Giffords Farm, St Ives				
OSNGR: 532312,272482	Area: 5.57ha		Greenfield	
Flood Zone Coverage:	**FZ3b** 0%	**FZ3a** 2%	**FZ2** 13%	**FZ1** 85%

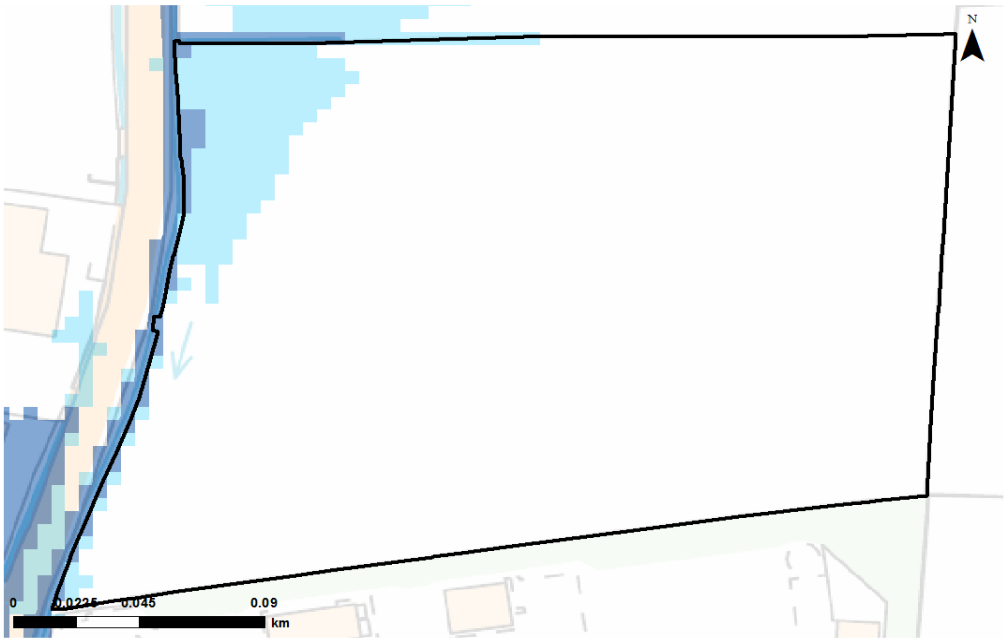
Sources of flood risk:

Fluvial flood risk is from a tributary of the River Great Ouse and is restricted to the north west corner of the site. Surface water flooding poses more of a risk to the site, mainly located along the north and the western boundaries of the site.

Exception Test Required?

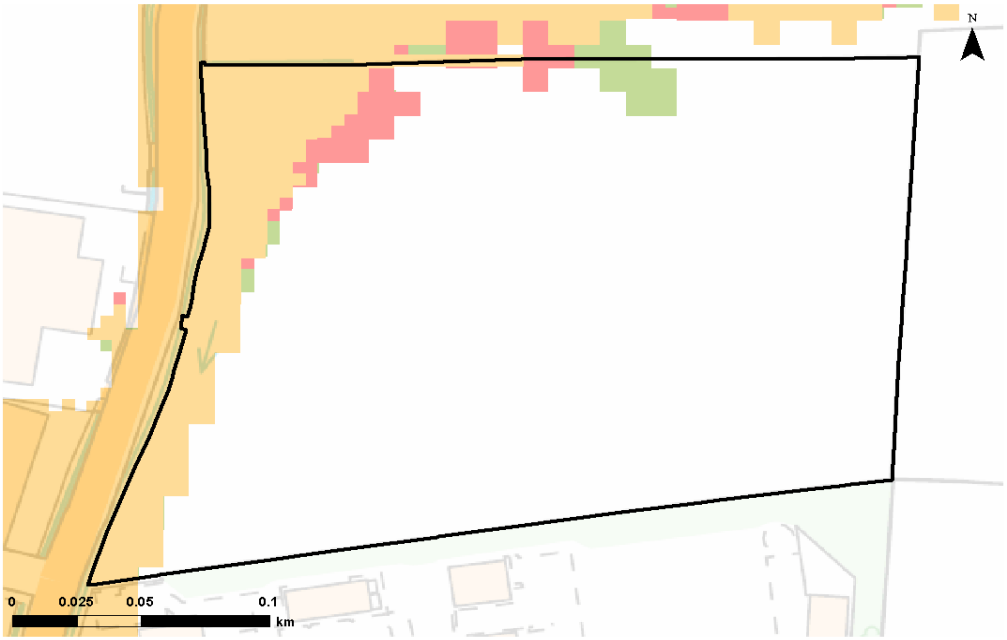
Yes, for Highly Vulnerable development located in Flood Zone 2.

