

### Thrapston Road, north and west of Church Road

|                             |                   |                    |                   |                   |
|-----------------------------|-------------------|--------------------|-------------------|-------------------|
| <b>OSNGR:</b>               | 521474,271132     | <b>Area:</b> 5.74  | <b>Greenfield</b> |                   |
| <b>Flood Zone Coverage:</b> | <b>FZ3b</b><br>7% | <b>FZ3a</b><br>10% | <b>FZ2</b><br>24% | <b>FZ1</b><br>59% |

#### Sources of flood risk:

The main source of flood risk to the site is from the Alconbury Brook which flows to the north of the site. Flood risk from surface water is small for this site, consisting of small pockets in the centre of the site.

#### Exception Test Required?

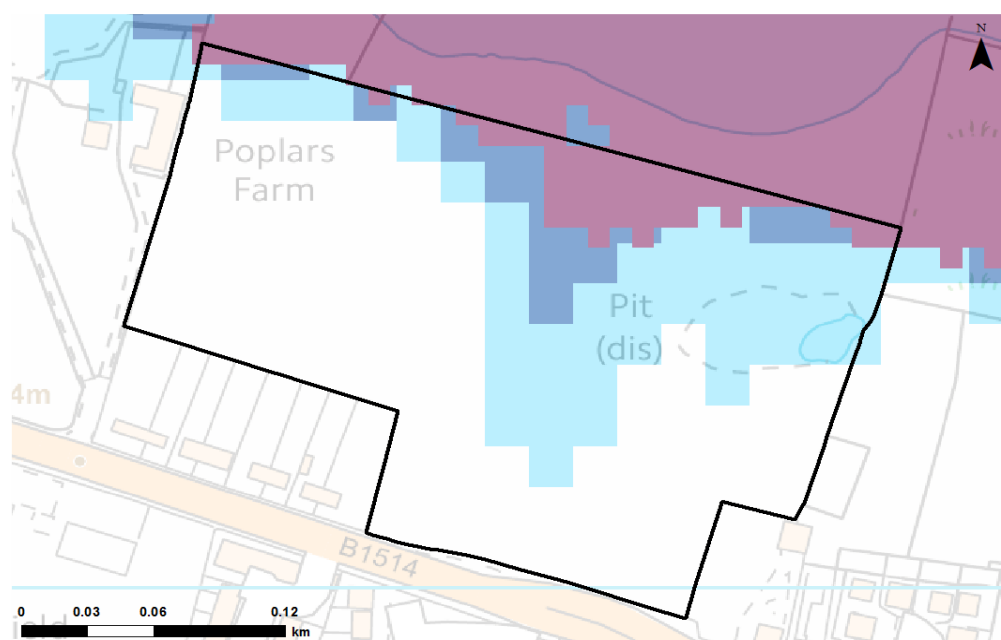
Yes, if More Vulnerable and Essential Infrastructure development is located in FZ3a and for Highly Vulnerable development located in FZ2.

Highly Vulnerable infrastructure should not be permitted within FZ3a and FZ3b.

More Vulnerable and Less Vulnerable Infrastructure should not be permitted within FZ3b.

Essential Infrastructure in Flood Zone 3b will require the Exception Test.

