



Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

Site CfS:188

Final Draft Report

Prepared for
Huntingdonshire District
Council

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This report describes work commissioned by Huntingdonshire District Council by an instruction via email dated 21 July 2025. The Client's representative for the contract was Frances Schulz of Huntingdonshire District Council. Laura Thompson of JBA Consulting carried out this work.

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The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken between 21 July 2025 and 6 November 2025 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate.

Acknowledgements

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS:188. The content of this report assumes the reader has already consulted the 'HDC Level 1 SFRA' (2024) and read the 'HDC Level 2 SFRA Main Report' (2025) and is therefore familiar with the terminology used in this report.

1.1 Site CfS:188

- Location: Land off Cheveril Lane, Bury
- Existing site use: Agriculture
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Natural / open space
- Proposed site use vulnerability: Water compatible
- Site area (ha): 6.5
- Watercourse: High Lode (main river)
- Environment Agency (EA) model: Fenland Bury Brook 2016
- Summary of requirements from Level 2 SFRA scoping stage:
 - Assessment of fluvial flood depths, velocities and hazards
 - Assessment of surface water flood extent, depths and hazards
 - Assessment of all other sources of flood risk

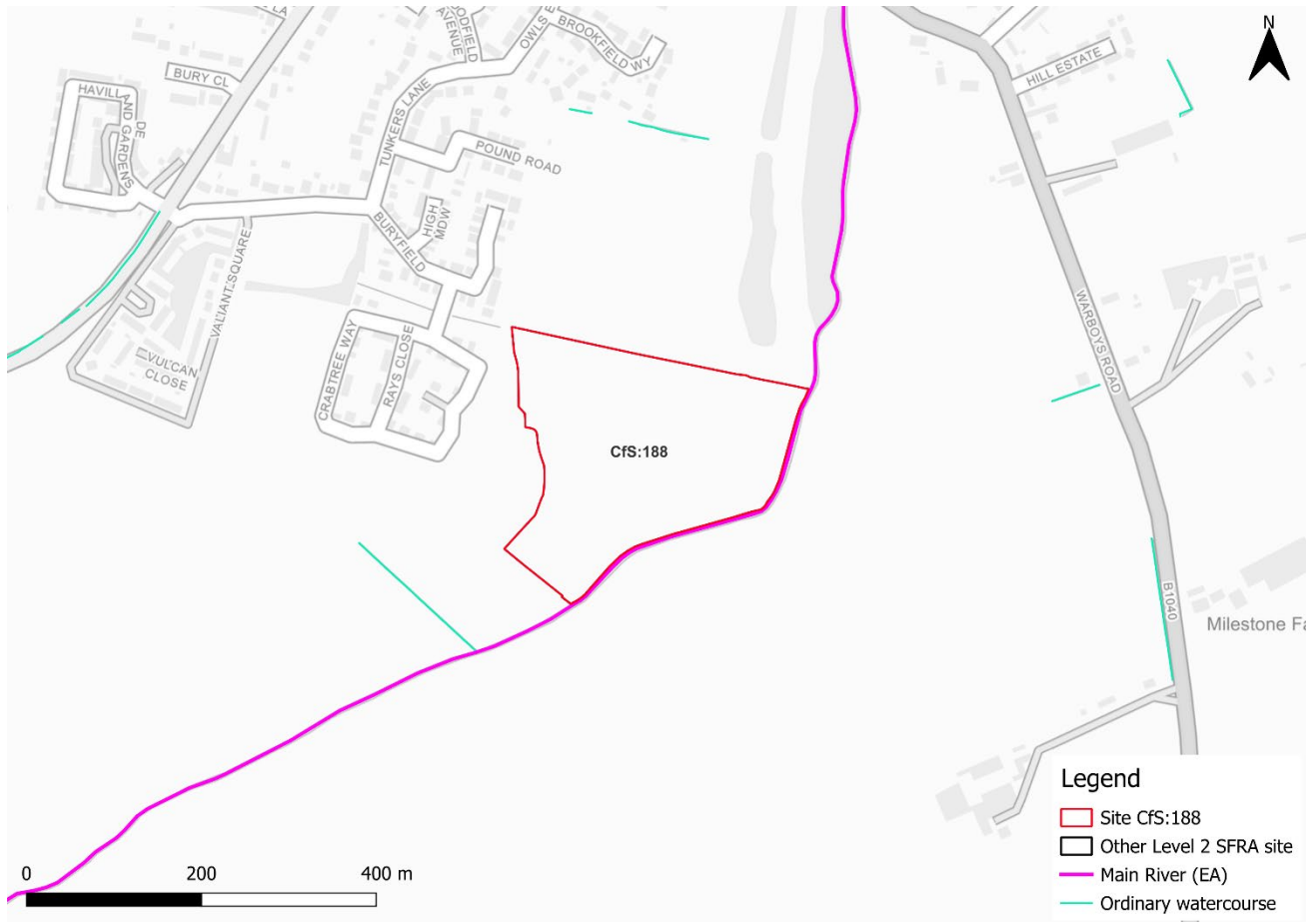


Figure 1-1: Existing site location boundary



Figure 1-2: Aerial photography



Figure 1-3: Topography

2 Flood risk from rivers and sea

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed July 2025) and Flood Zone 3b (functional floodplain), as updated in this Level 2 SFRA, the percentage areas of the site within each flood zone are stated in Table 2-1 and can be viewed on Figure 2-1. This version of the Flood Map for Planning does not consider flood defence infrastructure (Section 2.2) or the impacts of climate change (Section 2.3).

Over half of the site is within Flood Zone 3b (functional floodplain), due to the site bordering High Lode watercourse to the east. Flood Zone 3b in this location is based on the Flood Map for Planning 3.3% AEP defended fluvial event. The northwestern area of the site is within Flood Zone 1, indicating that this area is at low risk of flooding from rivers and the sea. It is worth noting that Flood Zones 3a and 2 are likely based on the EA's New National Model rather than the Fenland Bury Brook 2016 model, for reasons unknown at this stage.

Table 2-1: Existing flood risk based on percentage area of site at risk

Flood Zone 1 (% area)	Flood Zone 2 (% area)	Flood Zone 3a (% area)	Flood Zone 3b (% area)
25	17	3	55

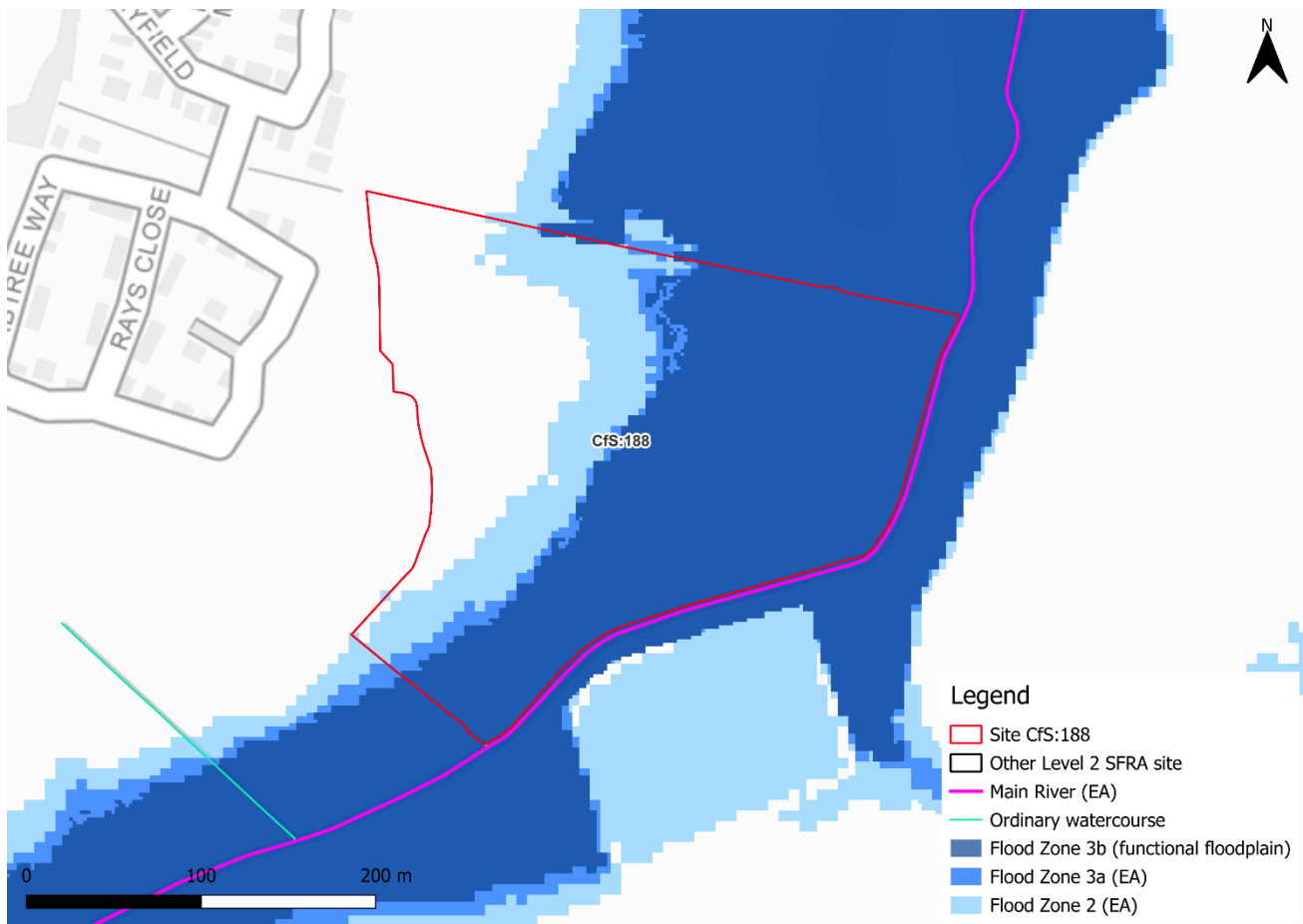


Figure 2-1: Existing risk

2.1.2 Fluvial undefended model outputs (Bury Brook 2016)

Figure 2-2, Figure 2-3 and Figure 2-4 show the modelled flood depths, velocities and hazards for the 1% AEP undefended event respectively. A large area within the east of the site is modelled to have maximum depths of between 0.9 and 1.2 m, with hazard categorised as 'Danger for most'. The western area of the site is not modelled to be at risk in the 1% AEP undefended event.

