hr has been made.		30 beep ramaa even, in this case producing flooding of greater than 0.5m depth.														skin model, win area reduction actor applied to convert point rainfall estimate to more representative figure. Curve then us to derive 1.1 hr, 1:30 chance rainfall depth this is converted to histograph using	o Topography ed		
	for marinade drainage in urban areas. Infittration atowance reduces nundit to 39% 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 channes of occurring in any year over the DTM using JBAS x JE/DW-CIPU model.																summer rainfall profile. See "Description assessment method" for allowances for infitration and drainage.	la		
	 Manning's n of 0.1 in nural areas; 0.03 in urban areas, to reflect explicit modelling of baildings in urban areas; No allowane made for local variations in drainage, pumping or other works constructed for the purpose of flood risk management. 																			
	 The 50.3m layer shows where monoands modering is greater than 0.3m desp. Topography is derived from 84.5%, UDAR (on 0.25m-2m grids; original accuracy ± 0.15m) and 55.5% NEXTMap SAR (on 5m grid; original accuracy ± 1.0m), processed to remove buildings & september 30.5 March 100 and 200 and 20	City of Kingston upon TA1000031400 Huli	Flood Map for Surface Probability refers to Water (FMISW) - 1 in the probability of the 200 raintal event, in this	200 Surface runoff	Hgh	Natural exceedance Natural flood	Yes	17700 Detailed GIS	Yes	2000 Detailed GIS	No	No	Environment Agency	Medium-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each Skm model, with areal reduction factor	Rainfall Hystograph, Unmarked EA 2m Composite DTM, OSMM		UKE06000010F0006
	archinary naigh o an for back of the subanitivity and the subanity of the suban for a fam (of 10 TM. Manual and circle applied where four partic clearly of mitted a g, below being and the subanity of the su		flooding of greater than 0.1m depth.														reprint to convert point rainial estimate to more representative figure. Curve then us to derive 1.1 hr, 1:200 chance rainfall dep this is converted to hystograph, using summer rainfall molta. See "Description."	ad th;		
	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 modul. JMarning's no 0.1 in nural areas, 0.00 in tubar areas, to reflect explicit modeling of																assessment method" for allowances for infitration and drainage.			
	 buildings in urban areas. No allowance midds for local variations in chainage, pumping or other works constructed for the purpose of flood risk management. The >0.1ml layer shows where modeled flooding is greater than 0.1m deep. 																			
	7 • Logopisphy is derived from 64.5% LDB47 (on 10 25m -2m) grads, on phal adoutary 1 0.15m) and 555 M EXTMap 548 (Ro 1m grid); original accuracy 1 of http: processed to remove buildings & vegetation, then combined on a 2m grid; buildings added with an arbitrary height of 5m based on 0.5 MasterMap 2000 building forsprints, then resampled to a 5m wind TML Manual addres and/et when 6m areash relative nether is an bitrary.	City of Kingston upon 1A1000031400 Hull	Hood Map tor Surface Processing realing to Water (FMISW) - 1 in the probability of the 200 deep rainfall event, in this case producing fibrorition of measure	200 Surface runoff	Hgn	Natural exceedance Natural flood	Yes	500 Defailed Gits	Yes	100 Declaned Cols	No	No	Environment Agency	Medum-Low	2010-11	JFLOW-GPU	Depth-duration-frequency curves derived from FEH CD-ROM, from centre of each Skm model, with areal reduction factor applied to convert point rainfall estimate to more representative finance. Ourse then use	Hantal Hytrograph, Ummarked EA 2m Composite DTM, OSMM o Topography erl		UKEDEDOOTOHOOD/
	bridges. • Flow routes dictated by topography; a uniform allowance of 12mm/hr has been made for mammade drainage in urben areas. Infiltration allowance reduces runoff to 39% in runal areas and 70% in urben areas.		than 0.3m depth.														to derive 1.1 hr, 1:200 chance rainfall dep this is converted to hystograph, using summer rainfall profile. See "Description assessment method" for allowances for	efc.		
	 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 nual areas; 0.03 in urban areas, to reflect explicit modelling of buildings in urban areas. 																infitration and drainage.			
