

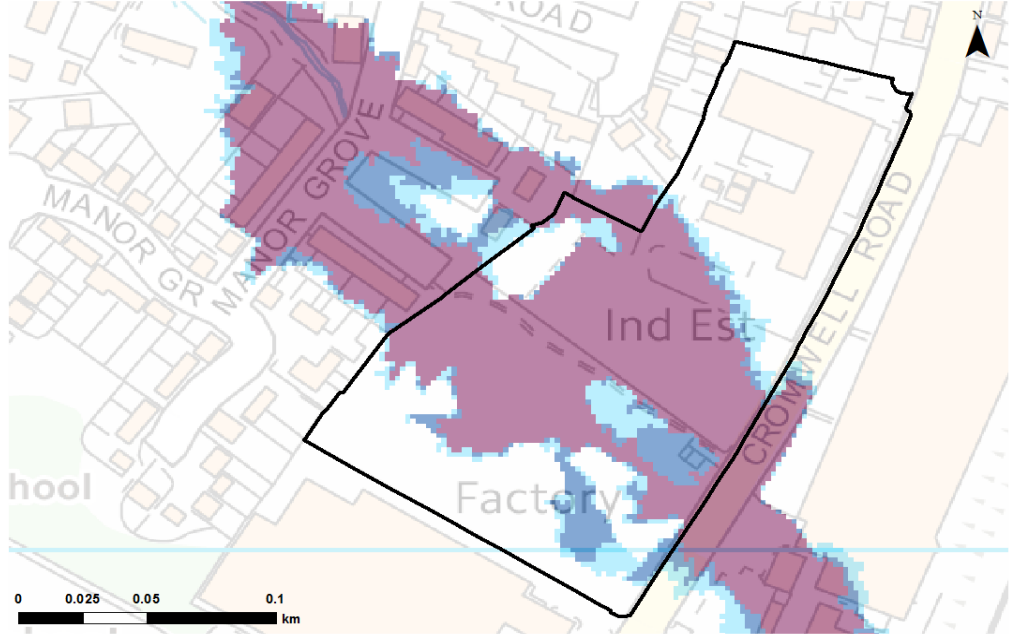
Cromwell Road North, St Neots

OSNGR: 519388,260090	Area: 2.61ha		Brownfield / greenfield	
Flood Zone Coverage:	FZ3b 32%	FZ3a 2%	FZ2 2%	FZ1 64%

Sources of flood risk:
 Flood risk is from an unnamed tributary of the Fox Brook with almost half of the site located within Flood Zone 2 and 3. The site is also shown to be significantly affected by surface water flooding, the location of which tends to correspond to the area of fluvial flood risk.
 It should be noted that the watercourse is culverted through the site; modelling and mapping techniques may not have considered this culvert when defining Flood Zones;