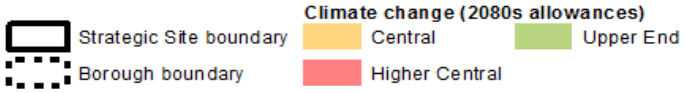
Flood Zone Map



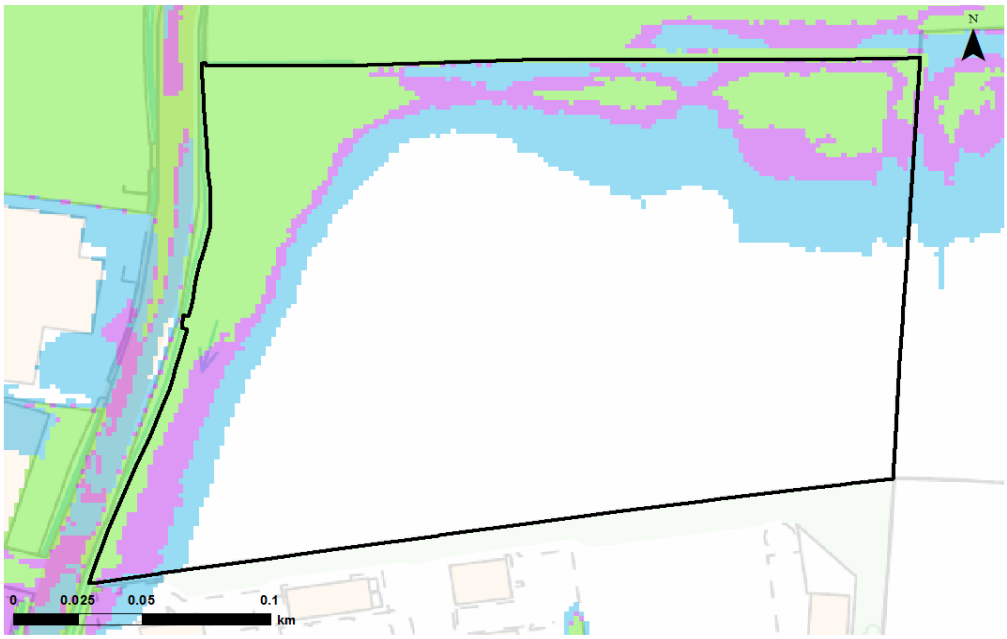
Potential development location
Council boundary
Flood Zone 3b
Indicative Extent of Flood Zone 3b
Flood Zone 3a
Flood Zone 2

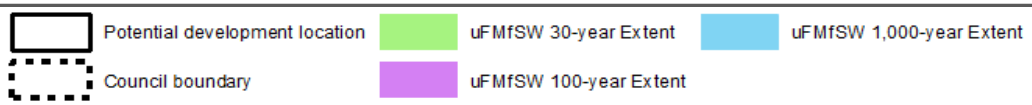
Climate Change Map



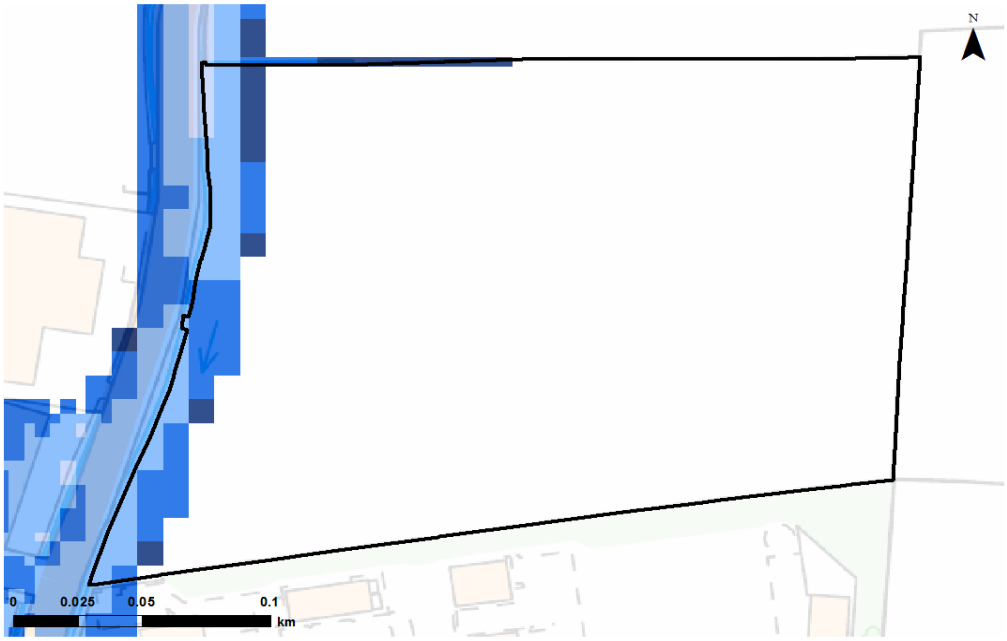


Surface Water Map





Depth Map - fluvial flooding (1% Annual exceedance probability)



