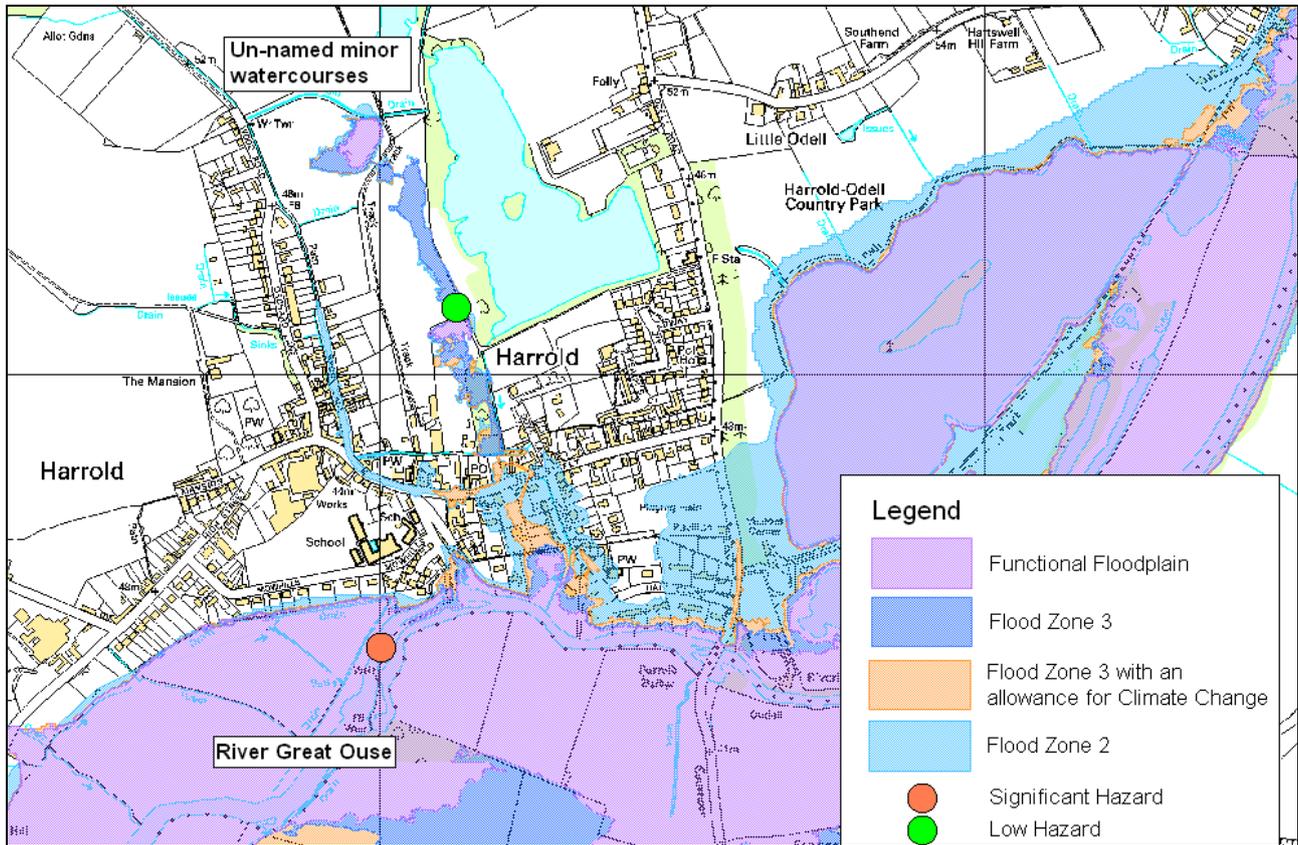


# Flood Risk Overview

## Key Service Centre: Harrold



### Catchment Overview

Harrold is a small village located in the western area of the Bedford Borough. The village is situated adjacent to the northern bank of the River Great Ouse with the Harrold-Odell Country Park to the east.

### Historical Events

Anecdotal information highlights that fluvial flooding has occurred from the River Great Ouse. One of the most significant events occurred during the Easter 1998 event when there was extensive flooding over much of the Bedford Borough area. Flooding has occurred along the High Street and at the Mill House and Cottage. On various occasions flooding has resulted in the closure for Harrold Bridge for safety reasons.

### Fluvial Flood Risk

The main source of fluvial flood risk in Harrold is from the River Great Ouse, but there is also a risk from the two un-named drains which flow north to south through the village. There are a number of properties which are within Flood Zone 2, these are located in the centre of Harrold and towards the River Great Ouse. There are

no properties located within Flood Zone 3 which are not included within Flood Zone 2.

No current development is within Flood Zone 3 associated with the un-named watercourses, however land which has the potential for development to the west of Dustin's Lake is within this Flood Zone. It is also possible that a number of properties in the centre of Harrold may experience flooding during the 0.1% AEP event.

Two hazard ratings have been given in Harrold for the 1% AEP event due to the availability of two models at this location. As expected it can be determined that fluvial flood hazard as a result the River Great Ouse is more significant than the risk presented by the un-named watercourses. A low hazard is defined as 'Caution – flood zone with shallow flowing water or deep standing water' and a significant hazard is defined as 'Dangerous for most people – danger, flood zone with deep fast flowing water'.

### Surface Water Flood Risk

There are no areas indicated to be at risk from sewer water flooding within Harrold according to Anglian

Water's DG5 register. However it was identified by Defra (Ref: 25) there are an estimated 140 properties at risk from surface water flooding within Harrold.

### **Groundwater Flood Risk**

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

### **Flood Risk Mitigation**

The alleviation system which includes the two lakes to the east of Harrold is used to manage flood risk in the centre of Harrold. However the potential use of this facility as a large scale flood mitigation resources is unknown.

### **Climate Change Impact**

As a result of climate change a number of properties on High Street currently not at risk from the 1% AEP event from the un-named watercourses will be located within Flood Zone 3.

It is likely there will be a minimal impact of climate change on the River Great Ouse Flood Zone 3, with no additional properties located within the climate change scenario Flood Zone 3 in comparison to the present Flood Zone 3.

### **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 Harrold 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 the 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.

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**

It is proposed within the Water Cycle Strategy that the use of infiltration SuDs techniques are likely to be suitable in Harrold due to the underlying geology. However this must be confirmed by undertaking infiltration testing which should be carried out in accordance with BRE-Digest 365, This option should be considered within any site specific FRA for proposed development within Harrold.

### **Current hydraulic models**

Flood Zone mapping for Harrold has been produced using two separate hydraulic models. One covers the two un-named watercourses which flow north to south through the village, the other covers the River Great Ouse which flows in an easterly direction to the south of the Harrold. These two models have been completed for the Environment Agency by Atkins.