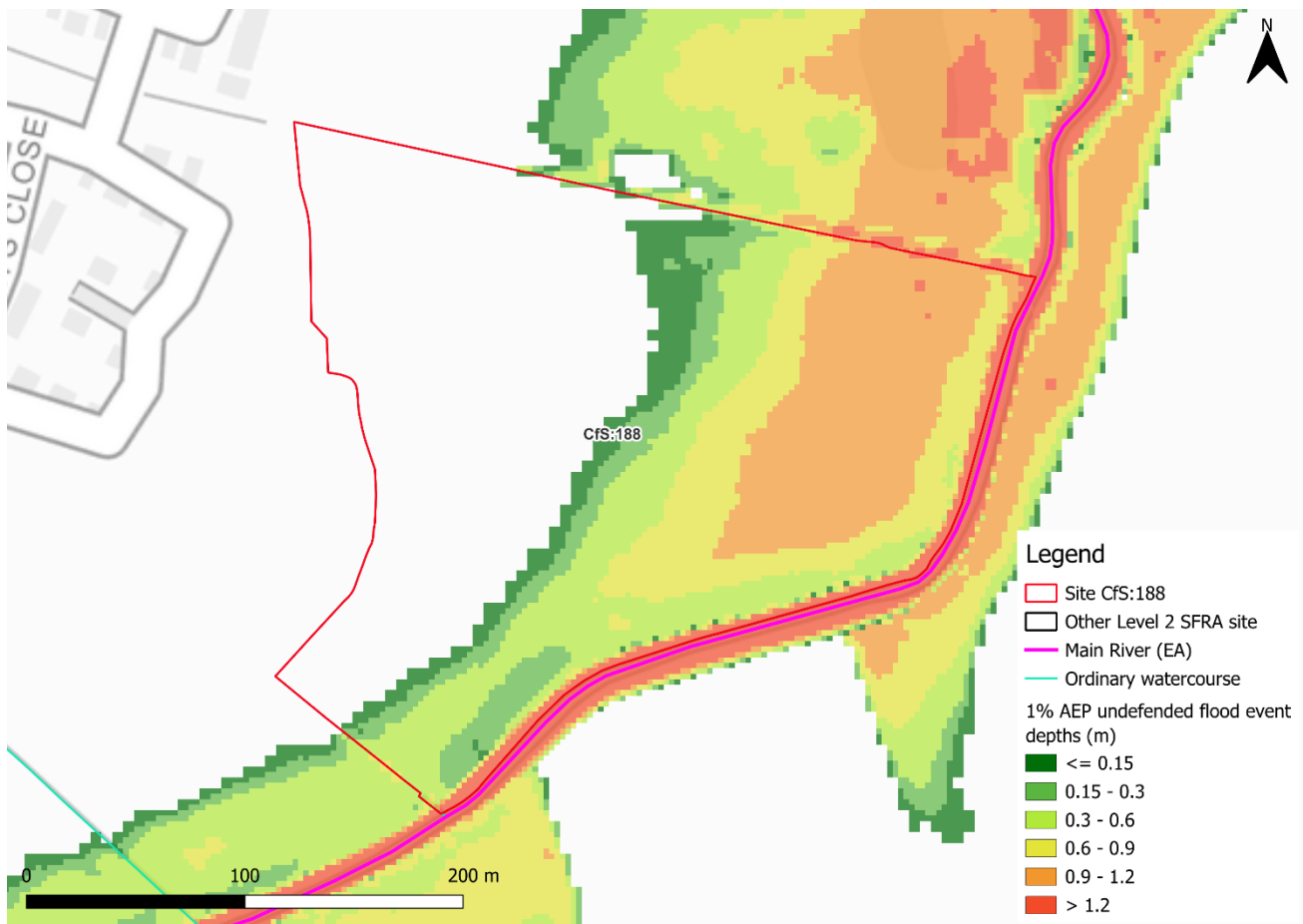


Figure 2-2: Flood depths for 1% AEP undefended flood event

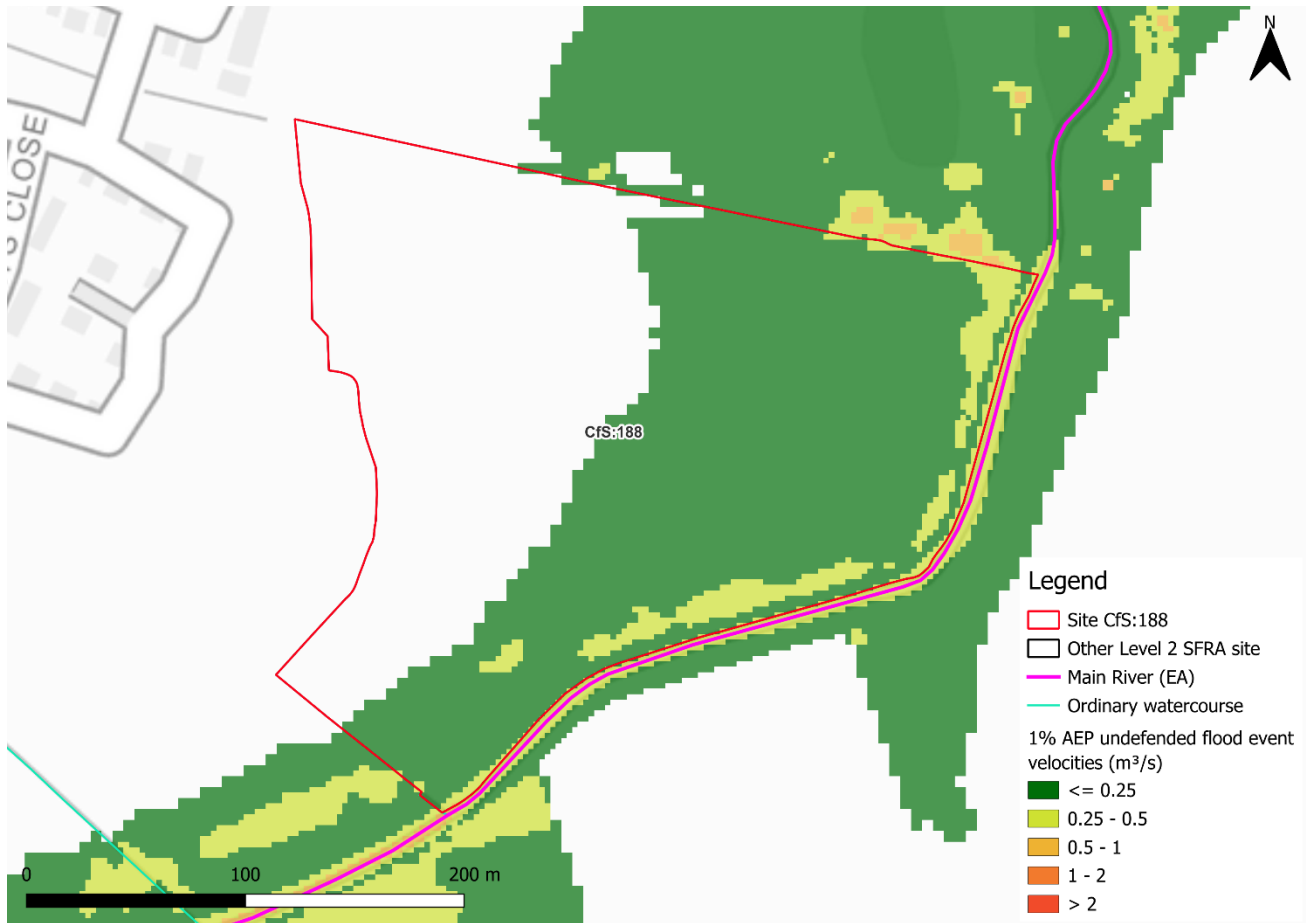


Figure 2-3: Flood velocities for 1% AEP undefended flood event

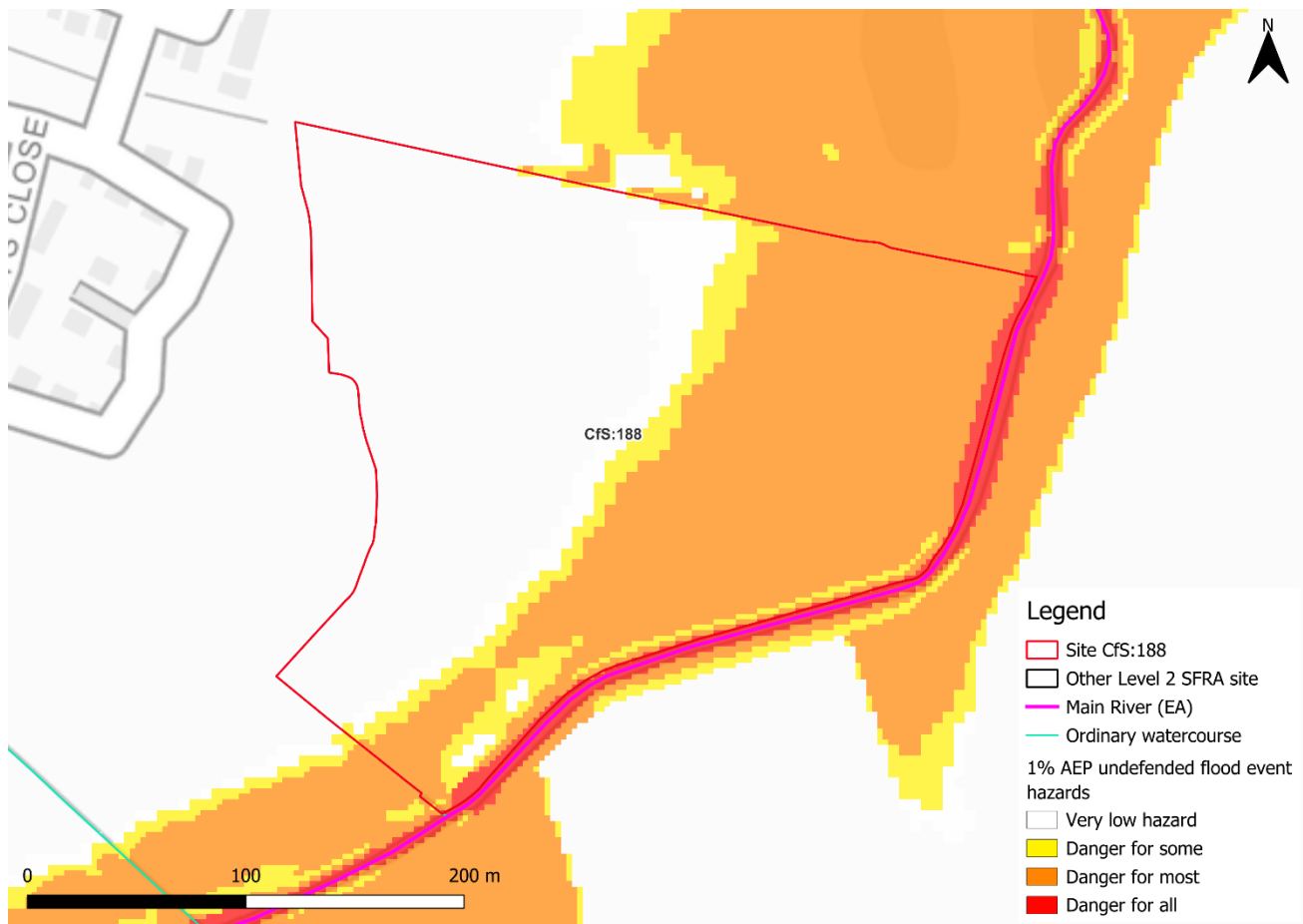


Figure 2-4: Flood hazard¹ for 1% AEP undefended flood event

2.2 Flood risk management

2.2.1 Flood defences

There are no engineered flood defences within the vicinity of the site that are likely to impact fluvial flood risk. However, there is a flood defence on the left bank of the High Lode channel, immediately downstream of the site. This is an unnamed, privately owned embankment with a standard of protection of five years. Current condition is unknown.

Given the embankments standard of protection is only five years, there is little protection to areas surrounding the site in the 1% AEP defended event.

¹ Fluvial hazard ratings based on Table 4 of the SUPPLEMENTARY NOTE ON FLOOD HAZARD RATINGS AND THRESHOLDS FOR DEVELOPMENT PLANNING AND CONTROL PURPOSE – Clarification of the Table 13.1 of FD2320/TR2 and Figure 3.2 of FD2321/TR1. May 2008.

