

Cov1 - Keresley SUE option

OSNGR:	431314,283854	Area: 154.0ha		Greenfield	
Flood Zone Coverage:	FZ3b	FZ3a	FZ2	FZ1	
	1%	1%	1%	99%	

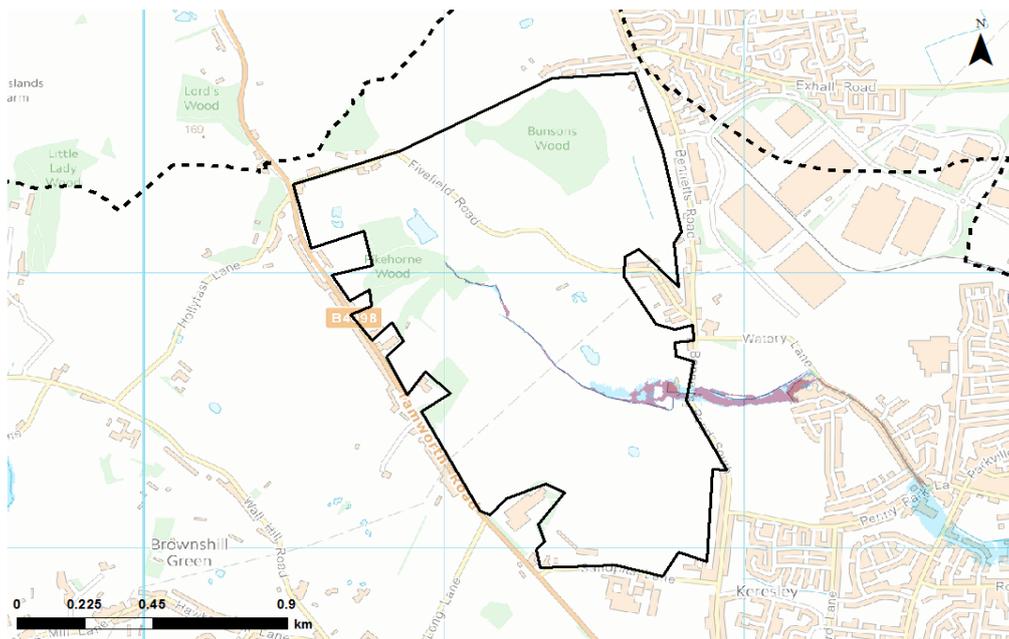
Sources of flood risk:
 The primary flood risk to the potential development site is fluvial from the Hall Brook which flows through the centre of the site. Water is mainly confined to the channel and areas immediately adjacent, except in the east of the site where water backs up behind a series of culverts. Flood hazard is mainly classed as very low. There are also a number of ponds located throughout the potential development site. Parts of the site are also shown to be affected by surface water flooding; these areas tend to correspond with the watercourse and the ponds.

Exception Test Required?
 Unlikely, as the majority of the site is located within Flood Zone 1. If "More Vulnerable" and "Essential Infrastructure" development is located in FZ3a and for "Highly Vulnerable" development located in FZ2 an Exception test would be required.
 "Essential Infrastructure" development in FZ3b will also require the Exception Test.
 "Highly Vulnerable" development should not be permitted within FZ3a and FZ3b.
 "More Vulnerable" and "Less Vulnerable" development should not be permitted within FZ3b.

NPPF Guidance:

- The majority of the site is located within Flood Zone 1, therefore by ensuring development is placed away from the watercourses and outside of the flood zones, the Exception Test will not be required.
- However, sites over 1 hectare will require a site-specific Flood Risk Assessment (FRA), in which the vulnerability to flooding from other sources should be considered.
- If development is placed in the Flood Zones then, depending on the type of the development, the Exception test may be required. To pass Part 'b' of the Exception Test, a FRA should demonstrate that the development will be safe, will avoid increasing flood risk elsewhere, and will reduce flood risk overall.