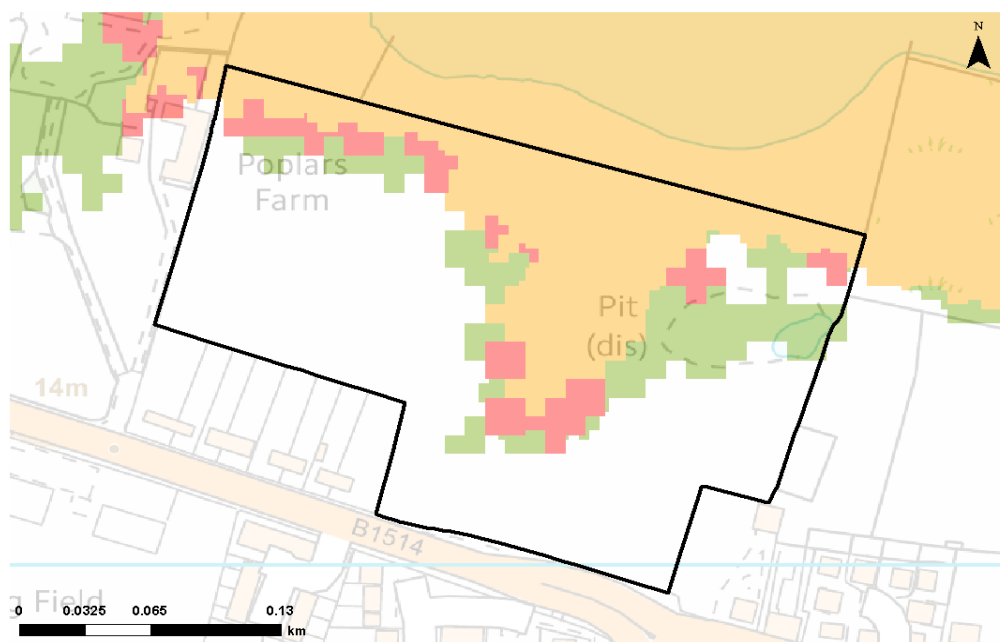
#### Flood Zone Map



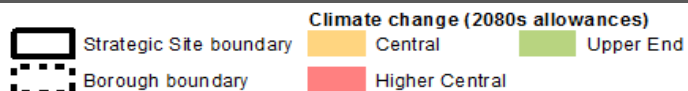
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|  |                                |  |                                    |  |               |
|--|--------------------------------|--|------------------------------------|--|---------------|
|  | Potential development location |  | Flood Zone 3b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

## Climate Change Map



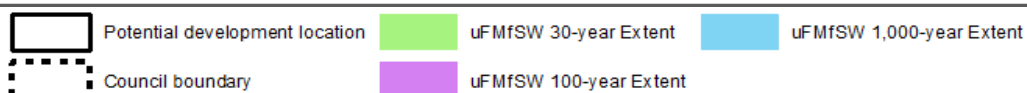
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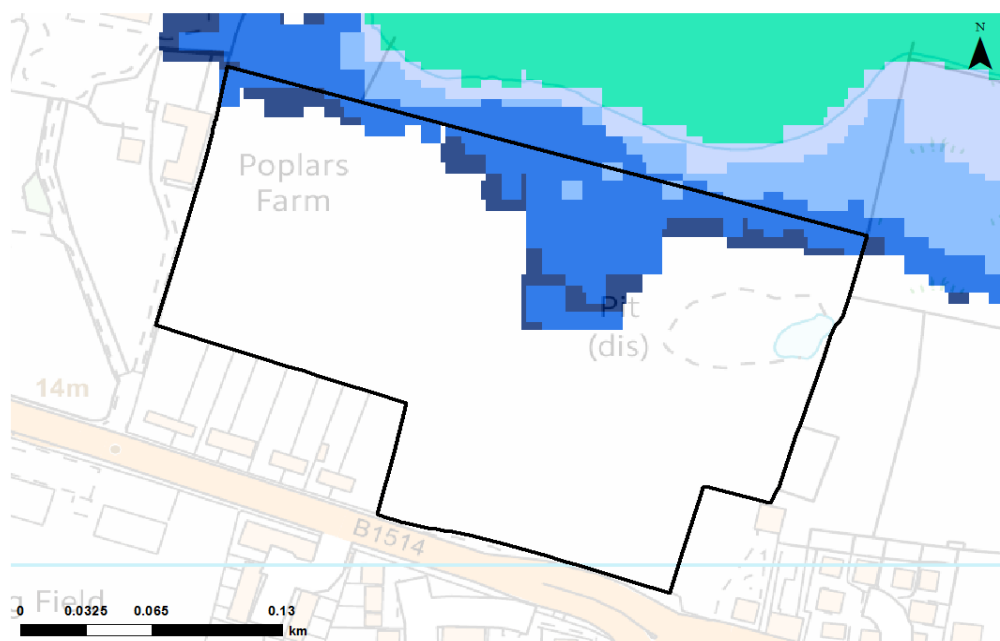
## Surface Water Map



