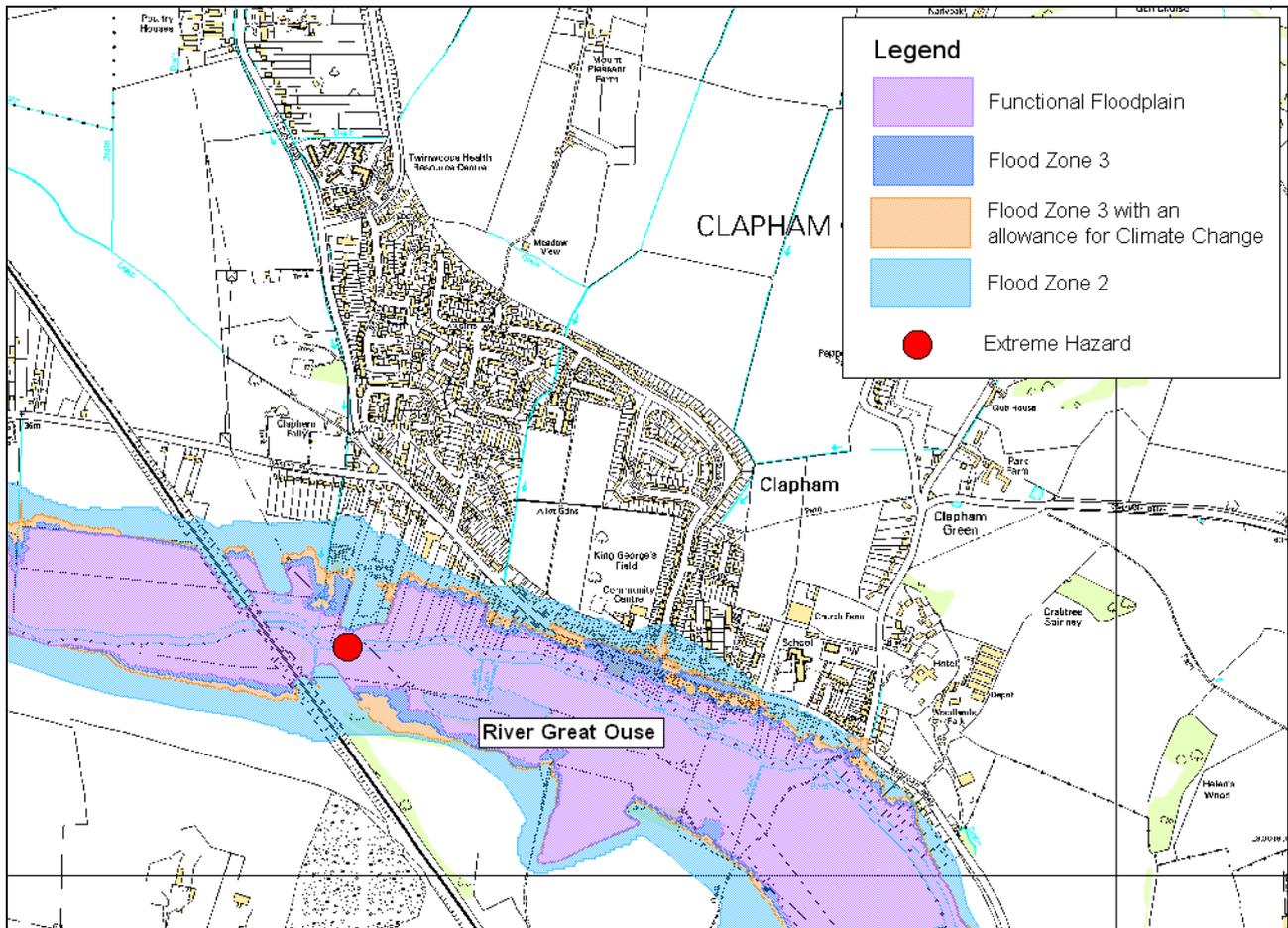


Flood Risk Overview

Key Service Centre: Clapham



Catchment Overview

Clapham is a village located to the north west of Bedford town and is fairly central within the Bedford Borough. The River Great Ouse is in close proximity to the southern extent of development in Clapham

Historical Events

During the Easter 1998 floods the River Great Ouse flooded and inundated property to the south of the High street. There have also been incidents of the A6 in Clapham flooding such that road closures have been imposed.