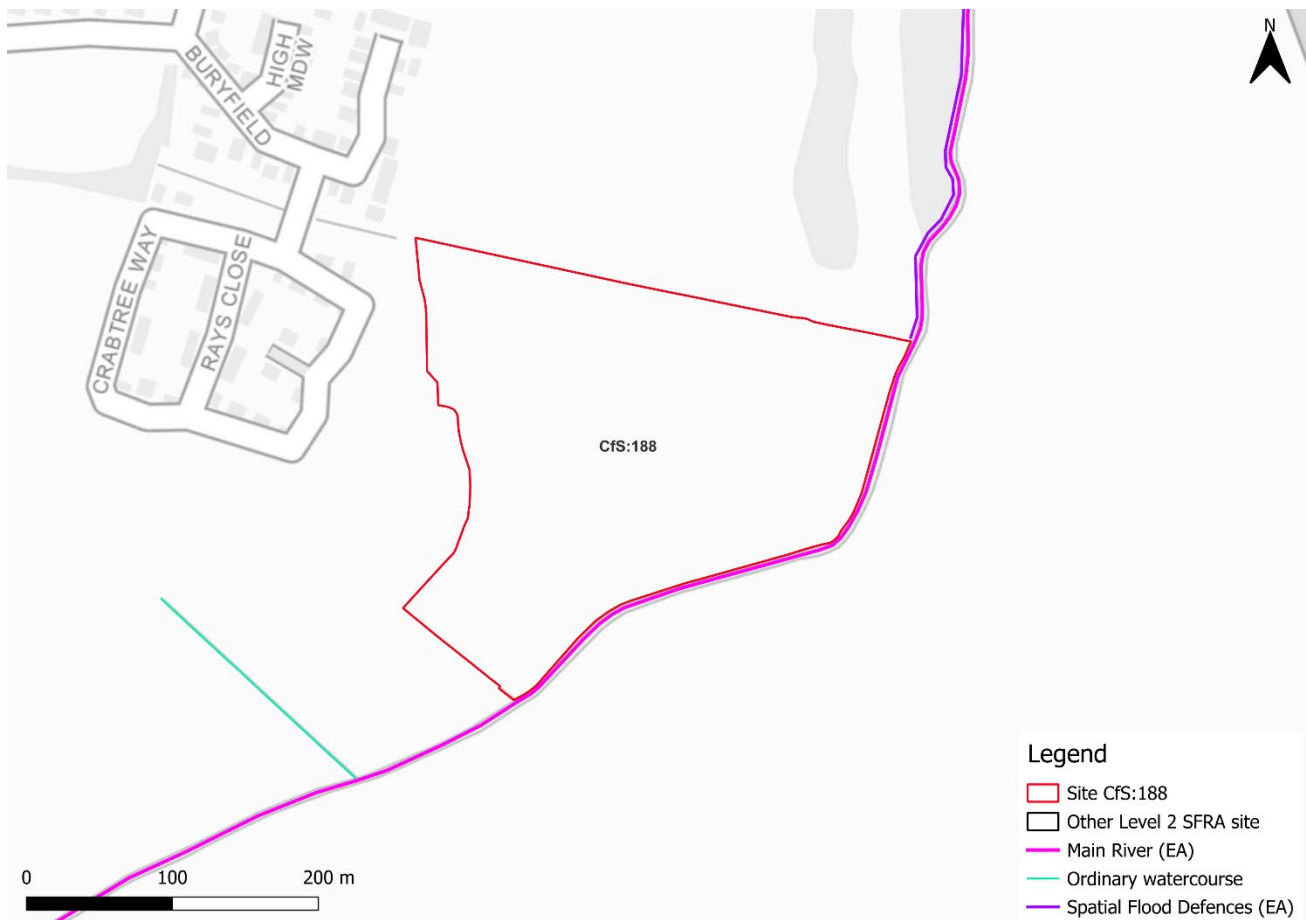


Figure 2-5: EA Spatial Flood Defences dataset

2.2.2 Working with Natural Processes

The EA's Working with Natural Processes (WwNP) dataset has been interrogated to identify opportunities for Natural Flood Management (NFM) to reduce flood risk to the site and surrounding areas. These areas are shown in Figure 2-6. Note, the WwNP mapping is broadscale and indicative, therefore further investigation will be required for any land shown to have potential for WwNP. Within and upstream of the site, there are opportunities for floodplain and riparian woodland planting to attenuate flooding.

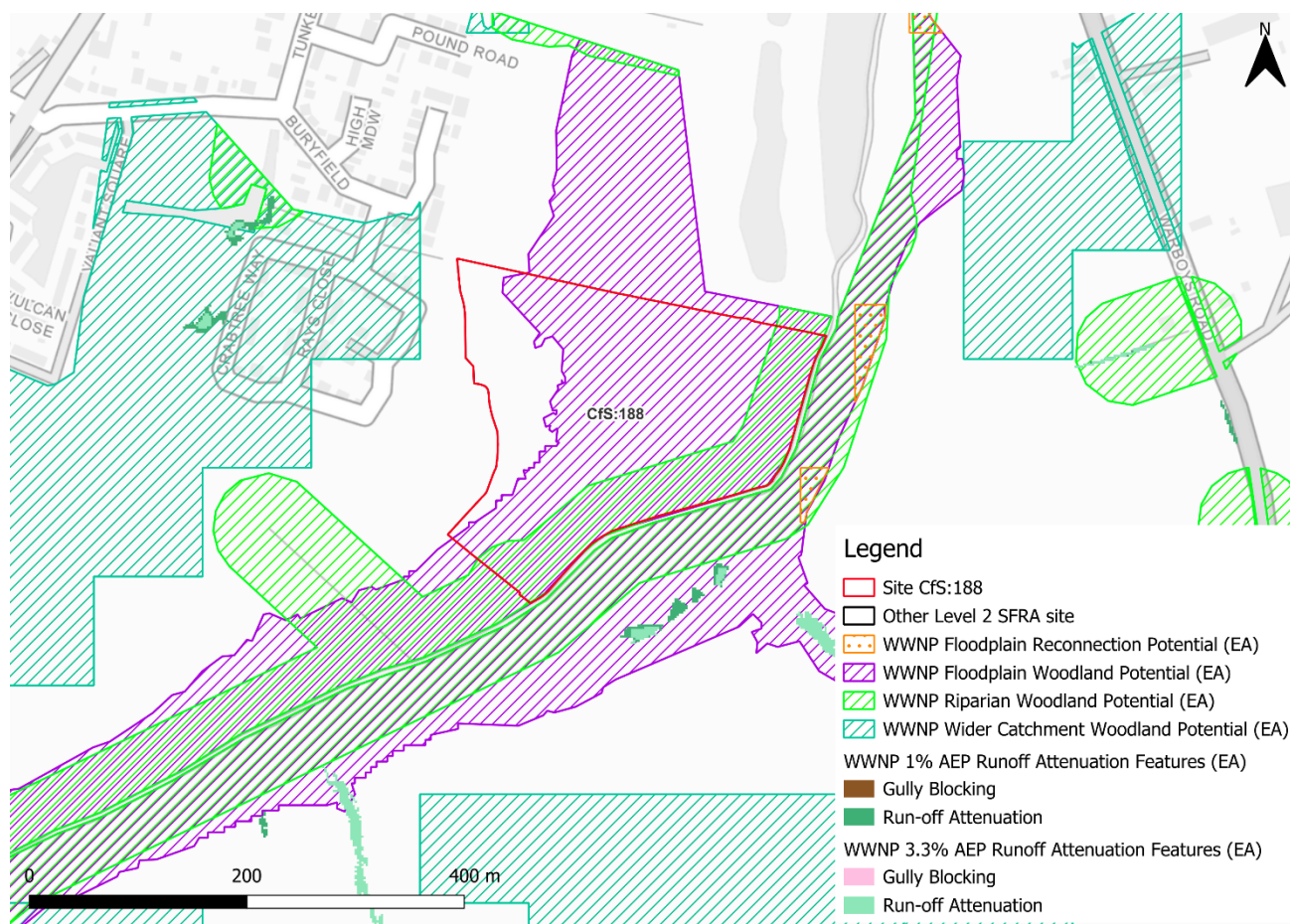


Figure 2-6: Natural Flood Management (NFM) potential mapping

2.3 Impacts from climate change

2.3.1 Fluvial

The EA's SFRA guidance states that SFRAs should assess the central allowance for less, more, highly vulnerable, and water compatible development. The higher central allowance should be assessed for essential infrastructure. The impacts of climate change on flood risk from High Lode have been modelled using the Fenland Bury Brook 2016 model.

With consideration of the EA's SFRA guidance, the latest central and higher central climate change allowances have been modelled as shown in Table 2-2.

Table 2-2: Modelled climate change allowances for peak river flows for the Old Bedford and Middle Level management catchment

Return period (AEP event)	Central allowance 2080s (% increase)	Higher central allowance 2080s (% increase)
2% (in absence of 3.3%)	6%	15%
1%	6%	15%
0.1%	6%	15%

Figure 2-7, Figure 2-8 and Figure 2-9 show the modelled flood depths, velocities and hazards for the 1% AEP undefended event plus the central climate change allowance (+6%) respectively. Risk is modelled to increase slightly in extent, with depths shown to increase by approximately 0.02m across the site.

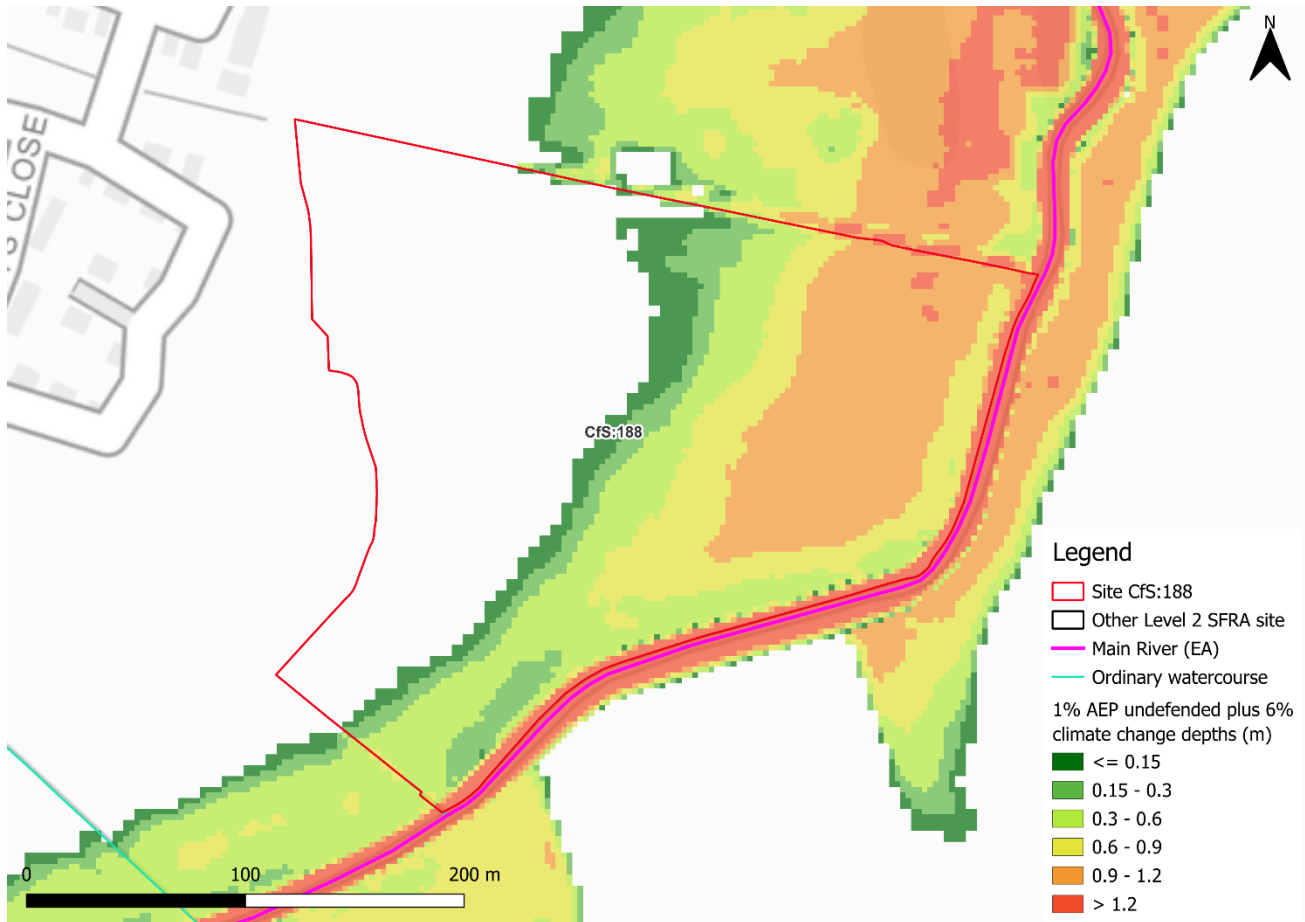


Figure 2-7: Flood depths for 1% AEP undefended flood event +6% (central climate change allowance)

