

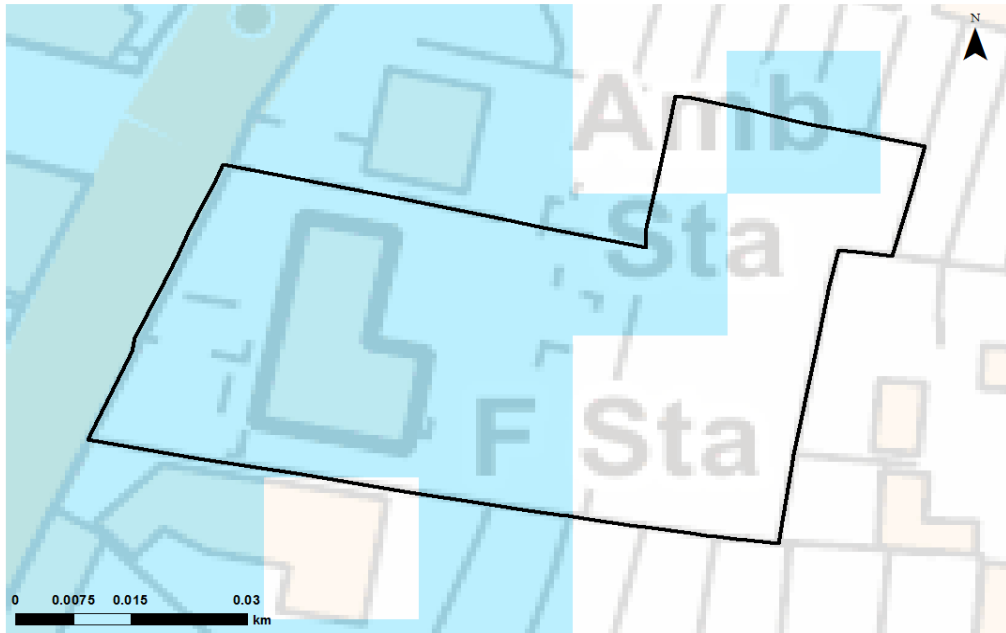
St Neots Fire Station and vacant land (SN5)

OSNGR: 518703,260716	Area: 0.41ha		Brownfied	
Flood Zone Coverage:	FZ3b 0%	FZ3a 0%	FZ2 68%	FZ1 32%

Sources of flood risk:
 The main sources of flood risk to the site is from the River Great Ouse and from surface water. However, Flood Zones show the site does not flood until a 0.1% AEP event.

Exception Test Required?
 Yes, for Highly Vulnerable development located in FZ2.