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

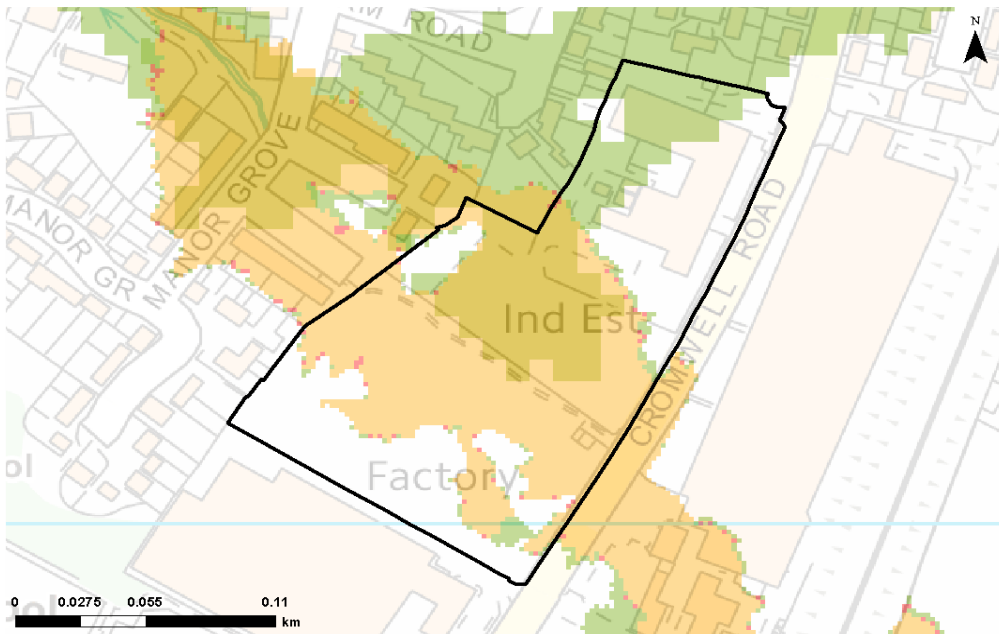
Flood Zone Map



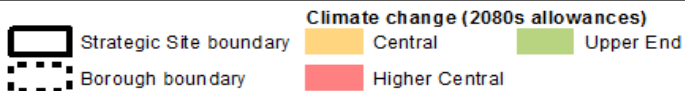
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	Potential development location		Flood Zone 3b		Flood Zone 3a
	Council boundary		Indicative Extent of Flood Zone 3b		Flood Zone 2

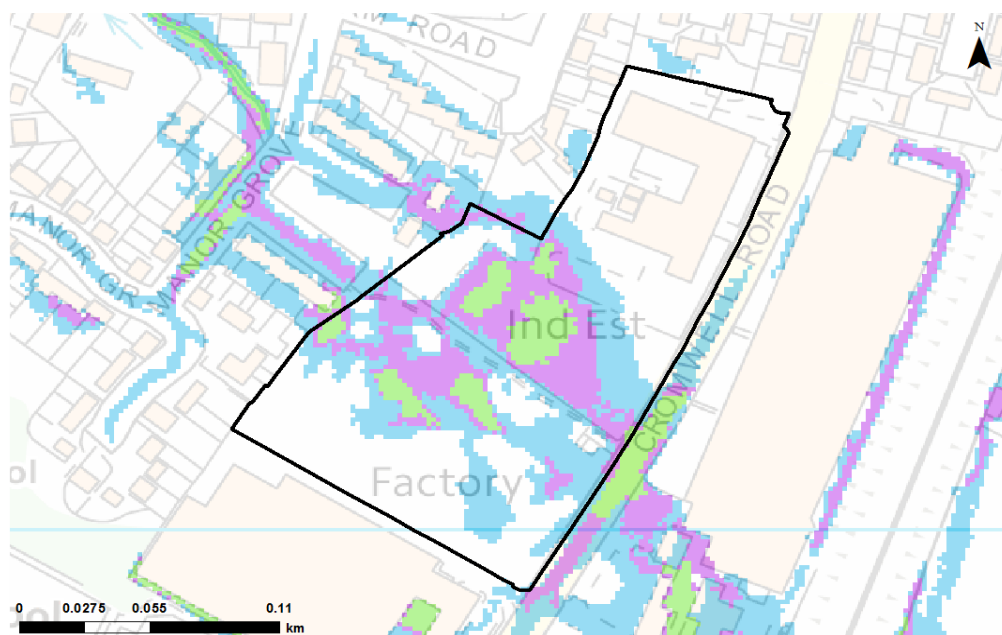
Climate Change Map



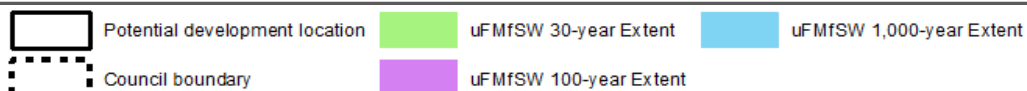
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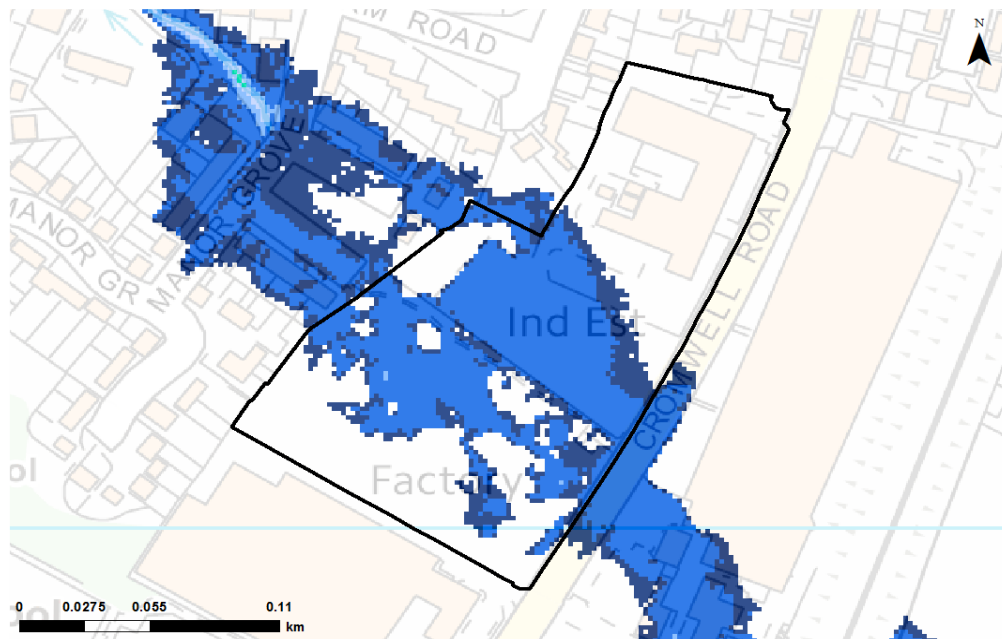
Surface Water Map



