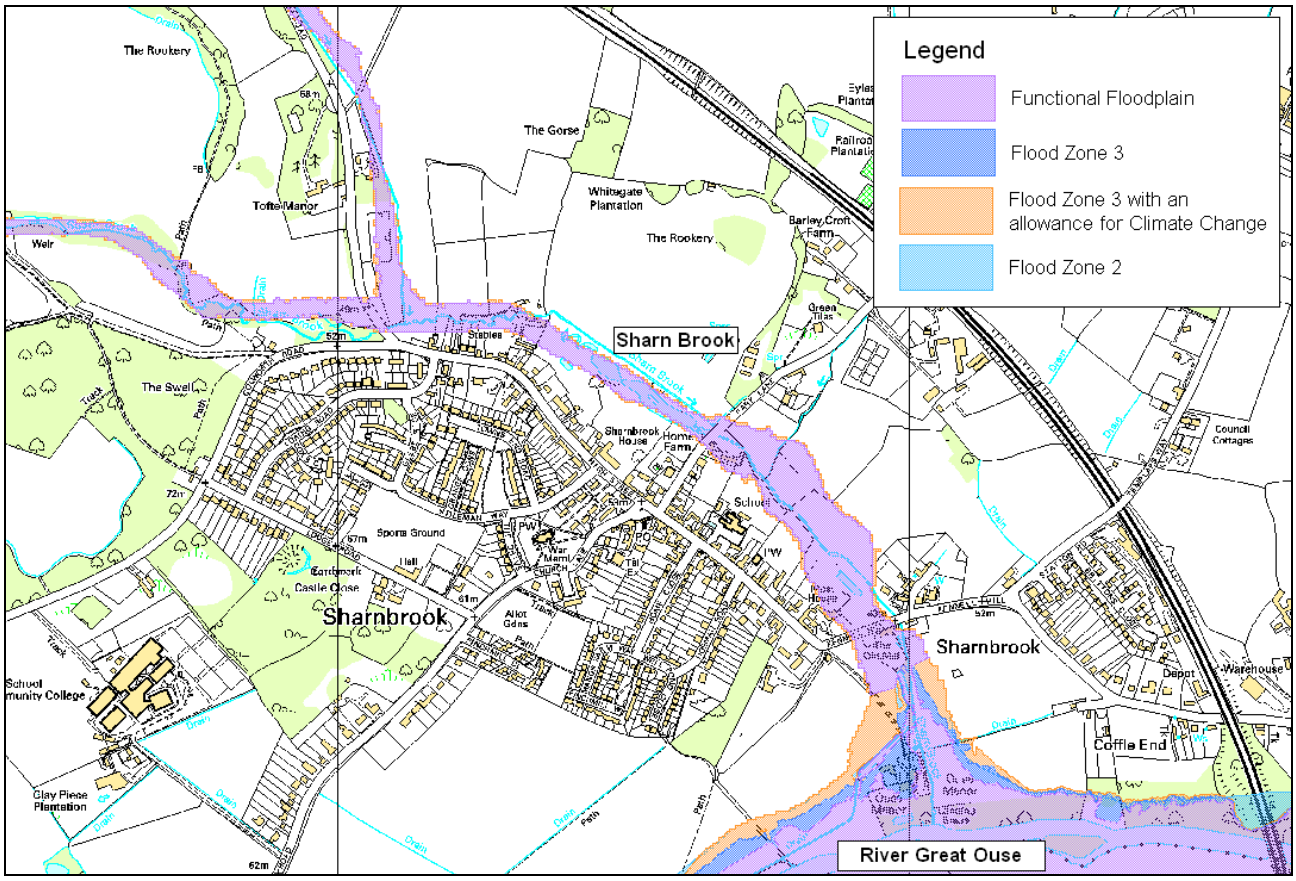
Flood Risk Overview

Key Service Centre: Sharnbrook



Catchment Overview

Sharnbrook is a village located in the north west of the Bedford Borough and is enclosed with the River Great Ouse to the south and the A6 to the east and north.

Historical Events

Mill Road underneath the railway is prone to flooding which results in road closure. This is possibly due to blockages in the highway drains or at the outfall to the river.

In addition flooding has occurred in the vicinity of the Old Mill where the river banks have breached and surrounding fields have been inundated.

Fluvial Flood Risk

Development in Sharnbrook is not at risk from the River Great Ouse, but the Sharn Brook which is situated on the north-east extent of current development poses a fluvial flood risk. All of the current development in Sharnbrook is located outside Flood Zones 2 or 3 with the exception of a small number of properties, located in close proximity to Sharn Brook.

Surface Water Flood Risk

There are no incidents of sewer water flooding within Sharnbrook included within Anglian Water's DG5 register.

As identified by Defra it is estimated less than 10 properties are at risk from surface water flooding within Sharnbrook. This was estimated by Defra using the best available data in August 2009.

Groundwater Flood Risk

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

Flood Risk Mitigation

It is possible that the water filled gravel pits to the south of Sharnbrook could present an opportunity for strategic storm/flood water management.

Climate Change Impact

The impact of climate change on fluvial flooding for the 1% AEP event is negligible and no additional properties will be at risk from the 1% AEP plus climate change event which are not currently situated within Flood Zone 3.

Uncertainty

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.

The Sharn Brook located in the eastern extent of Sharnbrook has not been explicitly modelled. As such the flood outlines along this watercourse are a best estimate and are likely to be altered if hydraulic modelling was carried out.

Existing Local Plan Development Allocations

At present there are no areas allocated for development within Sharnbrook 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.

The Sharn Brook and a number of un-named watercourses are located to the north and south of Sharnbrook respectively. These un-modelled watercourses may present a fluvial flood risk to both current and new development in Sharnbrook and as such it is recommended that if proposed development is located in close proximity to these watercourses then additional hydraulic modelling should be carried out.

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 specified within the Water Cycle Strategy that due to the favourable nature of the geology at Sharnbrook that infiltration SuDs techniques are likely to be viable. However this must be confirmed by undertaking infiltration testing which should be carried out in accordance with BRE-Digest 365,

Current Hydraulic Models

At present the River Great Ouse is the only watercourse within close proximity to Sharnbrook that has been hydraulically modelled.