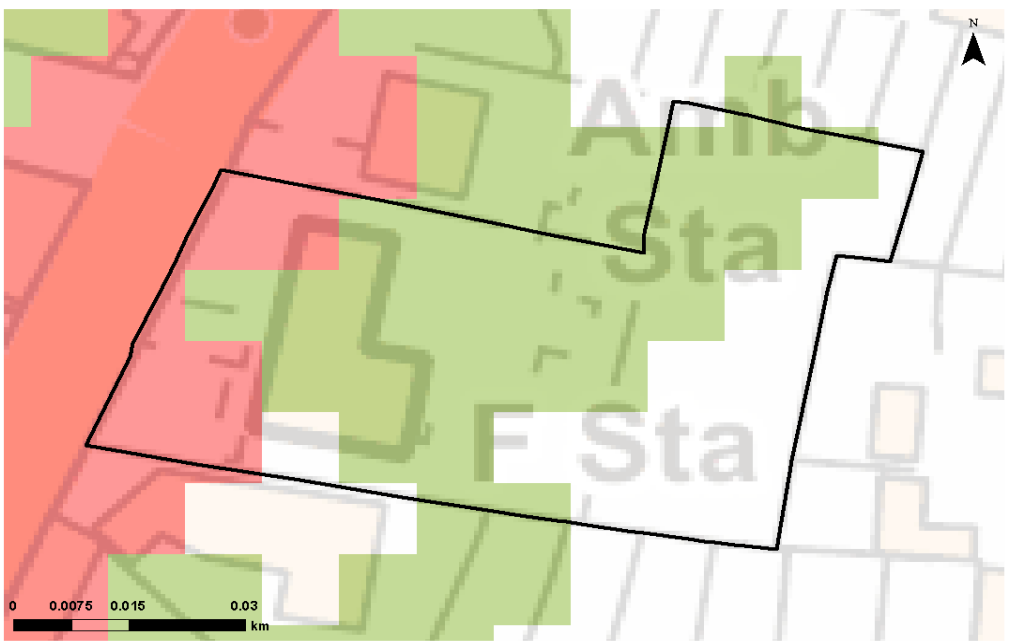
Flood Zone Map



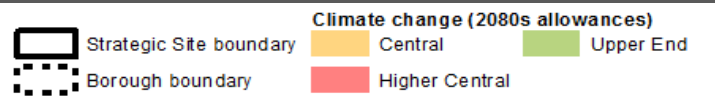
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 Potential development location	 Flood Zone 3b	 Flood Zone 3a
 Council boundary	 Indicative Extent of Flood Zone 3b	 Flood Zone 2

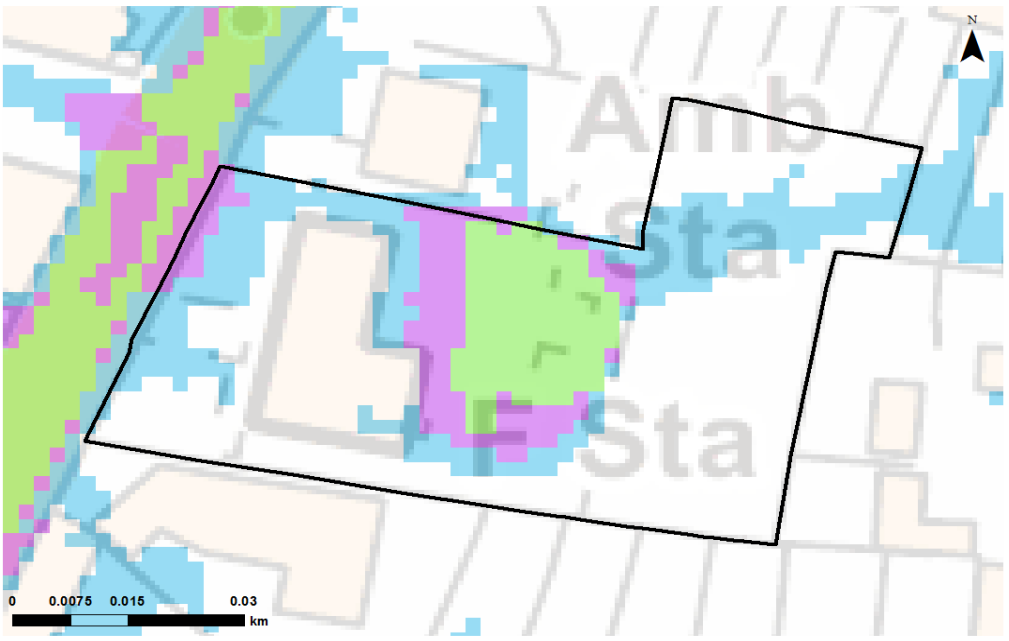
Climate Change Map



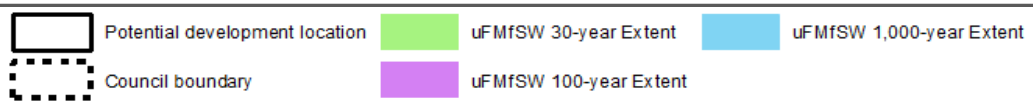
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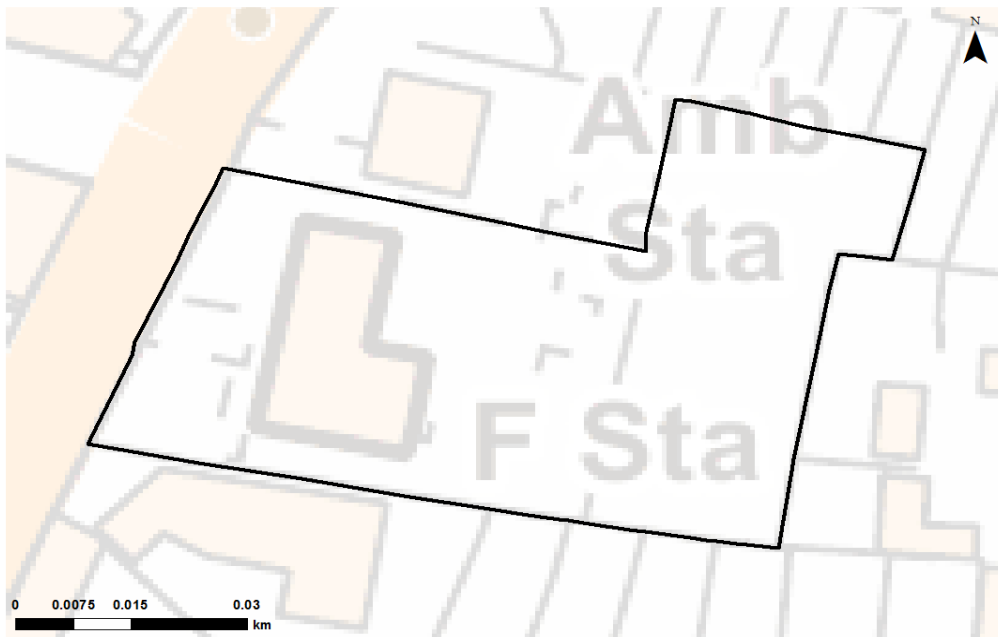
Surface Water Map