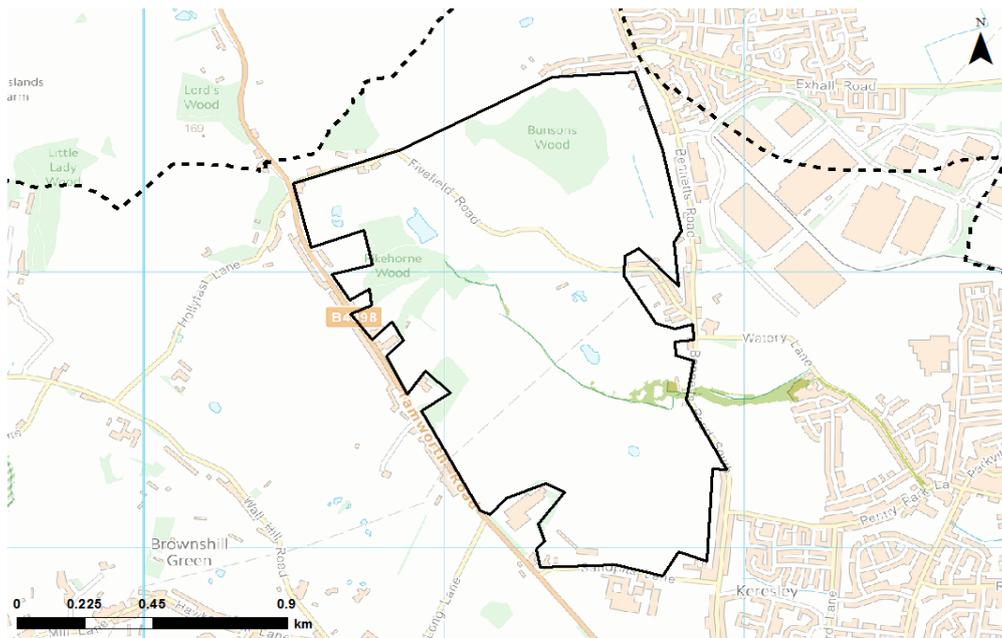
Flood Zone Map



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

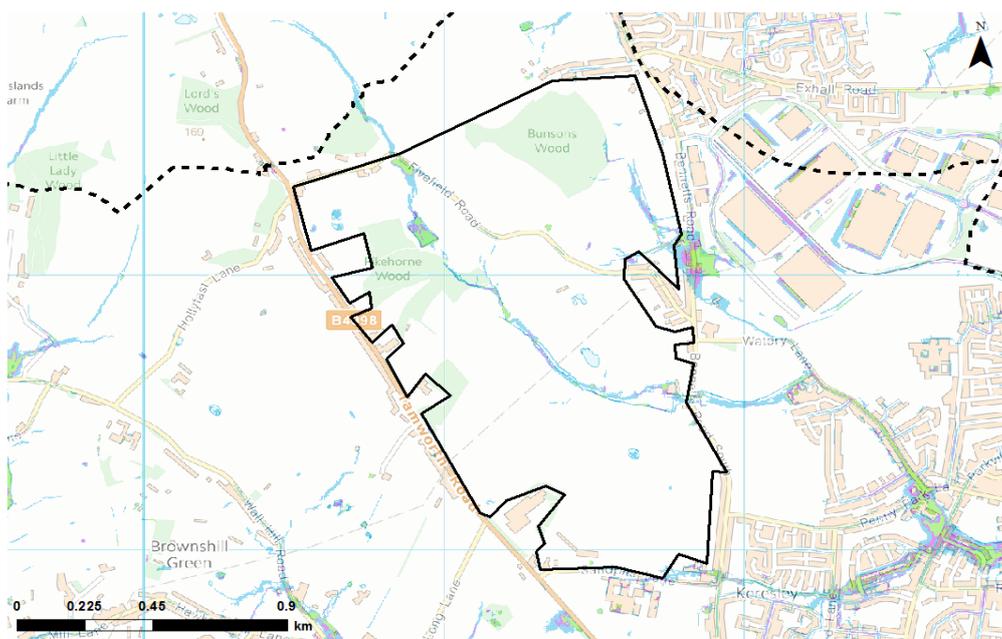
Climate Change Map



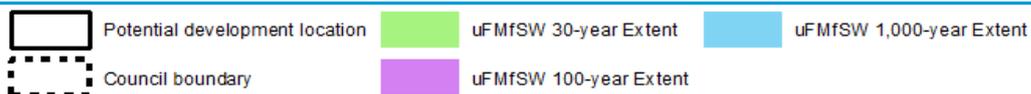
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