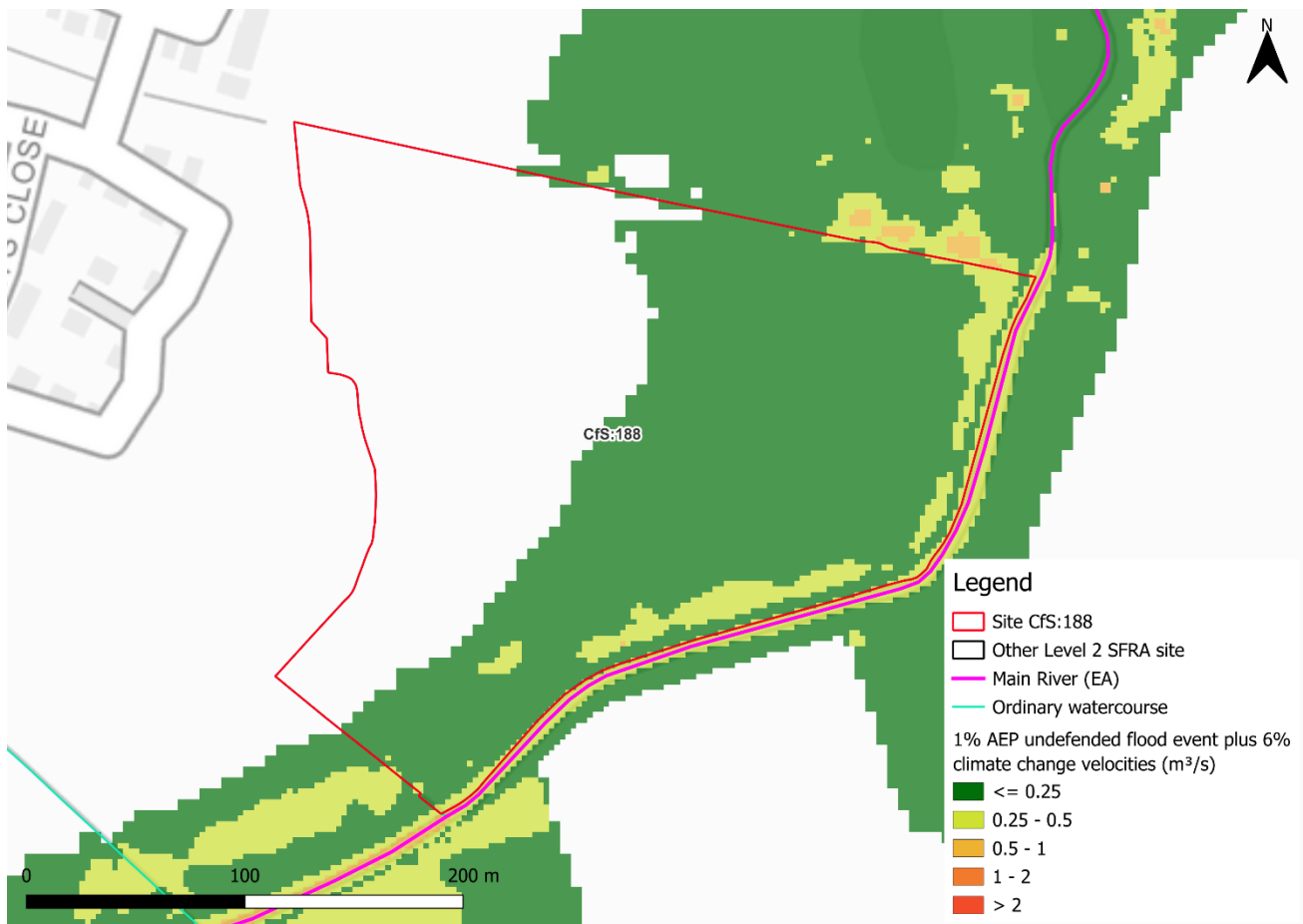


Figure 2-8: Flood velocities for 1% AEP undefended flood event +6% (central climate change allowance)

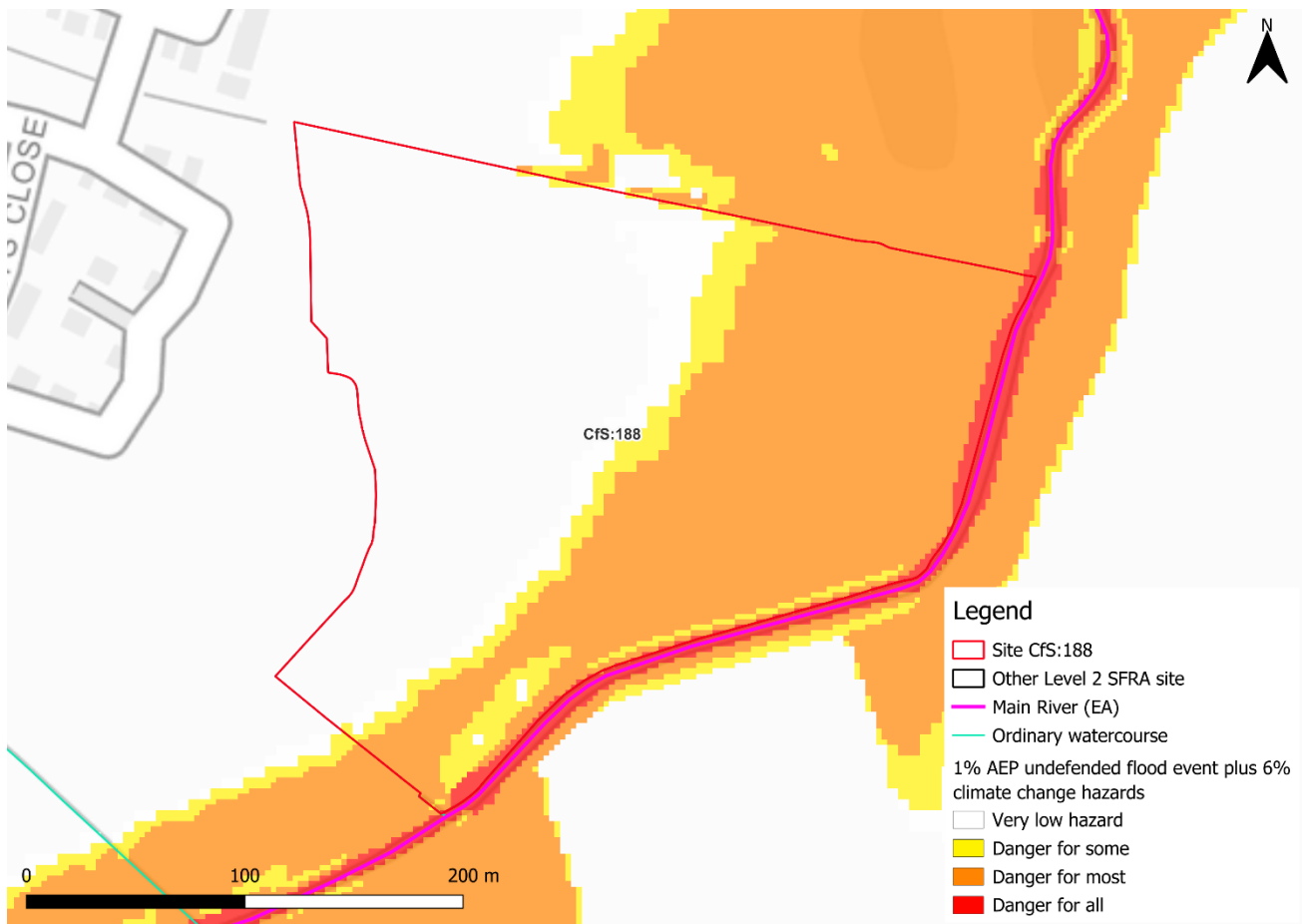


Figure 2-9: Flood hazard¹ for 1% AEP undefended flood event +6% (central climate change allowance)

2.3.2 Tidal

The EA's Flood Map for Planning shows the site is not at risk from tidal climate change.

2.4 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets.

2.5 Emergency planning

2.5.1 Flood warning

The EA operates a Flood Warning Service for properties located within a Flood Warning Area (FWA) for when a flood event is expected to occur. As shown in Figure 2-10, this site is located within a FWA, namely 052FWFBBKRRA - Bury Brook at Kings Ripton, Broughton, Wistow, Bury and Ramsey.

Flood alerts may be issued before a flood warning for properties located within a Flood Alert Area (FAA) to provide advance notice of the possibility of flooding. A flood alert may be

issued when there is less confidence that flooding will occur in a FWA. As shown in Figure 2-10, this site is located within a FAA, namely 052WAFBURY - Bury Brook in Cambridgeshire.