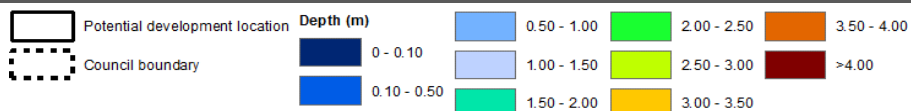
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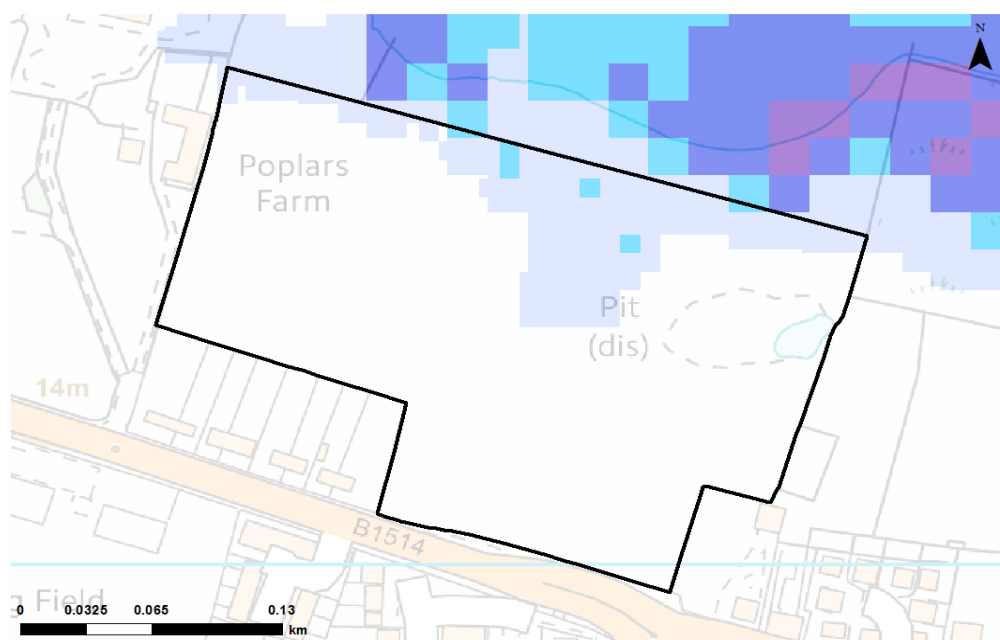
### Depth Map - fluvial flooding (1% Annual exceedance probability)



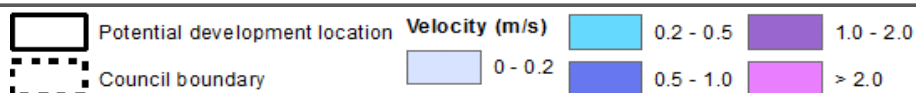
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### Velocity Map - fluvial flooding (1% Annual exceedance probability)



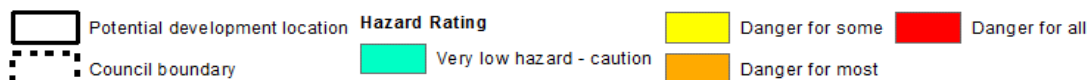
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### Hazard Map - fluvial flooding (1% Annual exceedance probability)



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### 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.                                                                      |
| 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 may be 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 may be 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 may be 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:**

There are currently no flood warning areas covering this site.

#### **Access & Egress:**

The main access and egress route for the site, the B1514, is unaffected by fluvial flooding and is only affected by a slight ponding of surface water in the 0.1% AEP event.

#### **Climate Change:**

Climate change modelling suggest that in the future, that the extent of Flood Zone 3a may increase and what is currently Flood Zone 2 may become Flood Zone 3 during a 1% AEP event with the Upper End 2080s climate change allowance applied. The extent, depth and velocity of flooding from the Alconbury Brook may also increase, resulting in a greater hazard to people.

Climate change may increase the extent and depth of surface water flooding in the future.

#### **Implications for Development:**

Use of the Sequential Approach will be required to place vulnerable development outside of high risk areas.

Safe access and egress is not affected by flooding. Approximately 3.2 hectares of the site is outside of Flood Zones 2 and 3.

Broadscale 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 not covered by the Environment Agency's Flood Warning Service. However, if development is placed outside of the Flood Zones, 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 itself 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 Alconbury Brook 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 or 3. 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 Alconbury Brook 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 Alconbury Brook to ensure flows are not exacerbated downstream within the catchment.

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.