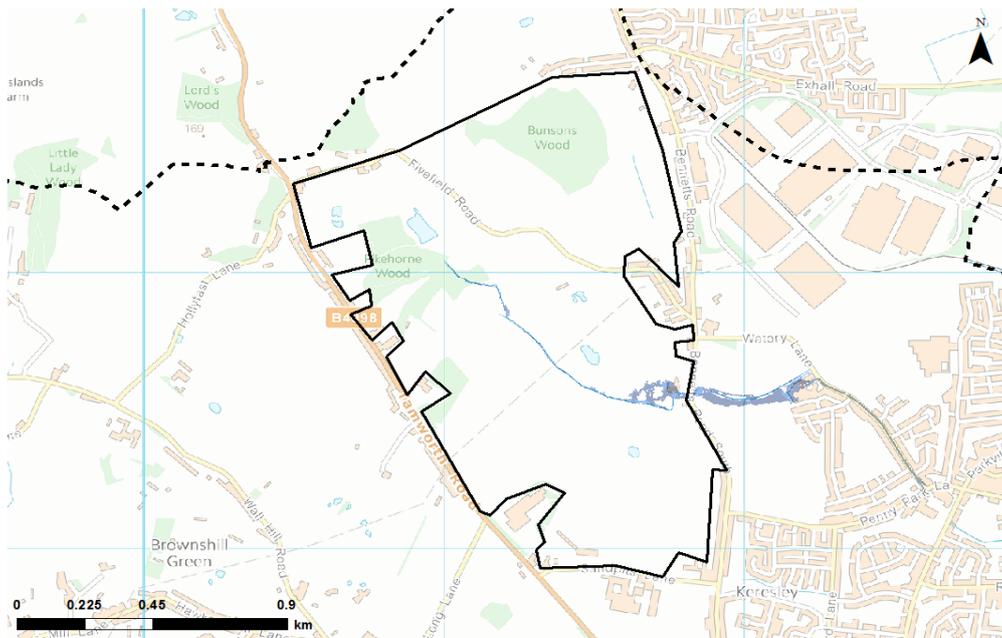
Surface Water Map



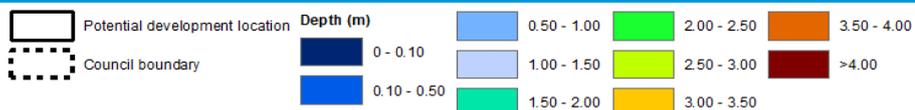
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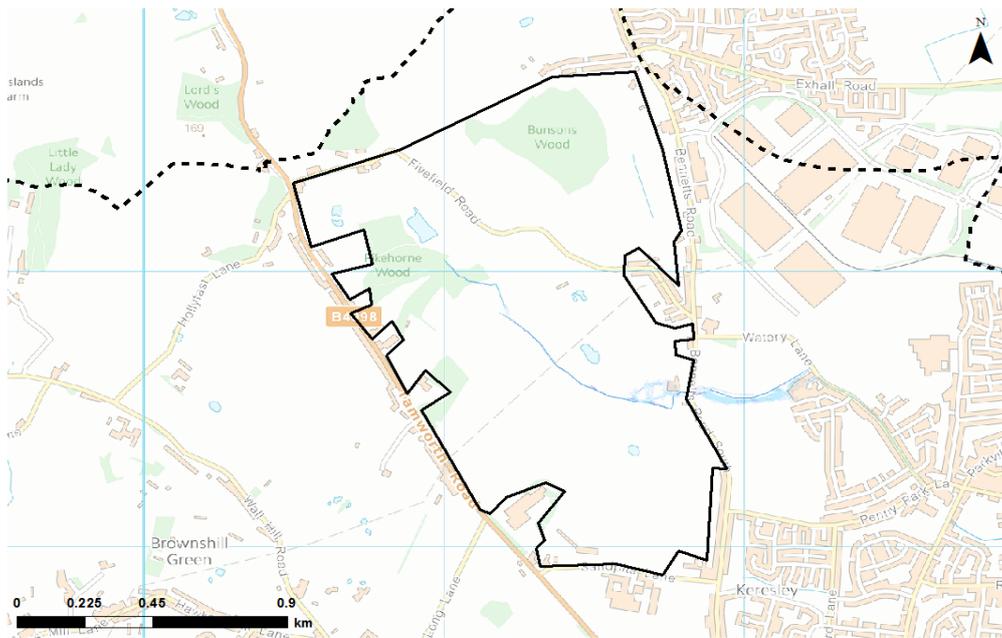
Depth Map - fluvial flooding (1 in 100-year event)