	 No atowarce made to to tock variations in viranage, pumping or other works constructed for the purpose of flood risk management. The '_0 flori Issue shows where modeland flori/tim is venator than 0 %n risks. A seal Subceptible to Constructive Flood(WF) is a strategic scale map showing encounter the out on a 1 km square grid 	City of Kingston upon TA1000031400 Hull	Areas Susceptible to Does not describe a Unknown Groundwater Rooding probability, but shows	Groundwater	Hgh	Natural exceedance Natural flood	No		No		No	No	Data developed Environment Agency specifically for PFRA,	Low	2010-11	ArcGIS	Uses data which is developed from published BGS groundwater level contours	British Geological Unmarked s, Society (BGS)		LKE06000010F0008
	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.		(AStGWF) places where groundwater emergance more likely to occur.										and is unlikely to be suitable for any other purposes.				groundwater levels in BGS WelfMaster database and some river levels. No probability is associated with this data.	DiGMapGB-50 [Susceptibility to Groundwater Flooding].		
	• National circumdwater Level data on a Solm grid • BISS 1:50 000 geological mapping, with classifications of permeability • It covers consolidated aquifuls (chalk, limestone, sandstone etc.) and superficial disposts. • End of bits non-out excluding identifies the measure identifies where excodements in																			
	 Note plant at the Very development of the water is subsequently likely to the original of the very development at the very development of the very development of																			
	emergence, usins four area categories. 9 • Modeling developed from combination of national (2004) and local (generally 1998- 2010) modeling. • Topography derived from LIDAR (on 0.25m 2m grids; original accuracy ± 0.15m). NEVTORe 0.210 cm model categories areas to a source holding.	City of Kingston upon TA1000031400 Hull	Flood Map (for rivers Flueial 1 in 100, tidal 1 and sea) - flood zone in 200 3	100 Main rivers	Sea, ordinary Medium watercourses	Natural exceedance Natural flood	Yes		Yes		Yes	Yes	Data updated Environment Agency quarterly. To understand the involved of fixture	Medium	2010-11	Varies but mainly JFLOW, ISIS, HEC- RAS, TUFLOW for flucid and MXDPOP	National methodology described in "Nation Generalised Modelling for Flood Zones - Fluxial & Tidal Modelling Methods - Methodology Streamthe and Lightsfroot*	 NextMap SAR DTMe, Protect UKHO Admirally Charts, 150K CEH A Bian Control Line 	Commercial	LIKE06000010F0009
	vegetation. For local modelling, topography may include ground survey. • Location of watercourses and ideal flow rectass dictated by topographic survey. • Areas that may flood are defined for catchments - Sken't by routing appropriate lows for that catchment through the model to saccertain water level and this depth and extent.												fooding, taking account of divfences, refer to Areas Benefiting from			for tidal.	national dataset (for England and Wales) fluxial flood peak estimates was derived from the Flood Estimation Handbook (FEI- to generate a 1 in 100 chance fluxial flood	of CEH FEH Q(T) Grids, POL CSX Peak 1) Extreme Water Levels, POL CS3		
	 Manning's n of 0.1 used for national thread modelling: variable (calibrated) values for national sidal modelling: appropriate values selected for local modelling. Channel capacity assumed as OMED for national fluxial modelling; local survey methods used for local modelling. 												Defences and National Flood Risk Assessment (NaFRA) data. Marked 'Protect'				Local fluvial modelling uses FEH methods. Peak tidal water levels from either Dixon 8 Tawn (DT3) or local data sets to derive 1 200 chance tide levels including surge from	Astronomical Tides, LIKHO Admiralty Tide in Time-Series Calibration Locations,		
	 For the purpose of flood risk management, models assume that there are no raised defenses. Modelling developed from combination of national (2004) and local (generally 2004- 2010) modelling. Toronerative tracking from LID&R (on 0.25m, 2m mids) invinited ann raises + 0.15m) 	City of Kingston upon TA1000031400 Hull	Flood Map (for rivers Extreme flood outline and sea) - flood zone is 1 in 1000, and 2	1000 Main rivers	Sea, ordinary Medium watercourses	Natural exceedance Natural flood	Yes		Yes		Yes	Yes	for complete national dataset only. Data updated Environment Agency quarterly. To understand the	Medium	2010-11	Varies but mainly JFLOW, ISIS, HEC- RAS, TUELOW for	POL CSX model. National methodology described in "Nation Generalised Modeling for Flood Zones - Fluid & Tirlal Modeling Methods -	US 1:10 Boundary Line MHW al NextMap SAR DTMe, Protect UKHO Admiraty Cherts 1:50 CFH	Commercial	LKE0600010F0010
	 Copputing to interminicative original accurates, in turning and, original accurates, in turning and, original accurates, in turning accurates, in turning accurates, in turning processes to accurate buildings & vegetation. For local modeling, topography may include ground survey. Location of watercourses and field from routins dictated by topographic survey. Available may flood are distingt for caterimate's 30mb for outing ageroprise flows for 		where judged that this gives an indication of areas at risk of future flooding.										likelihoodi of future flooding, taking account of defendes, refer to National Flood			fluvial, and HYDROF for tidal.	Methodology, Strengths and Limitations". national dataset (for England and Wales) fluxial flood peak estimates was derived from the Flood Estimation Handbook (FEF	A River Centre Line, of CEH FEH Q(T) Grid, POL CSX Reak 1) Extreme Water Level,		