Fluvial Flood Risk

Clapham is at risk from fluvial flooding from the River Great Ouse. There area a number of properties in close proximity to the River Great Ouse which are within both Flood Zones 2 and 3.

As a result of this significant flood risk from the River Great Ouse Clapham is served by the Environment

Agency Flood Warning System. Clapham is located within the 052FWFG03BL flood warning area.

During the 1% AEP event it was determined that a spot location in the upstream extent of Clapham is at an extreme fluvial flood risk. This hazard classification was based on table 4 in the Environment Agency guidance for assessing and managing flood risk (Ref: 23). An extreme has is defined as 'danger for all – extreme danger, flood zone with deep fast flowing water'. If 2D modelling was carried out the hazard to the rest of Clapham could be determined.

Surface Water Flood Risk

As identified by Defra there are an estimated 130 properties at risk from surface water flooding within Clapham. This was estimated by Defra using the best available data in August 2009.

There are no areas identified to be at risk from surface water sewer flooding within Clapham according to the Anglian Water's DG5 register.

Groundwater Flood Risk

Clapham has not been identified to be at a significant risk of groundwater flooding.

Additional Flood Risk Issues

Anglian Water's DG5 register identifies that there are locations within Clapham (street level detail can not be given) that are at risk from foul sewer flooding.

Flood Risk Mitigation

At present no potential surface water mitigation options have been outlined for Clapham.

Climate Change Impact

As a result of climate change a number of additional properties along the High street will fall into Flood Zone 3, these are currently not at risk from the 1% AEP event.

Assumptions

The Bedford Ouse hydraulic model which determines flood risk resulting from the River Great Ouse was not re-run for the 0.1% AEP event due to the lack of hydrology for this return period. Thus an updated flood outline has only been produced for the functional floodplain, 1% AEP and 1% AEP with an allowance for climate change.

Existing Local Plan Development Allocations

At present there are no areas allocated for development within Clapham by Bedford Borough Council.

Recommendations for a site specific FRA

A FRA will need to be completed for any proposed development located within either Flood Zones 2 or 3 and for any development which covers an area greater than 1ha. The FRA must be completed to demonstrate;

- the level of risk to the site from current and/or future flooding from all sources;
- the development does not increase flood risk elsewhere within the catchment;
- the mitigation measures proposed are suitable to deal with flood risks and the residual risk is appropriate;
- the Sequential Test can be applied;
- the impacts of climate change have been taken into account; and
- the development passes part c of the Exception Test (if appropriate).

During the initial stages of the FRA the developer should engage in early discussions with the Environment Agency to determine if there are any specific requirements at the site.

It is recommended that the developer consults the Development and Flood Risk Guidance for the Construction Industry C624 (CIRIA, 2004) to ensure the correct level of detail is given within the FRA.

There are three drains which flow through and adjacent to, the current development within Clapham. If development is proposed in close proximity to these watercourses then it is recommended that additional hydraulic modelling is carried out to determine the risk of flooding to these sites.

For the completion of a comprehensive FRA it is recommended that the developer checklist given in Appendix G of the Bedford Water Cycle Strategy is used.

Possibilities for SuDs Implementation

Southern Clapham is located within an Outer Source Protection Zone as defined by the Environment Agency and as such the use of Infiltration SuDs is likely to be restricted. In order to determine the feasibility of infiltration SuDs then ground investigation needs to be carried out. Infiltration testing should be carried out in accordance with BRE-Digest 365, The results from these surveys should be submitted with the planning application and proposals of the SuDs strategy for individual development.

It is also specified within the Water Cycle Strategy that due to the geology in the northern half of Clapham infiltration techniques are not suitable.

Current Hydraulic Models

The River Great Ouse is the only watercourse in close proximity to Clapham which has been hydraulically modelled.