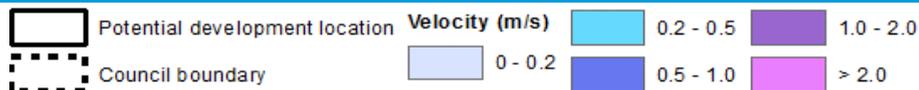
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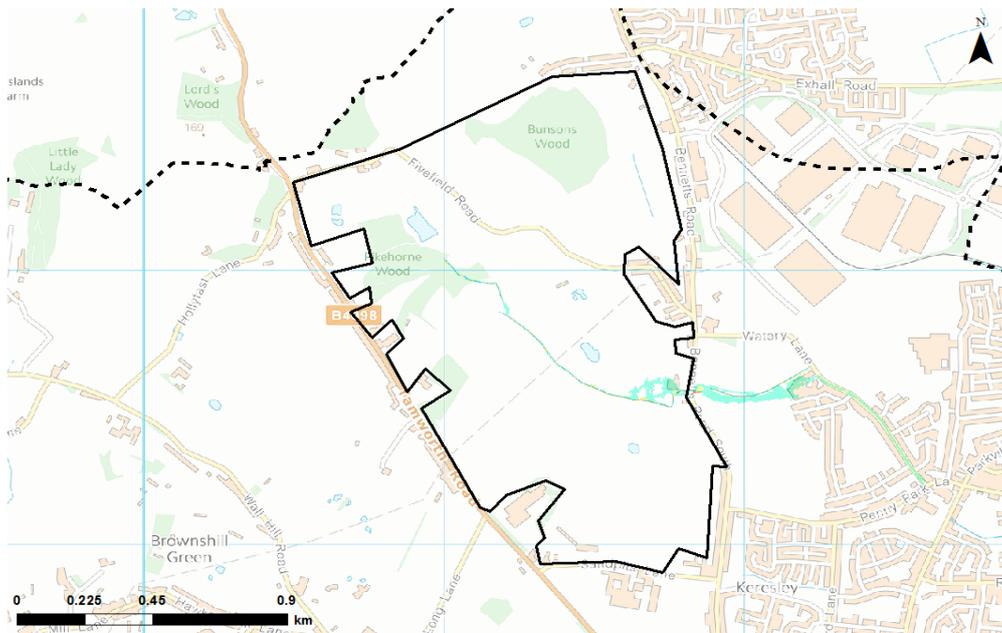
Velocity Map - fluvial flooding (1 in 100-year event)



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Hazard Map - fluvial flooding (1 in 100-year event)



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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 might be unsuitable at some locations within the site due to the existing gradient.
Infiltration		Due to the site being located in groundwater source protection zone infiltration techniques should only be used where there are suitable levels of treatment although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints
Detention		This option may be feasible provided site slopes are < 5% at the location of the detention feature. A liner maybe required if there any ground contamination issues.
Filtration		This feature is probably suitable provided site slopes are <5% and the depth to the water table is >1m. If the site has contaminated land 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. If the site has groundwater contamination issues, a liner will be required.

- Residential developments / mixed use developments should provide at least two independent SuDS features in series to provide a suitable level of water quality treatment. Industrial developments should provide at least three independent SuDS features in series to provide a suitable level of water quality treatment.

