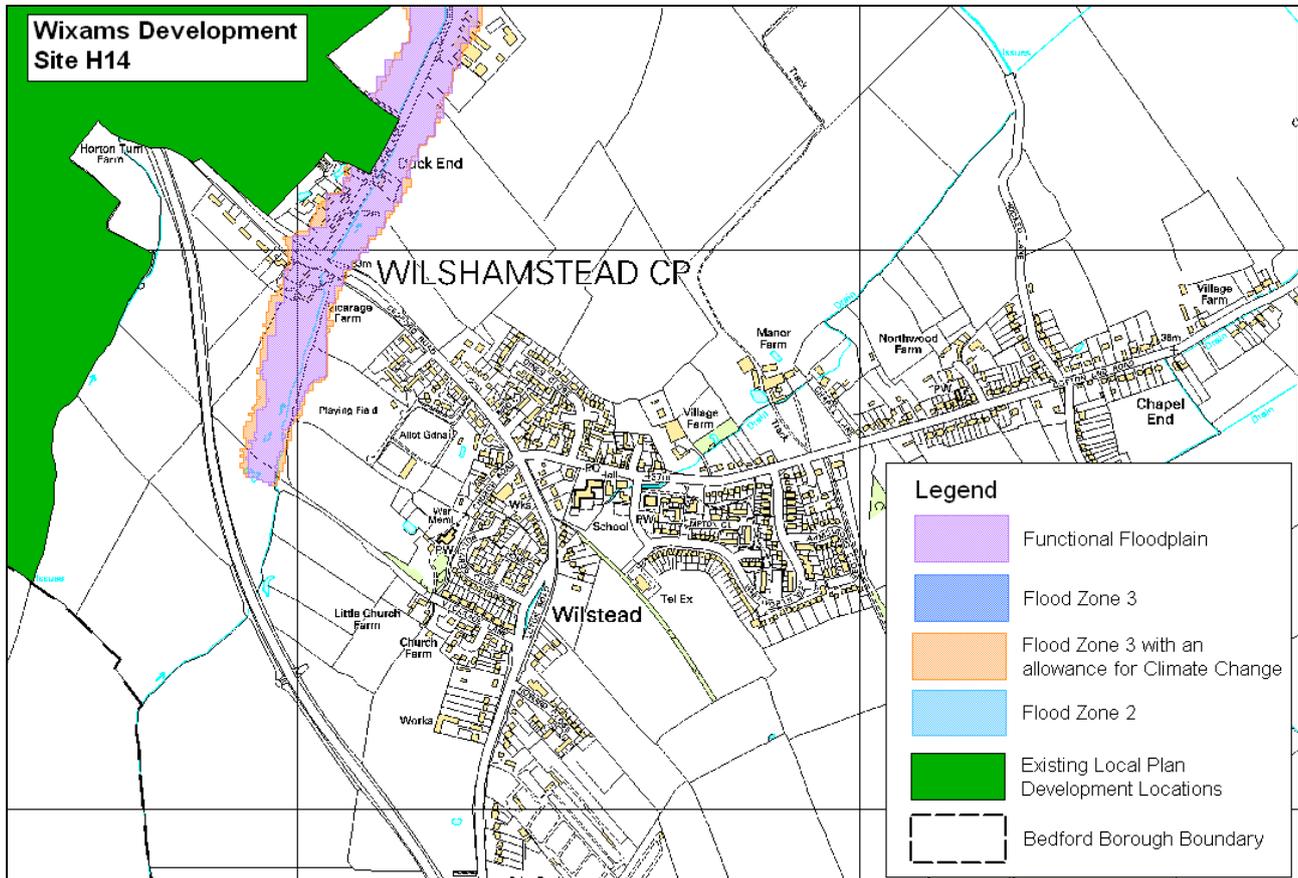


Flood Risk Overview

Key Service Centre: Wilstead



Catchment Overview

Wilstead is a village located in the southern extent of the Bedford Borough to the east of the A6 and north of Wilstead Wood.

Historical Events

Fluvial flood events have occurred in and around Wilstead. There are a number of properties within the centre of Wilstead that have only flooded during extreme events. However there are locations to the east and west of Wilstead which have experience more regular and recent flood events.

Flooding events that have occurred in Wilstead were originally thought to be the result of groundwater flooding, however further investigation does not support this. It is possible that these events were actually the result of surface water flooding.

Fluvial Flood Risk

Current development in Wilstead is not located within either Flood Zones 2 or 3. However Flood Zone 2 of a

tributary of Elstow Brook is within approximately 100m of development at the north east extent of Wilstead.

In addition there is a minor un-modelled drain which flows through the centre of Wilstead that has the potential to present a flood risk to this Key Service Centre. Thus if development is proposed in close proximity to this drain, particularly to the north of Wilstead then hydraulic modelling may be required for the purposes of the FRA which would be required for submission with the planning application.

Surface Water Flood Risk

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

As identified by Defra there are an estimated 100 properties at risk from surface water flooding within the industrial estate in Wilstead. This was estimated by Defra using the best available data in August 2009.

Groundwater Flood Risk

It has been reported that Wilstead lies wet but, it is unlikely that Wilstead is at risk from ground water flooding because the site is situated on Oxford Clay and Kellaways Beds with no overlying superficial deposits. It is possible that the wet nature of the land is due to factors such as local topography and surface drainage rather than a raised groundwater level.

Flood Risk Mitigation

The Internal Drainage Board (IDB) operate a flood storage reservoir to the south of Wilstead to reduce flood risk to the village.

Climate Change Impact

It is likely there will be a minimal impact of climate change on 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 modelling used for determining the Flood Zones in proximity to Wilstead was not made available for this report and thus was not re-run for either the functional floodplain or the climate change scenario. Thus the Flood Zones 2 and 3 made available from the Environment Agency were used to represent the Functional Floodplain (Flood Zone 3) and the climate change scenario (Flood Zone 2).

Existing Local Plan Development Allocations

There are no areas allocated for development within Wilstead, however the eastern edge of the Wixams (site code H14) allocated area falls in close proximity to Wilstead. The majority of this allocation falls within Flood Zone 1 and as such development type is not restricted based on flood risk. However there is a small area located within all the Flood Zones and as such flood compensation would be required.

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 IDB and 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 a number of drains which are located around Wilstead. If development is proposed in close proximity to these watercourses, such as within the allocated areas to the north west of Wilstead, it would be recommended that hydraulic modelling is carried out to identify Flood Zones associated with these watercourses.

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 suggested within the Water Cycle Strategy that with the exception of an area in the South Eastern extent of Wilstead, that infiltration SuDs techniques would not be suitable. Ground investigations would be required if infiltration techniques were proposed in the South Eastern extents of Wilstead. Infiltration testing should be carried out in accordance with BRE-Digest 365,

Current Hydraulic Models

There are currently no hydraulic models for the watercourse in Wilstead, however a hydraulic model does exist for the watercourse to the north west of the current development.