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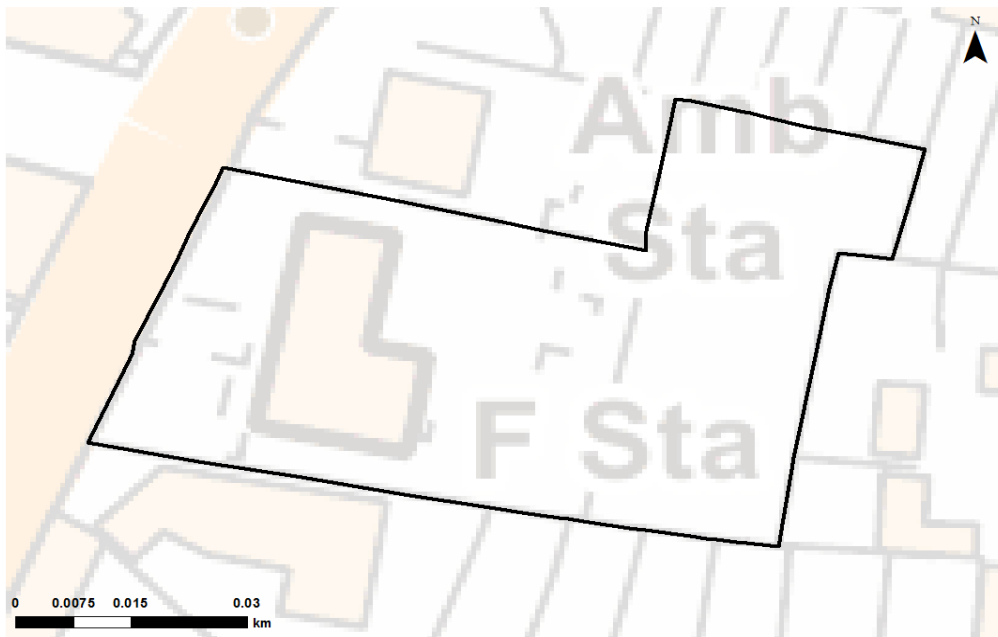
Depth Map - fluvial flooding (1% Annual exceedance probability)



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Potential development location	Depth (m)	0.50 - 1.00	2.00 - 2.50	3.50 - 4.00
Council boundary	0 - 0.10	1.00 - 1.50	2.50 - 3.00	>4.00
	0.10 - 0.50	1.50 - 2.00	3.00 - 3.50	