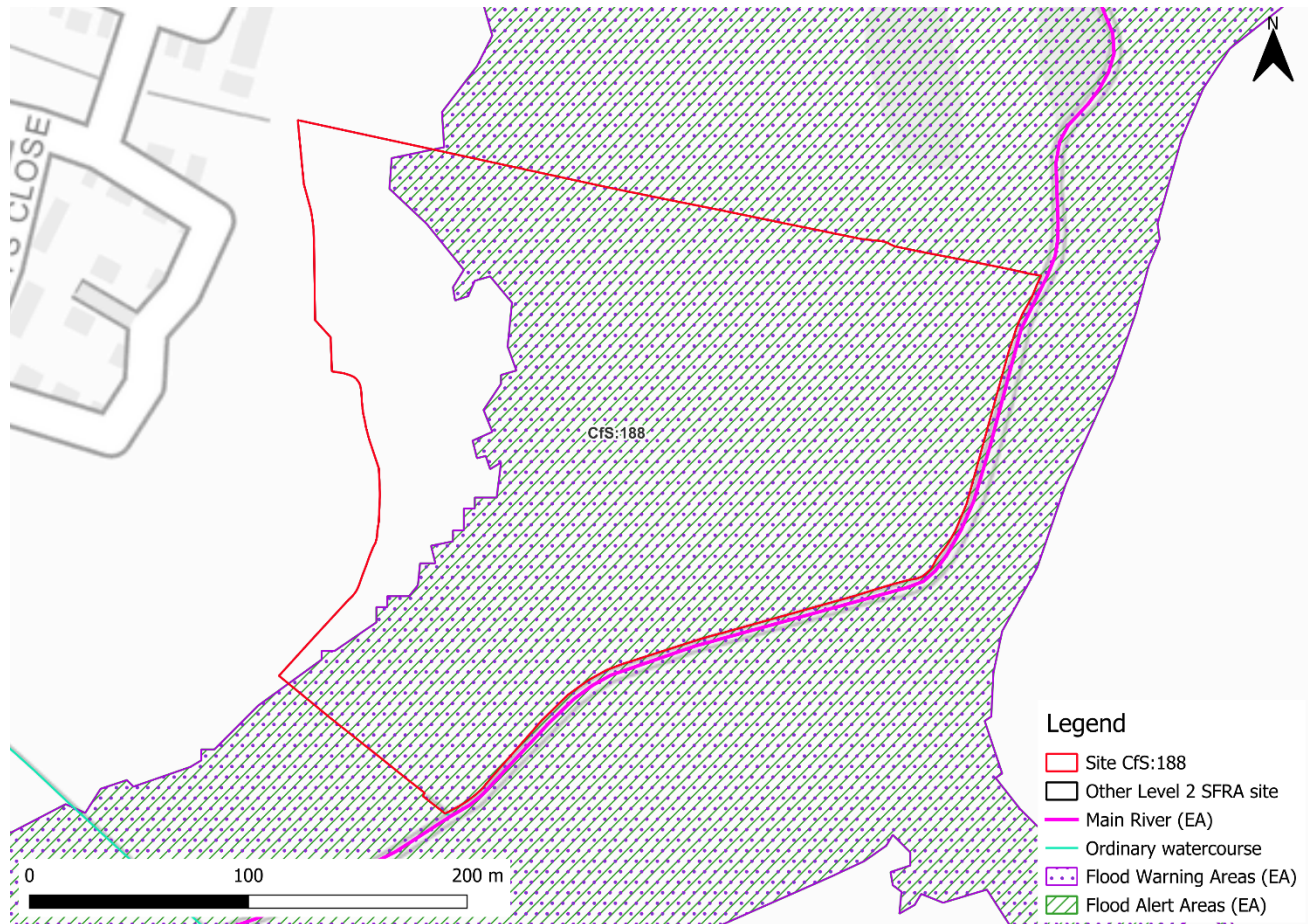


Figure 2-10: EA Flood Warning Areas and Flood Alert Areas

2.5.2 Access and escape routes

Based on available information, safe access and escape routes could likely be achieved during a flood event via the northwestern corner of the site (Figure 2-11). From online Google aerial imagery, this appears to connect to an existing track that leads to Ray's Close to the west of the site.



Figure 2-11: Potential access and escape routes

2.6 Observations, mitigation options, site suitability, sequential approach to development management - fluvial and tidal

- Observations:
 - Functional floodplain covers the eastern half of the site, adjacent to High Lode.
 - The intended use of the site would mean the whole site will be open space with no development.
 - Local detailed modelling of High Lode shows significant flood depths and hazards within the 1% AEP event extent. This risk increases slightly with climate change.
- Defences:
 - The site does not benefit from any formal engineered defences.
- Access and escape:
 - Safe access and escape routes must be available at times of flood and appear to be available from the northwest of the site, via the existing track leading to Ray's Close. A FWA is in place however which should provide advanced warning for site users to evacuate ahead of a flood event in the short term.

- EA flood warnings and alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.

3 Flood risk from surface water

3.1 Existing risk

The NaFRA2 Risk of Flooding from Surface Water (RoFSW) mapping received a significant update and was published January 2025, including for surface water flood extents and depths. However, at the time of writing, the EA has confirmed that the depth information available is not structured in a way that is suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation RoFSW depth and hazard mapping in addition to the NaFRA2 extents, as agreed with the EA. Surface water depth and hazard should be modelled at the site-specific FRA stage.

3.1.1 Risk of Flooding from Surface Water - NaFRA2 extents

Based on the EA's national scale RoFSW map, as updated in January 2025, surface water risk to the site is predominantly very low. Approximately 8% of the site is at high surface water risk. A further 4% is at medium risk and a further 9% is at low surface water risk, as shown in Table 3-1.

Surface water risk in the east of the site is coincident with the area of modelled fluvial risk, adjacent to High Lode (Figure 3-1). There is an additional surface water flow path through the northwest of the site present in all events.

Table 3-1: Existing surface water flood risk based on percentage area at risk using the NaFRA2 RoFSW map

Very low risk (% area)	Low risk (% area)	Medium risk (% area)	High risk (% area)
79	9	4	8

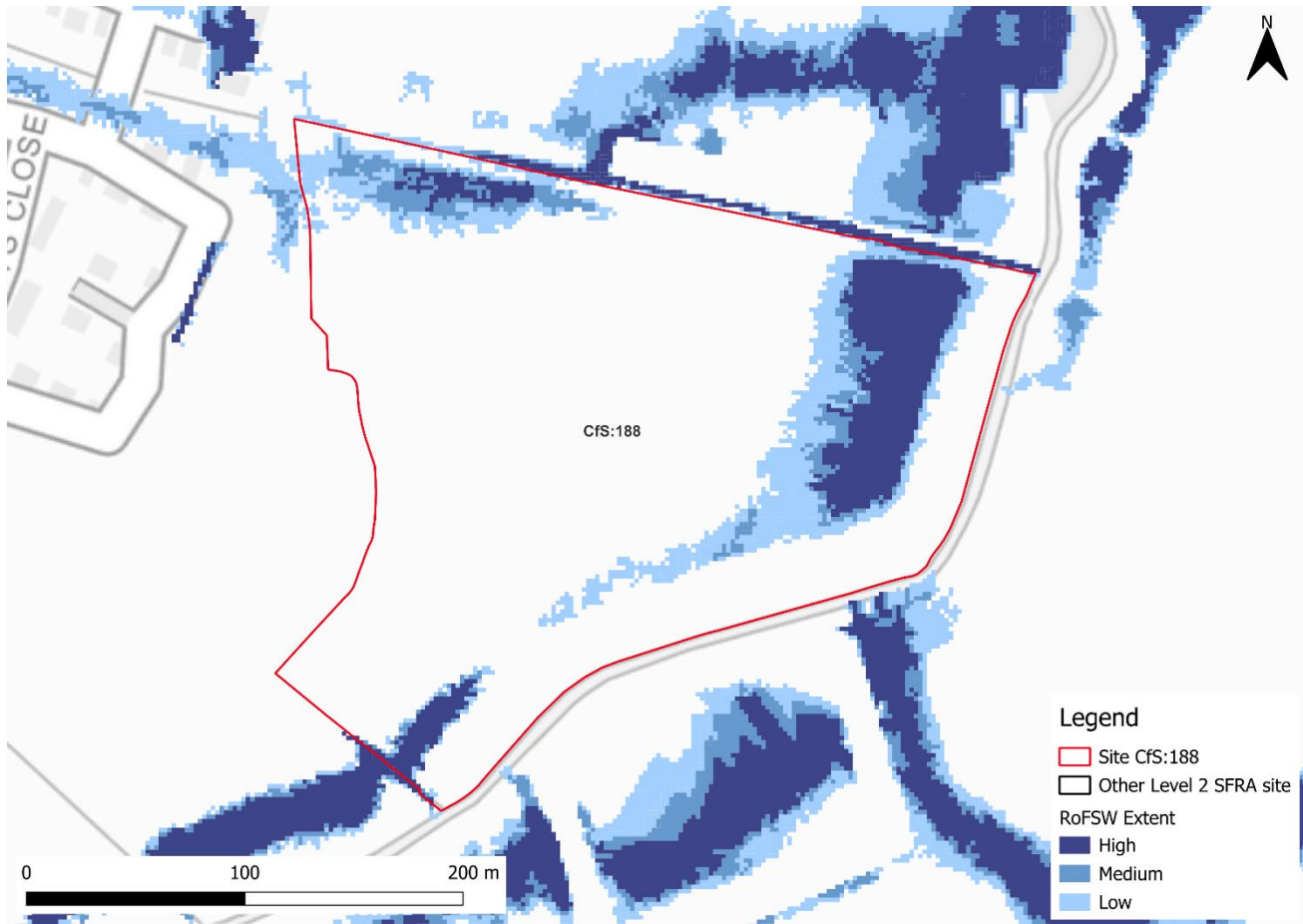


Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

3.1.2 Risk of Flooding from Surface Water - third generation depths and hazard

Based on the EA's national scale third generation RoFSW map, greatest flood depths within the site in the medium risk event are between 0.6 and 0.9 m (Figure 3-2), with large areas of hazard categorised as significant (Figure 3-3).

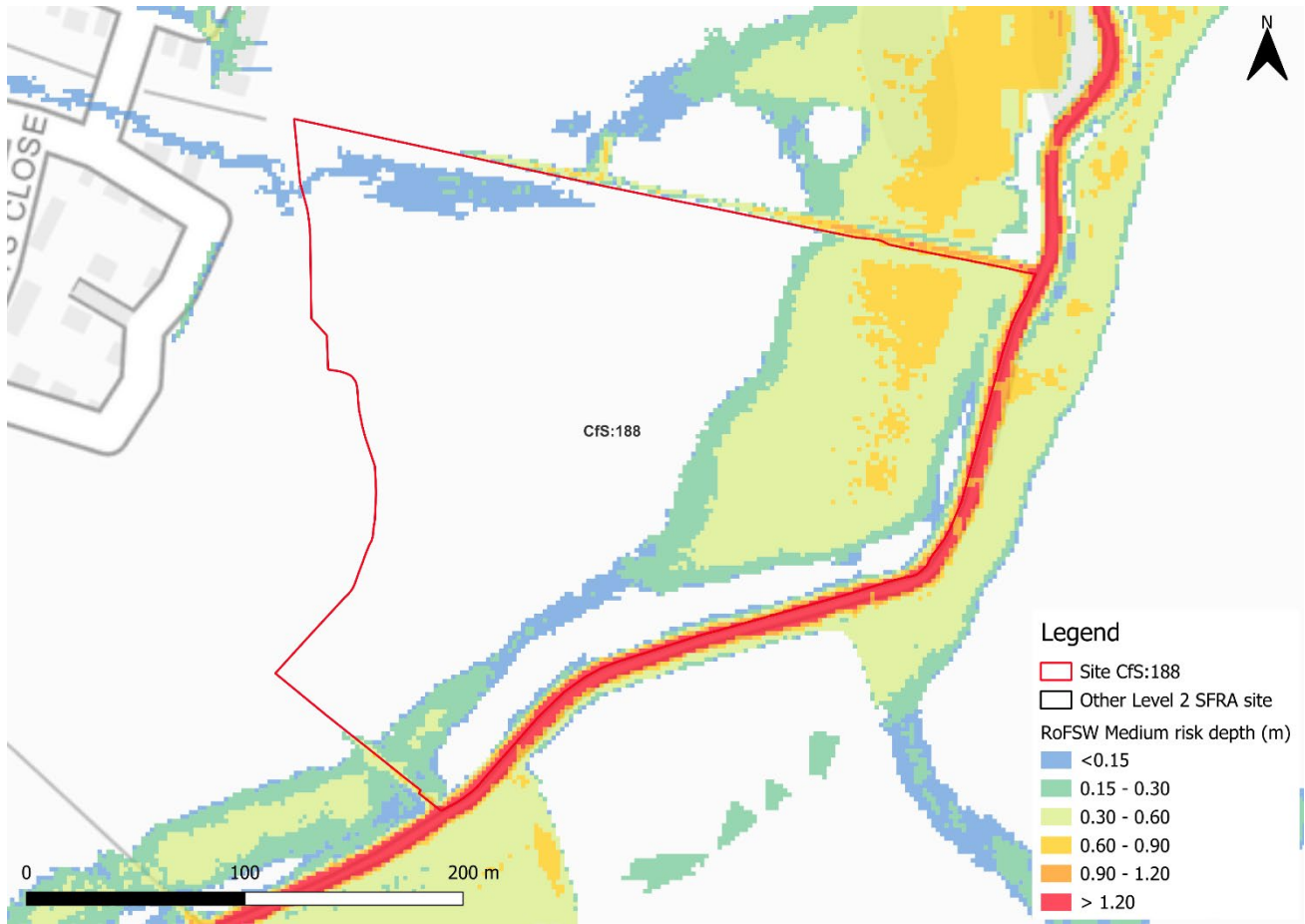


Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)