- The site is not located in an area designated by the Environment Agency as a landfill site.

- The site is located with a zone 3 groundwater protection zone. As such infiltration techniques should only be used where there are suitable levels of treatment although it is possible that infiltration may not be permitted. Proposed SuDS should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.

Flood Defences:

There are no flood defences at this site.

Flood Warning:

There are currently no flood warning areas or flood alerts covering this site.

Access & Egress:

Primary access and egress are achieved via Tamworth Road (B4098), Bennetts Road South and Fivefield Road. These access routes are relatively unaffected by both fluvial and surface water flood risk. However, there is a risk that blockage of the culvert under Bennetts Road could cause water to back up and spill onto the road, potentially causing access issues.

Climate Change:

- Increased storm intensities.
- Increased water levels in the Hall Brook

Flood Risk Implications for Development:

- At the planning application stage, a site-specific FRA will be required for any development or re-development within the potential development site as detailed by the standing conditions in the LFRMS. Site-specific FRAs should be produced to current national and local stands and consider all sources of flood risk (including residual risk). Strategic documents such as the SWMP, PFRA and SFRA should be used as sources of information.
 - 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.
 - The Hall Brook should not be culverted unless there is an overriding need to do so and justification is provided in line with current LLFA policy. This is to ensure risk of blockage is minimal and the ecological status of watercourses are not degraded.
 - No building, structure (whether temporary or permanent), or planting of vegetation should occur within 5 metres of an ordinary watercourse, even if the watercourse is culverted.
 - Potential storage options should be considered to reduce flood risk downstream from the Hall Brook. This will also attenuation flows from watercourses that contribute to the River Sowe, providing protection to other areas of Coventry.
 - The peak flows on the Hall Brook should be considered when reviewing drainage.
 - Any designated features of significance to flood risk should be removed or altered without prior consent from the designated authority.
 - No overland flow route or channel is to become obstructed without appropriate interception and diversion of flows (agreed in writing with the LLFA). This is to prevent damage to property.
 - Resilience measures will be required if buildings are situated in the flood risk area.
 - New or re-development should adopt source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff. These should be predominately open air SuDS techniques and will be assessed in accordance with National and Local standards and guidance as agreed by the LLFA. There may be restrictions on the type of SuDS suitable within the site due to the site being located in a Zone 3 groundwater SPZ. The LLFA and relevant stakeholders should be consulted at an early stage to ensure SuDS are implemented and designed to overcome site-specific constraints.
 - Rainwater runoff from a drainage systems shall discharge to one of the following (listed in order of priority)
 - 1) an adequate soakaway or some other adequate infiltration system
 - 2) a watercourse
 - 3) surface water sewer.
- Surface water discharge to foul or combined systems will not be accepted.

- Consider opportunities for removing structures/opening up culverts on the Hall Brook in the east of the site where they are currently causing the Hall Brook to back up.
- Flows and volumes should be restricted to the Greenfield QBar less 20% for any site using the most appropriate form of calculation agreed with the LLFA. This is required for both new and redeveloped sites.
- Assessment for runoff should include allowance for climate change effects.
- Green infrastructure should be considered as part of the mitigation measures for surface water runoff from potential development. Consider using Flood Zones 2 and 3 as public open space.
- It is important to ensure that any new connections to sewer systems or watercourses do not have a detrimental impact to third party lands downstream. Any connection should be approved with the consent from the relevant flood risk management authority.
- On-site attenuation schemes would need to be tested against the hydrographs of the Hall Brook to ensure flows are not exacerbated downstream within the catchment.
- All developments need to utilise water harvesting techniques to reduce the use of fresh water within a development and reduce the discharge volumes from the site. This must be implemented unless evidence can be provided that it is unsuitable.
- Groundwater levels should be considered when developing or redeveloping areas of potential development sites. Development should not cause or increase groundwater flood risk.
- If required an intrusive ground investigation report should be provided to establish depth and type of strata, including percolation results in accordance with BRE 365 as well as the presence and risk with migrant contaminants.
- Safe access and egress will need to be demonstrated.
- Consultation with the Local Authority and the Environment Agency should be undertaken at an early stage.