Potential development location
Council boundary

Depth (m)
0 - 0.10
0.10 - 0.50
0.50 - 1.00
1.00 - 1.50
1.50 - 2.00
2.00 - 2.50
2.50 - 3.00
3.00 - 3.50
3.50 - 4.00
>4.00

Velocity Map - fluvial flooding (1% Annual exceedance probability)

Potential development location
Council boundary

Velocity (m/s)
0 - 0.2
0.2 - 0.5
0.5 - 1.0
1.0 - 2.0
> 2.0

Hazard Map - fluvial flooding (1% Annual exceedance probability)

Potential development location
Council boundary
Hazard Rating
Very low hazard - caution
Danger for some
Danger for most
Danger for all

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		All forms of source control are likely to be suitable.
Infiltration		Infiltration likely to be suitable. Mapping suggests a low risk of ground water flooding; however, site investigations should be carried out to assess potential for drainage by infiltration.
Detention		Mapping suggests that the site slopes are suitable for all forms of detention.
Filtration		All filtration techniques are likely to be suitable. If the site has contamination issues; a liner will be required.
Conveyance		All forms of conveyance are likely to be suitable. Where the slopes are >5% features should follow contours or utilise check dams to slow flows. If the site has contamination issues; a liner will be required.

Drainage strategies should demonstrate that an appropriate number of treatment stages have been delivered. This depends on the factors such as the type of development, primary source of runoff and likelihood of contamination. Guidance should be sought from the LLFA and other guidance documents such as the CIRIA SuDS Manual (C753).

Flood Defences:

There are no flood defences at this site.

Emergency Planning:

There are currently no flood warning areas covering this site.

Access & Egress:

The main access and egress route for the site is Somersham Road. This road may potentially be affected by both fluvial and surface water flooding.

Climate Change:

Currently the site is only slightly covered by Flood Zone 3. However, modelling shows that the 1% AEP event will cover the site when the Central, Higher Central and Upper End climate change allowances are applied. This suggests that, in the future, what is currently considered as Flood Zone 2 may become Flood Zone 3.
Climate change may increase the extent of surface water flooding in the future.

Implications for Development:

Use of the Sequential Approach means, given the size of the site, development can be placed away from the Flood Zones 2 and 3, with the small area affected by flooding left undeveloped. Approximately 4.7 hectares of land is available outside of the Flood Zones.
Safe access and egress is an issue for this site. Development will need to ensure that access and egress is possible during times or flood.
Broadscale assessment of suitable SuDS has indicated a number of different types may be possible; given the size of the site, the type of SuDS system used is less likely to be limited by the amount of land available for development.
The site is not covered by the Environment Agency's Flood Warning Service. However, if development is placed outside of the Flood Zones, then access to a Flood Warning would not be required.
The site is not known to benefit from any flood defences. Given the size and location of the site, it is unlikely the site could be used to implement strategic solutions to alleviate flood risk elsewhere in the Great Ouse catchment given the land requirement that any strategic storage solution would require.

Guidance for Developers:

Mapping in this table differs from the Flood Map from Planning as it is based on results from the Environment Agency's Heath Drain 2D model. More detailed modelling has been developed by PBA consultants in this area but was not available at the time of preparing this report.
At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2 or 3. Other sources of flooding should also be considered. Where a site specific FRA has produced modelling outlines which differ from the Flood Map for Planning then a full evidence based review would be required; where this is acceptable to the EA then amendments to the Flood Map for Planning may take place.
Resilience measures will be required if buildings are situated in the flood risk area.
The peak flows on the tributary should be considered when considering drainage.
Assessment for runoff should include allowance for climate change effects.
New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.
Onsite attenuation schemes would need to be tested against the hydrographs of the tributary to ensure flows are not exacerbated downstream within the catchment.
Safe access and egress will need to be demonstrated; currently access and egress is affected by surface water flooding and fluvial flooding from a 0.1% AEP event.
New development must seek opportunities to reduce overall level of flood risk at the site, for example by:

- Reducing volume and rate of runoff
- Relocating development to zones with lower flood risk
- Creating space for flooding.
- Green infrastructure should be considered within the mitigation measures for surface water runoff from potential development and consider using Flood Zones 2 and 3 as public open space.

Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.