NOTE TO FILE

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Contract	Level 1 SFRA Update
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1 Introduction

The NPPF and the Flood Risk and Coastal Change Planning Practice Guidance define functional floodplain as Flood Zone 3b which is described as land where water has to flow or be stored in times of flood and includes water conveyance routes and designated flood storage areas. CWaC have agreed the areas defined as functional floodplain with the Environment Agency, taking localised circumstances into account. The FRCC-PPG states that 'the identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters'.

The functional floodplain is usually defined by more frequent flood events, such as the 1 in 20 or 1 in 25 year flood outlines, but does not include currently developed land or areas that benefit from raised flood defences.

The EA Historic Flood Map (HFM) is included in the functional floodplain outline though flood source, return period and date of occurrence are unknown. However, as it is known that the areas covered by the HFM have flooded in the past, the precautionary approach is to include the HFM areas within the functional floodplain. The EA Flood Storage Areas (FSA) dataset is also included within the functional floodplain as the FSA includes areas designed to flood. The inclusion of the HFM means there are certain areas where the functional floodplain extends further than Flood Zone 3

The following areas are generally not included in an area of functional floodplain:

- Land already benefiting from raised flood defences as identified in the Environment Agency's Areas Benefiting from Defences (ABD) GIS layer;
- Currently developed land where no flood alleviation function has been defined - roughly defined by the OS OpenData urban dataset;
- Major transport infrastructure (e.g. roads and railways) - roughly defined by the OS OpenData urban dataset.

It is recommended that further analysis is carried out during detailed site-specific FRAs to improve the understanding and assessment of the actual risk and extent of any functional floodplain.

2 GIS Methodology

As part of this SFRA, the Environment Agency provided all of its most recent, readily available hydraulic river model modelled flood outlines for the borough. The following steps were carried out:

1. Copy the 20 year outlines from each modelling study into a separate folder. If, for any one modelling study, a 20 year outline doesn't exist then copy the 25 year outline. If neither outline exists then leave it. Note down the modelling studies used
2. Open all outlines in ArcMap. Where there are overlaps, the MOST RECENT study should supersede the older study
3. Merge all outlines into one shapefile. This is the first outline of the functional floodplain to be edited
4. Merge the Historic Flood Map shapefile into step 3
5. Erase the Areas Benefitting from Defences shapefile from step 4
6. Use the OpenData urban area shapefile to clip step 5.
7. Merge all step 6 polygons into 1 multipart polygon and then explode. Add an Area field and calculate area in m^2. Save as step 8
8. Delete all wet islands <250 m^2 from step 7
9. Fill all dry islands <750 m^2 from step 8
10. Merge the Flood Storage Areas shapefile into step 9
11. Carry out sensibility checks i.e. FSA and ABD areas, urban areas, slivers, areas of older modelling i.e. Northwich 2003, OS mapping, other flood zones