	that catchment through the model to ascentralia water level and thus depth and solvert. • Manning's n of 0.1 used for national fluxial modelling: variable (calibrated) values for national dial modelling: appropriate values solveder for local modelling: Channel capacity assumed as QMED for national fluxial modelling: local survey methods used for local												Risk Assessment (NaFRA) data. Marked Protect for complete national				to generate a 1 in 1000 chance fluxial floo Local fluxial modelling uses FEH methods. Peak tidal water levels from either Dixon 8 Tawn (DT3) or local data sets to derive 1	d. POL CS3 Astronomical Tide, & UKHO Admiratly Tide in Time-Series		
	modeling. - For the purpose of flood risk management, models assume that there are no raised defences.												dataset only.				1000 chance tide levels including surge fro POL CSX model.	om Calibration Locations, OS 1:10 Boundary Line MHW, Historic Flood Map		
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Annex 3 Flood Risk Areas

| Food Risk Area D | Name of F ood R sl
Area | National Grid | Man source of | Additional source(s) | Confidence in main | Ma n mechan sm | of Main character st c
 | S gn f cant | Human health | Property count | Other human health
 | S on f cant | Number of non- | Property count | Other economic | S on f cant
 | Environment | S on f cant
 | Cultural heritage | Or a n of F ood R s | k Amended Food
 | New Food Risk | Bat ona e deta | European Elead Rick Area Code |
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 | econom c | residential properties | method | consequences | consequences to
 | consequences | consequences to
 | consequences | Area | R sk Area rat ona e
 | Area rat ona e | | |
| | | | | 0.4 | 0.4 | |
 | human hea th | residential properties | 3 | 0.4.4
 | consequences | flooded | 0 4 1 | 0.4 | the env ronment
 | 0.4 | cu tura her tage
 | 0.4.4 | |
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 | Flox Iron urop-uow | III Max 1,000 characters | Max 42 Characters |
| A sequential numbe | r Name of the locality | National Grid | Pick the source from | If there is also | Pick a broad level of | Pick a mechanism | Pick a characteristic
 | Has the Flood Bisk | Record the number i | of Where residential or | r If the Flood Bisk Are
 | a Has the Flood Risk | Record the number of | f Where residential or | If the Flood Bisk Are | a Has the Flood Risk
 | If the Flood Risk Are | rea. Has the Flood Risk
 | If the Flood Risk Area | Pick the origin from | Pick the main
 | Pick the main | Summarise the rationale for amending an indicative Flood Risk Area, or identifying a | This field will autopopulate using the LLEA |
| torting at 1 and | secondisted with the | Reference of the | which there is a | eignificant flood riek | confidence in the | from: 'Natural | from: 'Flash flood'
 | Ares been identified | recidential properties | non-residential | has been identified a
 | e Ares heen identifier | non-residential | non-residential | has been identified | se Ares heen identified
 | has been identified | as Area heen identified
 | has been identified as | either: 'Indicative' | rationale from either:
 | rationale from eithe | r new Flood Bick Area Befer to Defra & WAG guidance to LLEAs on "Selecting and | name provided on the "Instructions" tab |
| ncrementing by 1 fr | nr Flood Risk Area: a | centroid (centre poin | t significant flood risk | generated by anothe | er Main source of | exceedance' (of | (rises and falls quite
 | as a result of | where the building | nronerties have bee | n a result of other
 | as a result of | nroperties where the | properties have been | a result of other | as a result of
 | a result of Significar | int as a result of
 | a result of Significant | Flood Bisk Area | 'Geography' 'Past
 | 'Past floods' or | reviewing Flood Risk Areas for local sources of flooding. If the Flood Risk Area was a | and the Flood Risk Area ID. It is an FLI- |
| each record. | town, city, or county, | falls within polygon) | of Refer to the PFRA | source (other than th | he flooding from: 'High' | capacity), 'Defence | rapidly with little or no
 | significant | structure would be | counted, it is | Significant
 | significant economi | building structure | counted, it is | Significant economie | c significant
 | consequences to th | he significant
 | consequences to | 'Amended' Flood Ris | k floods', or 'Future
 | 'Future floods'. The | n indicative Flood Risk Area and has not been amended, record "Indicative Flood Risk | wide unique identifier and will be used to |
| | | the Flood Risk Area. | guidance for | Main source of | (compelling evidence | e exceedance' | advance warning),
 | consequences to | affected either | important to record | consequences to
 | consequences? | would be affected | important to record | consequences, | consequences to the
 | e environment, descri | ribe consequences to
 | cultural heritage, | Area (in which case | floods'. Then provide
 | provide further deta | il Area". | report the Flood Risk Area information. |
| | | | definitions of sources | flooding), report the | of source - about 80% | % (floodwater | 'Natural flood' (due to
 | human health? | internally or external | ly the method of | human health,
 | | either internally or | the method of | describe them (such | n environment?