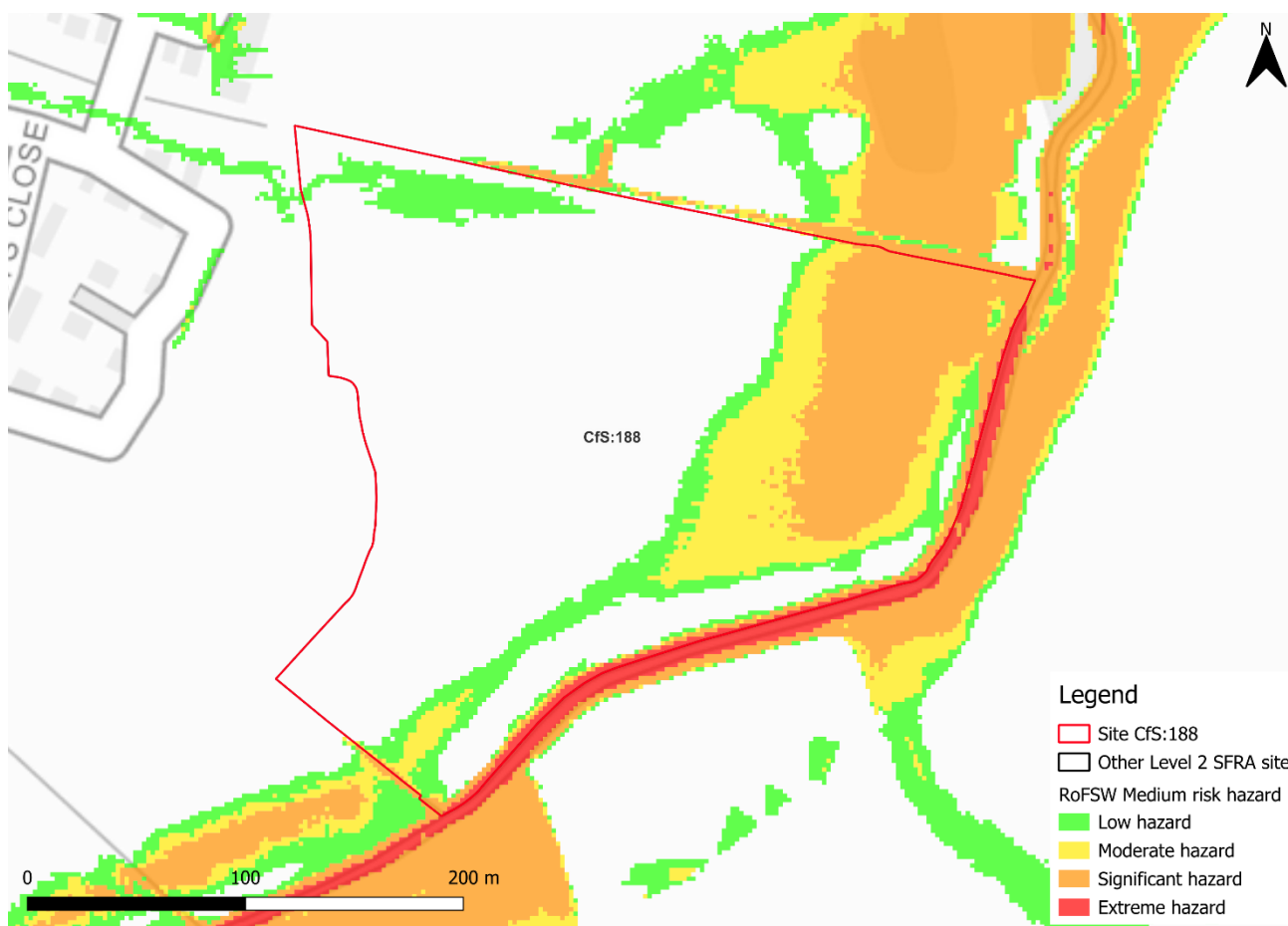


Figure 3-3: Medium risk event surface water flood hazard² (Third generation - Risk of Flooding from Surface Water map)

3.2 Impacts from climate change

The NaFRA2 RoFSW mapping now includes one modelled climate change scenario, the 2050s central allowance for the high, medium and low risk events. However, the upper end allowance on peak rainfall for the 2070s should be assessed in SFRAs. Therefore, at the time of writing, the available national surface water climate change mapping is unsuitable for consideration in development planning. This Level 2 SFRA considers the low risk surface water event as a conservative proxy for the medium risk event plus climate change, as agreed with the EA. The impact of climate change on surface water flood risk should be fully accounted for at the site-specific FRA stage.

Using the low risk event as a proxy, the medium risk surface water event is likely to increase in extent when accounting for climate change (Figure 3-4). This is most notable within the east of the site. The third generation surface water map indicate maximum flood depths are likely to increase to > 1.2 m in some areas of the site (Figure 3-5), with areas of extreme hazard (Figure 3-6).

² Based on Section 7.5 Hazard rating. What is the Risk of Flooding from Surface Water map? Report version 2.0. April 2019. Environment Agency