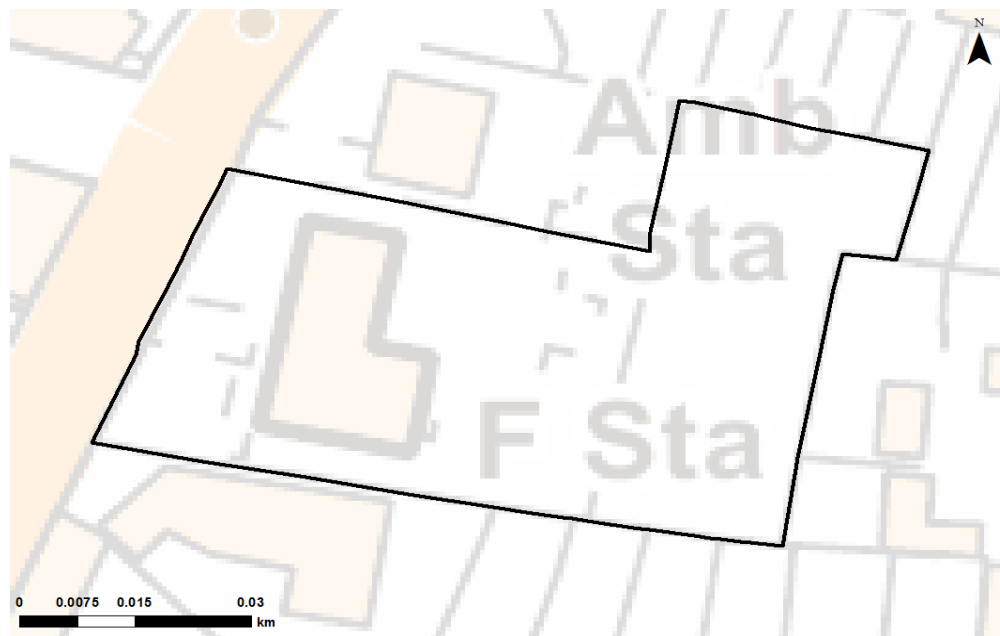
Velocity Map - fluvial flooding (1% Annual exceedance probability)









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Potential development location	Velocity (m/s)	0.2 - 0.5	1.0 - 2.0
Council boundary	0 - 0.2	0.5 - 1.0	> 2.0






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



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

SuDS & the development site:

SuDS Type	Suitability	Comments
Source Control		Most source control techniques are likely to be suitable. Mapping suggests that permeable paving may have to use non-infiltrating systems given the possible risk from groundwater and that the site is classified as Brownfield.
Infiltration		Mapping suggests that there is a high risk of groundwater flooding at this location, therefore it is possible infiltration techniques will not be suitable.
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required to prevent the egress of groundwater and if there are any contamination issues.
Filtration		This feature is probably suitable provided site slopes are <5% and the depth to the water table is >1m. A liner maybe required to prevent the egress of groundwater and if there are any contamination issues.
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. A liner maybe required to prevent the egress of groundwater and if there are any contamination issues.

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:

This site is covered by the River Great Ouse from Tempsford to Offord Flood Warning Area

Access & Egress:

Access to the site is via Huntingdon Street, which is shown to be at risk in the 0.1% AEP event. It is also shown to be considerably at risk of flooding from surface water.

Climate Change:

Approximately two thirds of the site is in Flood Zone 2. However, climate change modelling shows that when the Higher Central and Upper End climate change allowances are applied to the 1% AEP event, flooding occurs within the site. This suggests that in the future, what is currently considered Flood Zone 2 may become Flood Zone 3. Climate change may increase the extent and depth of surface water flooding in the future.

Implications for Development:

Use of the Sequential Approach is limited due to the amount of the site that is covered by Flood Zone 2; therefore any Highly Vulnerable development placed within Flood Zone 2 will be required to pass the Exception Test. As less than half the site is in Flood Zone 1, there may be implications for the amount and type of development for the site. Access and egress routes are at risk from both fluvial and surface water flooding; in order to pass the Exception Test, development will need to ensure that safe access and egress can be provided for the lifetime of the development. Development should also ensure that there is no increase in flood risk that may exacerbate flooding to routes. Broad-scale assessment of suitable SuDS has indicated a number of different types may be possible; however, given the size of the site and the proportion of the site at risk from flooding, the type of SuDS system used may be influenced by amount of land available; depending on the system used there may be an impact on the amount of land available for development and the cost of development. The site is covered by the Environment Agency's Flood Warning Service. Given the potential access and egress issues, development may need to consider provision of safe refuge in the event of occupiers being unable to evacuate. 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 catchment.

Guidance for Developers:

[Mapping in this table is based on results from the Environment Agency's Upstream Ouse 1D-2D model.](#)
 At the planning application stage, a site-specific flood risk assessment will be required if any development is located within Flood Zones 2. 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 River Great Ouse 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 River Great Ouse 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:

- o Reducing volume and rate of runoff
- o Relocating development to zones with lower flood risk
- o Creating space for flooding.
- o 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.