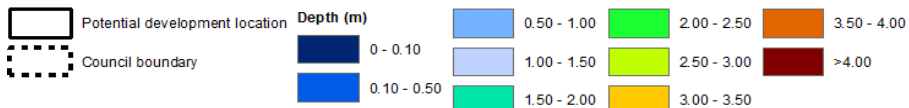
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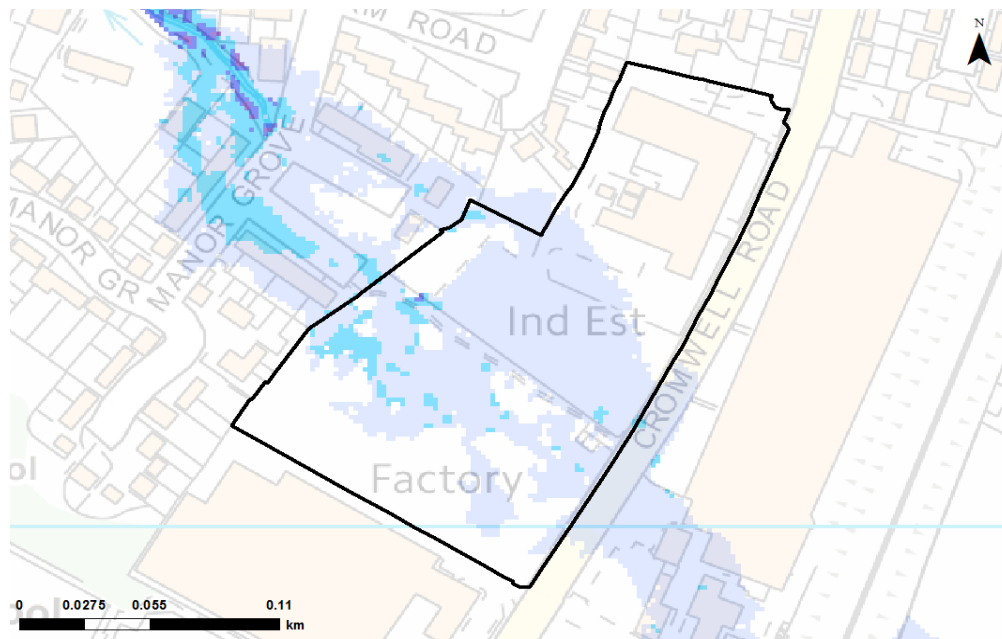
Depth Map - fluvial flooding (1% Annual exceedance probability)