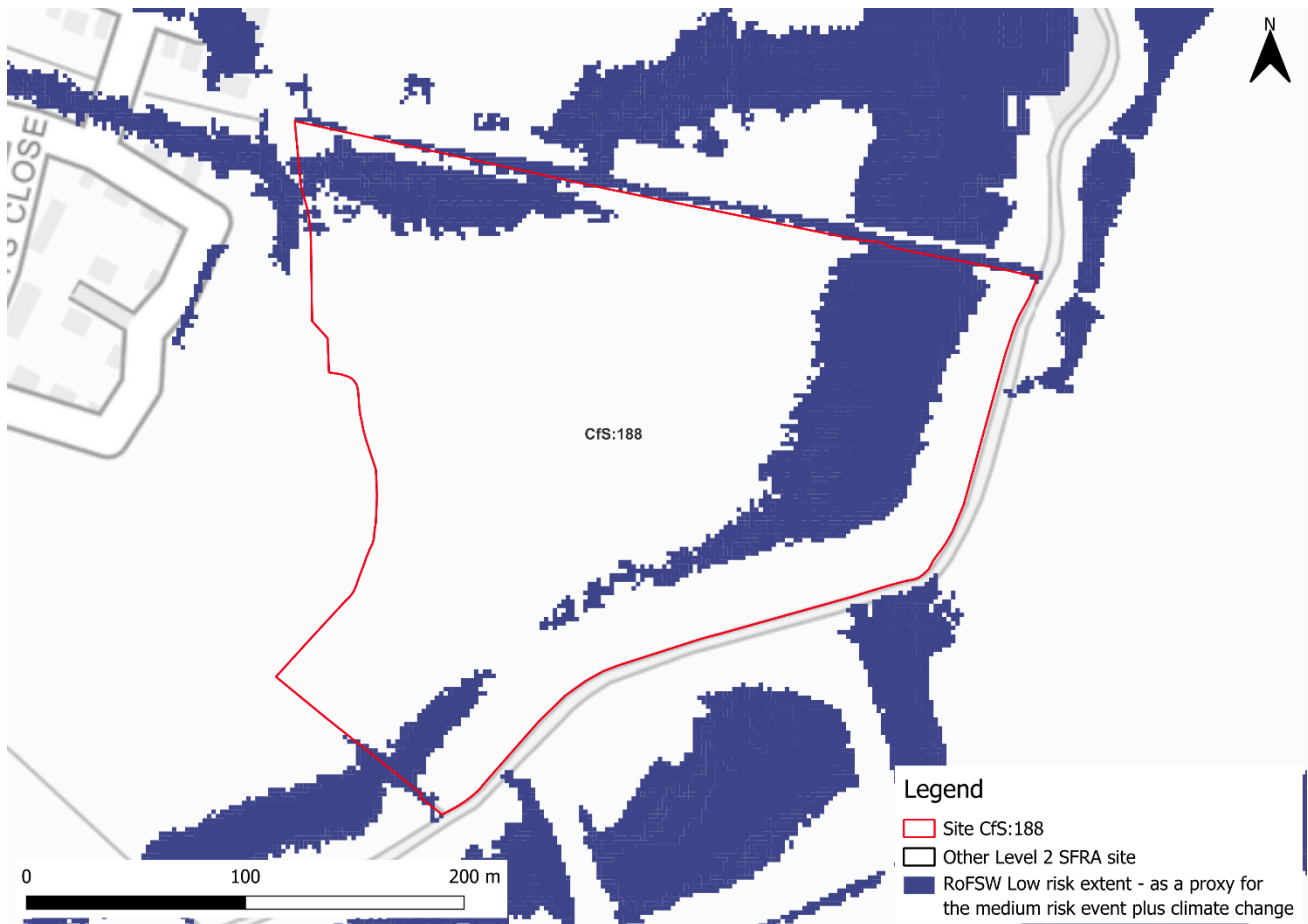


Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

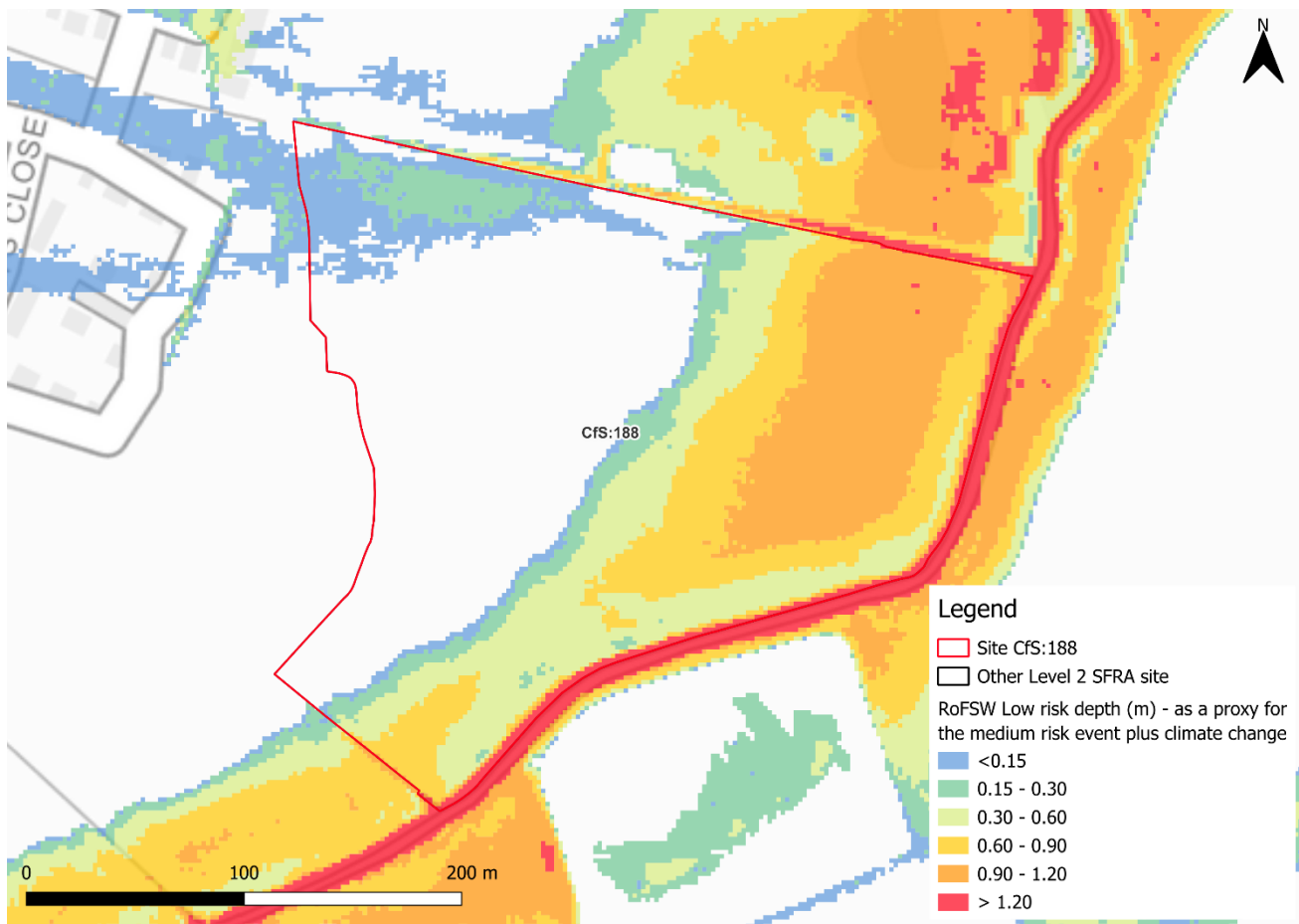


Figure 3-5: Low risk event surface water flood depths, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

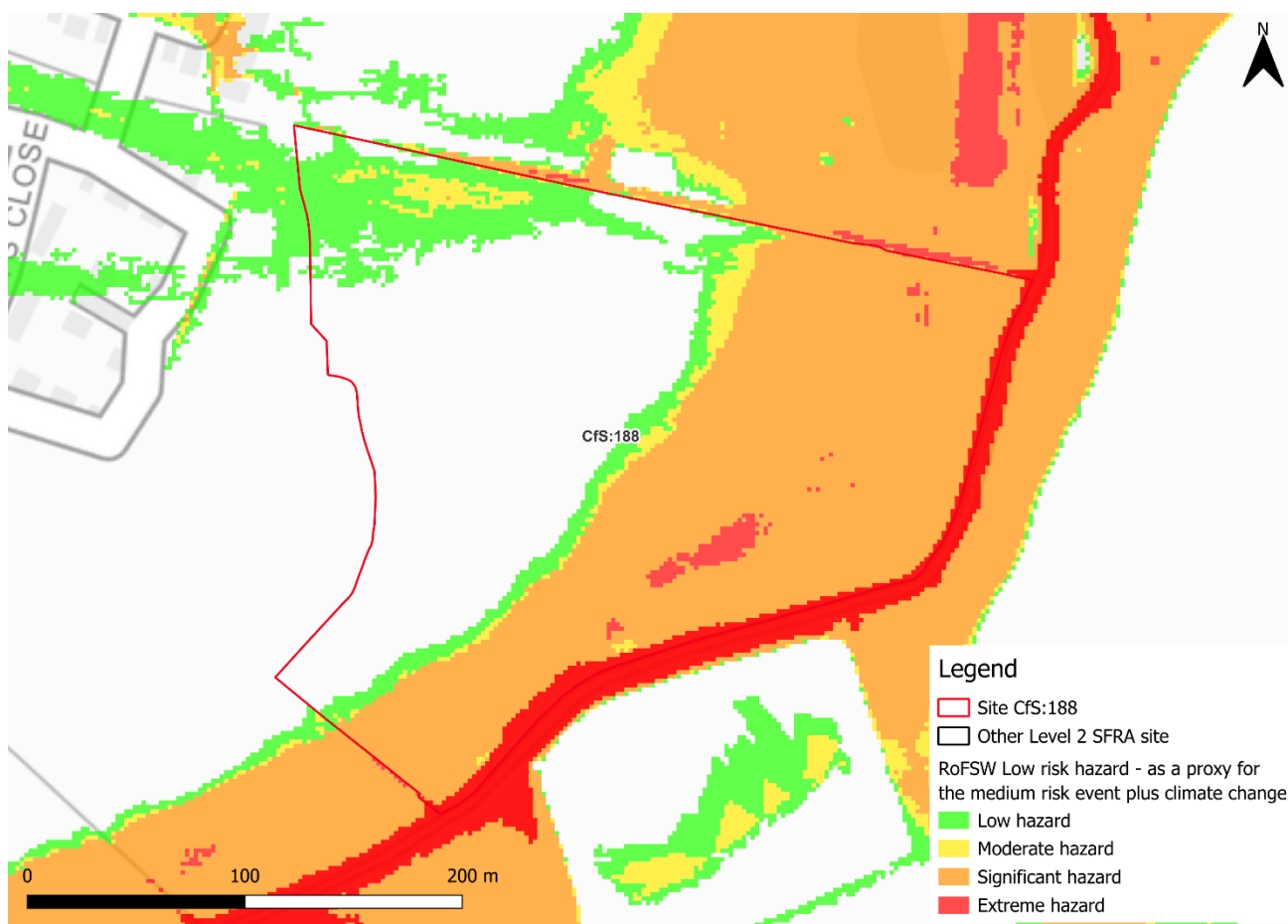


Figure 3-6: Low risk event surface water flood hazard, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

3.3 Observations, mitigation options, site suitability, sequential approach to development management - surface water

- Current risk to the site is predominantly very low, with 79% of the site being at very low surface water flood risk. Surface water risk in all events is largely present within the east of the site, coincident with the area at risk of fluvial flooding. There is an additional surface water flow path through the northwest of the site.
- The effects of climate change on surface water have not been modelled for this SFRA, however the low risk surface water event has been used as a proxy for the medium risk event plus climate change. Risk is modelled to be greater in extent than the present day medium risk event, with a greater extent of modelled flooding across the site.
- Access and escape routes via the existing track to the northwest of the site are modelled to become inundated in all surface water events. An FRA may be required to confirm surface water flood risk conditions and whether safe access and escape routes would be achievable.
- The RoFSW map is not suitable for identifying whether an individual property will flood and is therefore indicative. The RoFSW map is not appropriate to act as the

sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies, modelling, or evidence.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Huntingdonshire Level 1 SFRA (2024), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within one catchment, namely, the Bury Brook catchment. This catchment is ranked as a medium sensitivity catchment. Planning considerations for sites at medium sensitivity to the cumulative impacts of development can be found in Appendix G of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology, soils, SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. This dataset is recommended for use by the EA in the SFRA Good Practice Guide³. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The majority of the site is located within an area classified as no risk of emergence. Through the centre of the site, there is risk of groundwater flooding to surface and subsurface assets, with the possibility of groundwater emerging at the surface locally. The underlying bedrock within the site is a combination of mudstone, siltstone and sandstone (Figure 5-2). Mudstone and siltstone generally have low permeability.

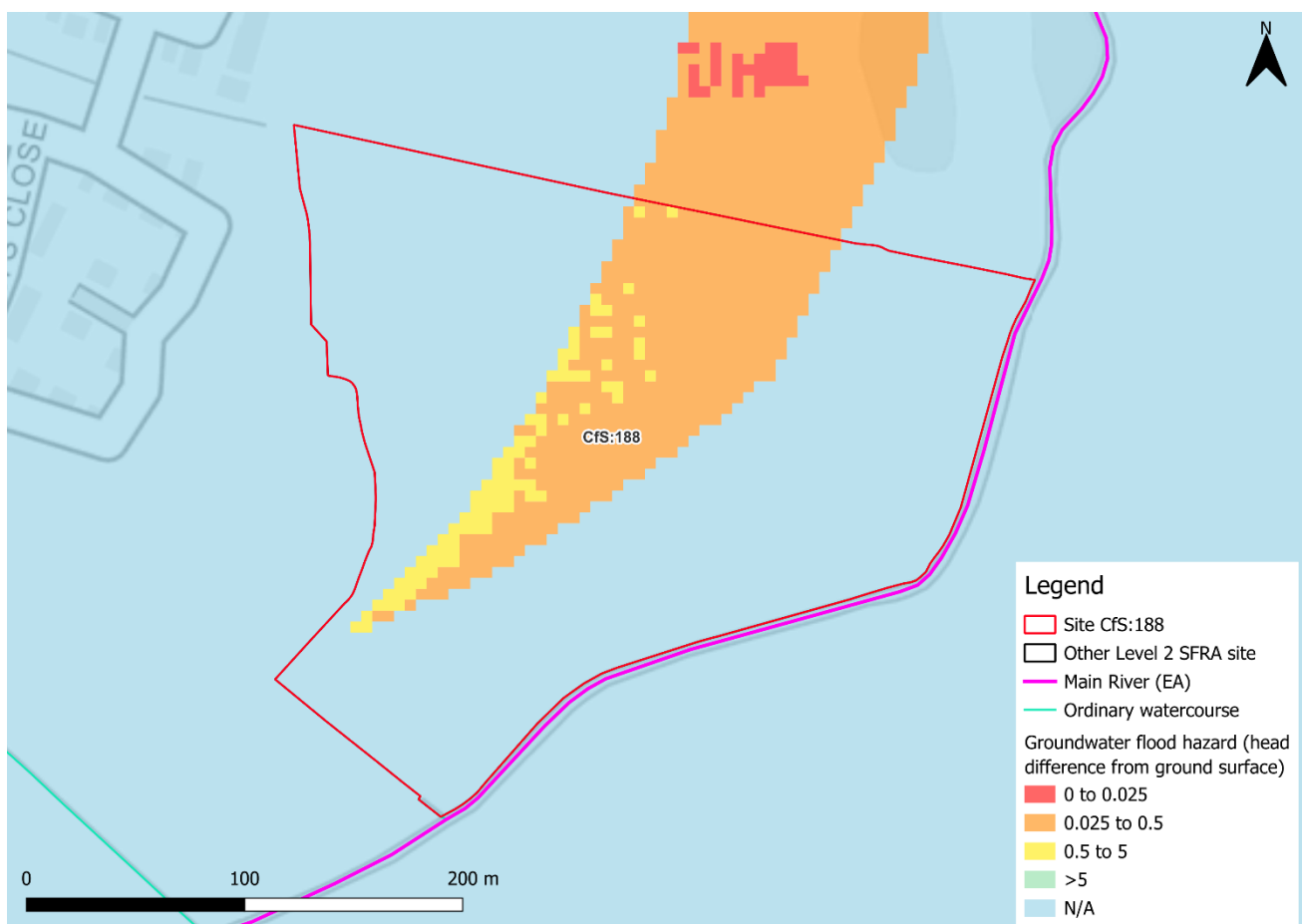


Figure 5-1: JBA 5m Groundwater Emergence Map

³ [Strategic flood risk assessment good practice guide. ADEPT. December 2021.](#)

Table 5-1: Groundwater Hazard Classification

Groundwater head difference (m)*	Class label
0 to 0.025	Groundwater levels are either at very near (within 0.025m of) the Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond
0.025 to 0.5	Groundwater levels are between 0.025m and 0.5m below the ground surface in the 100-year return period flood event. Within this zone there is a risk of groundwater flooding to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.
0.5 to 5	There is a risk of flooding to subsurface assets, but surface
>5	Groundwater levels are at least 5m below the ground surface in the 100-year return period flood event. Flooding from groundwater is not likely.
N/A	This zone is deemed as having a negligible risk from groundwater
*Difference is defined as ground surface in mAOD minus modelled groundwater table in mAOD.	

