NOTE TO FILE

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Contract	Rossendale Level 1 SFRA
Client	Rossendale Borough Council
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Author	Mike Williamson
Subject	Functional Floodplain

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1 Functional Floodplain Definition

1.1 Flood Risk and Coastal Change PPG – Table 1, Paragraph 065

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment when considering location and potential future flood risks to developments and land uses.

1.2 Flood Risk and Coastal Change PPG – Paragraph 015

The definition of Flood Zone 3b in Table 1 explains that local planning authorities should identify areas of functional floodplain in their Strategic Flood Risk Assessments in discussion with the Environment Agency and the lead local flood authority. **The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters**. However, land which would naturally flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood (such as a flood attenuation scheme) in an extreme (0.1% annual probability) flood, should provide a starting point for consideration and discussions to identify the functional floodplain.

A functional floodplain is a very important planning tool in making space for flood waters when flooding occurs. Generally, development should be directed away from these areas using the Environment Agency's catchment flood management plans, shoreline management plans and local flood risk management strategies produced by lead local flood authorities.

The area identified as functional floodplain should take into account the effects of defences and other flood risk management infrastructure. Areas which would naturally flood, but which are prevented from

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doing so by existing defences and infrastructure or solid buildings, will not normally be identified as functional floodplain. If an area is intended to flood, e.g. an upstream flood storage area designed to protect communities further downstream, then this should be safeguarded from development and identified as functional floodplain, even though it might not flood very often.

2   Functional Floodplain Delineation

Based on the above guidance and definitions provided in the FRCC-PPG, the following 20 / 25 year modelled flood outlines were available from the river models provided by the EA:

- Dearden Brook (2009) – 20 year undefended.
- Swinnel Brook (2009) – 20 year defended
- River Spodden (2010) – 20 year undefended
- River Irwell and Limy Water (2011) – 20 year undefended
- Alden Brook (2012) – 25 year defended
- Crawshawbooth (2014) – 20 year undefended

A number of other river models were provided however it was not possible to extract 20 or 25 years outputs from these models

Further datasets were gained from open data on data.gov.uk:

- Flood Storage Areas (FSA) – no FSAs within Rossendale
- Historic Flood Map (HFM)
- Areas Benefitting from Defences (ABD)

The urban areas dataset, to remove 'developed areas' from the functional floodplain, was gained from OS Open Data:

- Meridian2 Urban Region dataset

2.1   GIS Methodology

- The 20 / 25 year MFOs were appended together into 1 shapefile (FZ3b_1.shp)
- The FSA layer was checked and there are no FSAs within Rossendale
- The HFM layer was appended to FZ3b_1 but only where MFOs were not provided (FZ3b_2.shp)
- The ABD layer was interrogated and it was found that there was no overlap with the MFOs
- The OS Open Data Meridian2 Urban Region dataset was used to define what is 'built up' and could therefore be removed from FZ3b. FZ3b_2 was 'erased' by the urban area dataset to remove the developed areas from FZ3b_2. (FZ3b_3.shp)
- FZ3b_3 was then clipped to the RBC boundary as the functional floodplain for this SFRA must only apply to the areas within the RBC boundary (FZ3b_4.shp)
- The final FZ3b outline (FZ3b_4.shp) was checked for sensibility and it was found that much of the remaining outline was within a watercourse and therefore not providing any use in terms of functional floodplain definition. This was the case with Dearden Brook, Irwell and Limy Water, Alden Brook and River Spodden. Also, the HFM covered buildings and roads identifiable from the OS Streetview mapping. The original source of the outlines has been preserved within the attribute table. This leaves Flood Zone 3b covering areas of Crawshawbooth on Limy Water and on Swinnel Brook

3   Considerations for the EA, LPA and LLFA

- Review the outlines of Flood Zone 3b. This is the definition we have used for a number of councils following lengthy consultation between the councils and the EA as part of Level 1 SFRAs
- Use the attribute tables to review the source of the outlines that make up FZ3b
- There are areas of functional floodplain that extend outside of Flood Zone 3 and Flood Zone 2. These areas are where the HFM has been used to delineate FZ3b. Please interrogate these areas

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and consider whether this is appropriate based on your local knowledge

- The urban area dataset used to define developed areas is very coarse therefore there are areas of FZ3b that are not built up according to OS mapping (e.g. River Ure around Ure Bank). However, it is up to the LPA / LLFA / EA to review these areas and advise JBA on their decisions. Please review these areas and consider whether it is appropriate, based on local knowledge, whether these areas should or should not be designated as FZ3b