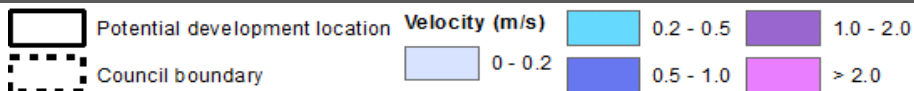
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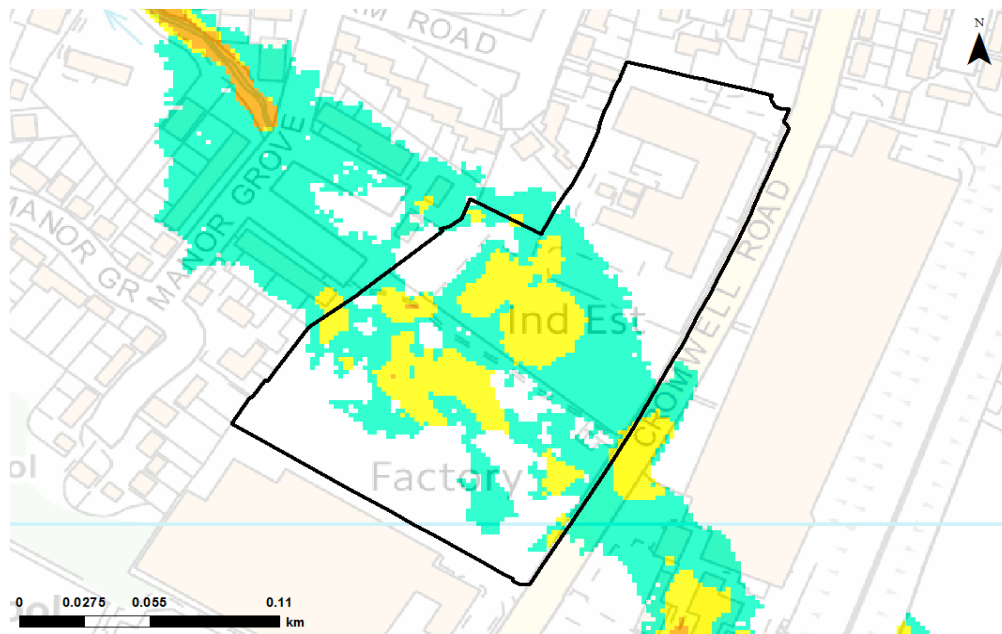
Velocity Map - fluvial flooding (1% Annual exceedance probability)



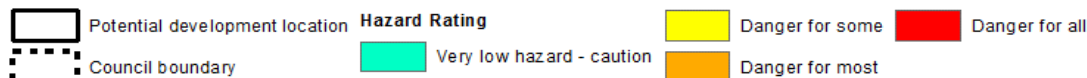
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Hazard Map - fluvial flooding (1% Annual exceedance probability)



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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 and that the site is classified as Brownfield.
Infiltration		Infiltration may be suitable. Mapping suggests a medium risk of groundwater flooding and underlying soils may be permeable. Further site investigation should be carried out to assess potential for drainage by infiltration. If infiltration is suitable it should be avoided in areas where the depth to the water table is <1m.
Detention		Mapping suggests that the site slopes are suitable for all forms of detention. A liner may be required due to the site potential groundwater flooding or if there are any contamination issues.
Filtration		All filtration techniques are likely to be suitable. If the site has contamination or groundwater 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. 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:

Access and Egress is largely unaffected by fluvial flooding; however, Cromwell Road is shown to be affected by surface water flooding in some locations.

Climate Change:

Water levels in the brook may increase in the future and flooding may become more frequent. Although the watercourse is culverted through the site, the capacity of the culvert to convey higher flows may be limited and result in surcharge and flooding.

Implications for Development:

Risk to development could be reduced through using the Sequential Approach to place development outside of the Flood Zones.

Safe access and egress is not considered an issue, although climate change may increase the extent of surface water and fluvial flooding in the future and have the potential to affect routes.

The watercourse is culverted under the site; it is possible that the culvert has not been taken into consideration when defining Flood Zones. Detailed modelling as part of a site specific flood risk assessment will confirm whether the culvert has been accounted for and will provide more accurate Flood Zones. Regardless of whether the site is in the Flood Zones or not, the culvert will need to be assessed to determine whether there is sufficient capacity to convey water in the future with potential increases in flow due to climate change. The potential impacts of blockage of the culvert should also be investigated and any affect on the development site should be mitigated against.

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 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. However, the upper reaches of the Fox Brook are predominantly rural and therefore it is possible that strategic solutions could be investigated in the upper reaches which may benefit properties downstream.

Guidance for Developers:

[Mapping in this table is based on results from a 2D model developed for this SFRA. This model does not take into account the upstream attenuation on the Fox Brook or culvert dimensions.](#)

At the planning application stage, a site-specific flood risk assessment will be required to confirm Flood Zone 2 and 3 extents. 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 Fox 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 Fox 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 Zone 2 as public open space.

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