 | them (such as | cultural heritage?
 | describe them (such | Amended Flood Ris | k further detail in
 | in Rationale detail. | | |
| | | | | source(s) here, usin | g confident that source | e overtopping | significant
 | | by the flood. | counting, to aid | describe them (such
 | 1 | externally by the floor | counting, to aid | as information about | t
 | information about |
 | as information about | Area rationale is | Rationale detail. This
 | This is not mandate | ary | Format: UK <ons code=""><a><llfa flood<="" td=""></llfa></ons> |
| | | | | the same source | is correct), 'Medium' | defences), 'Failure' | (of precipitation, at a
 | | | comparisons betwee | en as information about
 | | | comparisons betwee | n the area of agricultu | ral
 | national and |
 | the number and type | mandatory), or 'New | is not mandatory if th
 | e if the Flood Risk Ar | ea | ID>. "ONS Code" is a unique reference for |
| | | | | terms. | (some evidence of | natural or artificial | slower rate than a
 | | | counts. Choose from | n; the number of critica
 | al | | counts. Choose from | ; land flooded, length | of
 | international |
 | of heritage assets | Flood Risk Area (in | Flood Risk Area was
 | was an indicative | | each LLFA. "A" indicates it is a Flood Risk |
| | | | | | source but not | defences or | flash flood), 'Snow
 | | | "Detailed GIS' (using | g services flooded).
 | | | 'Detailed GIS' (using | roads and rail |
 | designated sites |
 | flooded). | which case New | an indicative Flood
 | Flood Risk Area. | | Area. "LLFA Flood ID" is a sequential |
| | | | | | compelling - about | infrastructure, or of | melt flood' (due to
 | | | property outlines, as | 3
 | | | property outlines, as | flooded). |
 | flooded, and pollution | ion
 | | Flood Risk Area | Risk Area and has no
 | ot | | number beginning with 0001. |
| | | | | | 50% confident that | pumping), 'Blockag | e rapid snow melt),
 | | | per Environment |
 | | | per Environment | |
 | sources flooded). |
 | | rationale is | been amended, or is
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| | | | | | source is correct) | or restriction' (natur | al "Debris flow"
 | | | Agency guidance), |
 | | | Agency guidance), | |
 | |
 | | mandatory). | a new Flood Risk
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| | | | | | 'Low' (source | or artificial blockage | e or (conveying a high
 | | | 'Simple GIS' (using |
 | | | 'Simple GIS' (using | |
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 | | | Area.
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| | | | | | assumed - about 205 | % restriction of a | degree of debris), or
 | | | property points), |
 | | | property points), | |
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| | | | | | confident that source | e conveyance channe | al 'No data'. Most UK
 | | | "Estimate from map" |
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| | | | | | is correct) or | or system), or two | floods are 'Natural
 | | | or Observed number | ar.
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| | | | | | Unknown. | data'. | floods'.
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| 1 | London | SX1234512345 | Surface runoff | NA | High | Natural exceedance | Natural flood
 | Yes | 50000 | Detailed GIS |
 | No | | | | No
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 | | Indicative | NA
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| | 1 Kingston upon Hull 8 | TA5054543069 | Surface runoff | Ordinany | High | Blockage or restrict | ion Flach flood
 | Ves | 43.46 | S1 Simple GIS | Not Counted
 | Vac | 173 | 6 Simple GIS | Not Counted | No
 | | No
 | | Amended | Post floods
 | | Amended to reflect the natural catchment recommonhology and the known influence of | LIKE06000010A0001 |
| | Haltemorice | x 1A3034343009 | Sundce runoii | watercourses: main | nign | blockage of restrict | ion masimioou
 | 105 | 43,40 | or ainpie dia | Not Counted
 | 165 | 173 | o Simple GIS | Not Counted | NO
 | | NU
 | | Amerideu | r ast ilouus
 | | several Wolds watercourses (normally dry), and the influence of an adjacent catchmar | OKE0000010A0001 | | | | |
| | Catchment | | | rivere | | |
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