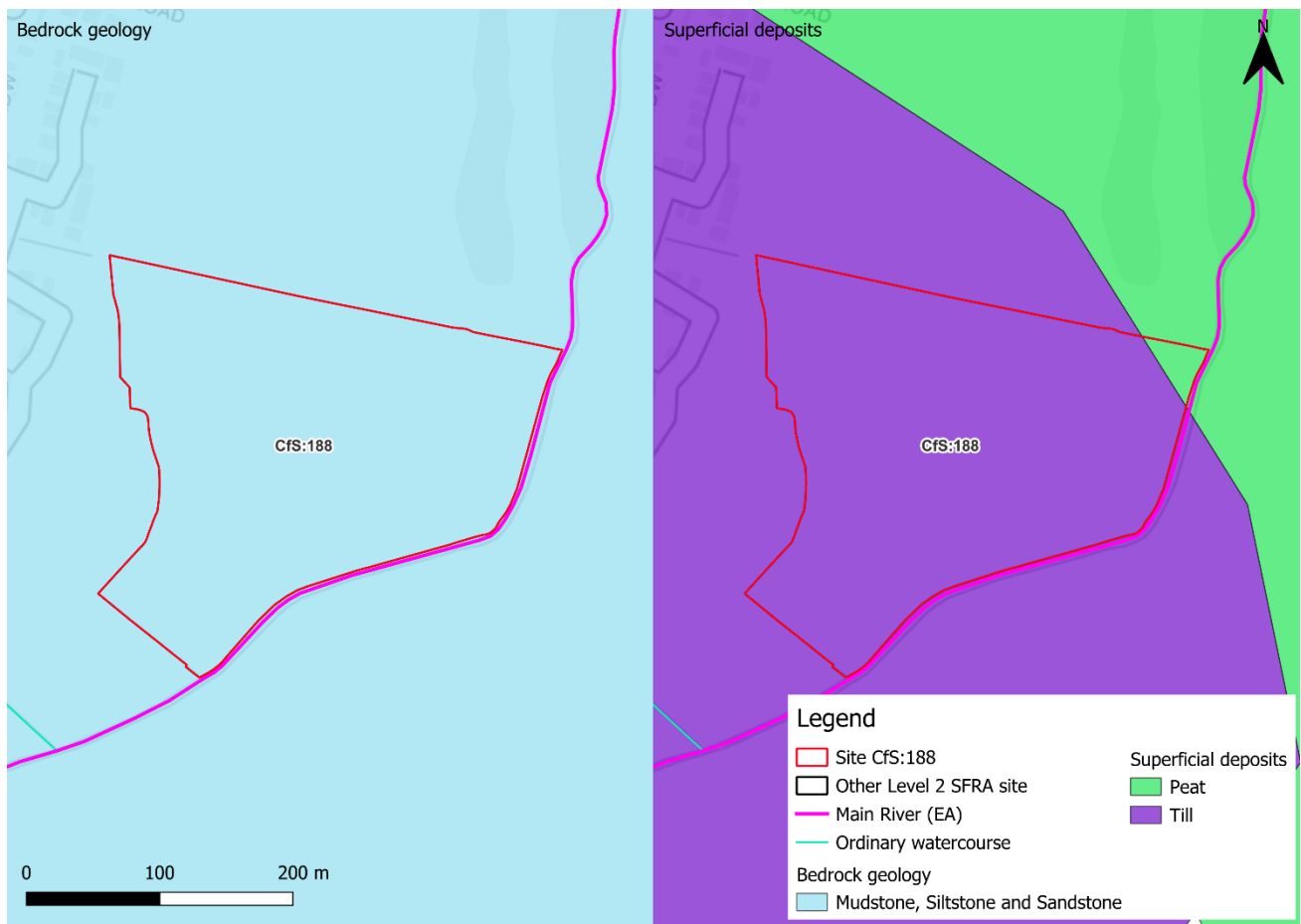


Figure 5-2: Soils and geology

6 Residual risk

Although a site may be afforded some protection from defences and / or drainage infrastructure, there is always a residual risk of flooding from asset failure i.e. breaching / overtopping of flood defences, blockages of culverts or drainage assets.

6.1 Potential blockage / breach

There does not appear to be any residual risk to the site from a blockage or defence breach.

6.2 Flood risk from reservoirs

The EA's Reservoir Flood Maps (RFM) (2021) show where water may go in the unlikely event of a reservoir or dam failure. Figure 6-1 shows the RFM in a 'dry day' and 'wet day' scenario. A 'dry day' scenario assumes that the water level in the reservoir is the same as the spillway level or the underside of the roof for a service reservoir and the watercourses upstream and downstream of the reservoir are at a normal level. A 'wet day' scenario assumes a worst-case scenario where a reservoir releases water held on a 'wet day' when local rivers have already overflowed their banks.

The site is potentially at risk from two reservoirs, namely Foxenfield reservoir and Holland Wood reservoir, both of which are owned and maintained by Abbots Ripton Farming Company. Given the intended use of the site, modelled reservoir risk should not be detrimental to the site.

The EA's SFRA guidance states that where a proposed development site is shown to be at potential risk from reservoir failure, then an assessment into whether the reservoir design or maintenance schedule needs improving should be carried out. Expert advice may be required from an all-reservoirs panel engineer. The Council should consult Anglian Water Services Ltd to ascertain whether the proposed development could affect the reservoir's risk designation, its design category or how it is operated. The Council, as category 1 responders, can access more detailed information about reservoir risk and reservoir owners using the [Resilience Direct](#) system.

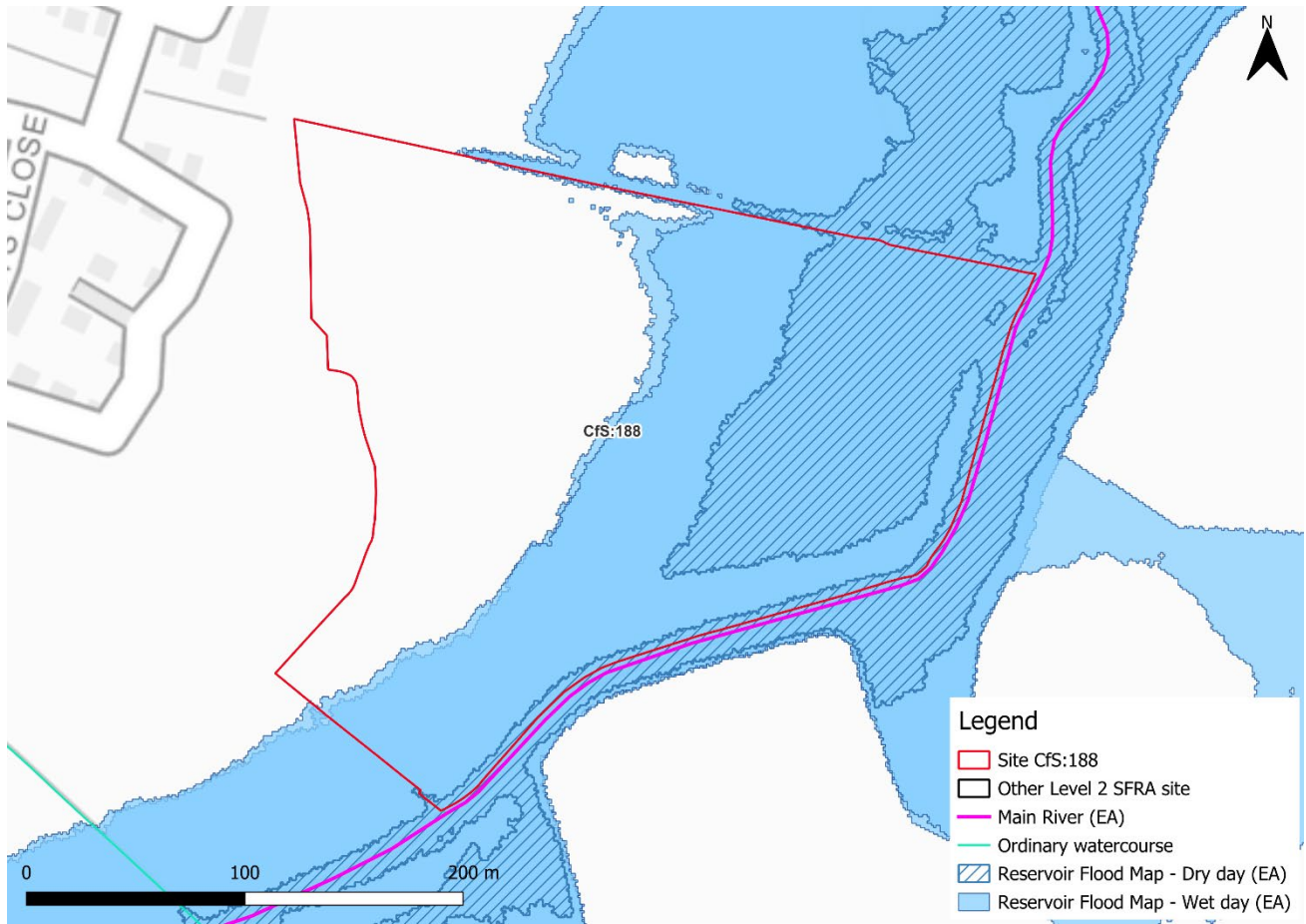


Figure 6-1: EA Reservoir Flood Map

7 Overall site assessment

7.1 Can part b) of the exception test be passed?

This site is not required to pass part b) of the exception test as the site is proposed for natural open space, however it must still be proven that the site can be safe for site users for its lifetime.

7.2 Recommendations summary

Based on the evidence presented in the Level 1 SFRA (2024) and this Level 2 SFRA:

- It should be appropriate to use this site for natural greenspace.
- Updated surface water depth and hazard modelling may be required to establish whether safe access and escape routes would be available during the low risk surface water flood event to ensure safe evacuation of site users.
- Opportunities for NFM features to reduce flood risk to the site and surrounding areas should be explored at the site-specific FRA stage.

7.3 Site-specific FRA requirements and further work

At the planning application stage, the following should be considered:

- Any FRA should establish safe access and escape routes from the site in the event of a flood from High Tide or surface water.
- Any requirement for an FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the HDC Local Plan, and national and local SuDS policy and guidelines.
- Throughout the FRA process, consultation should be carried out with, where applicable, the local planning authority; the lead local flood authority; emergency planning officers; the Environment Agency; Anglian Water; the highways authorities; and the emergency services.

8 Licencing

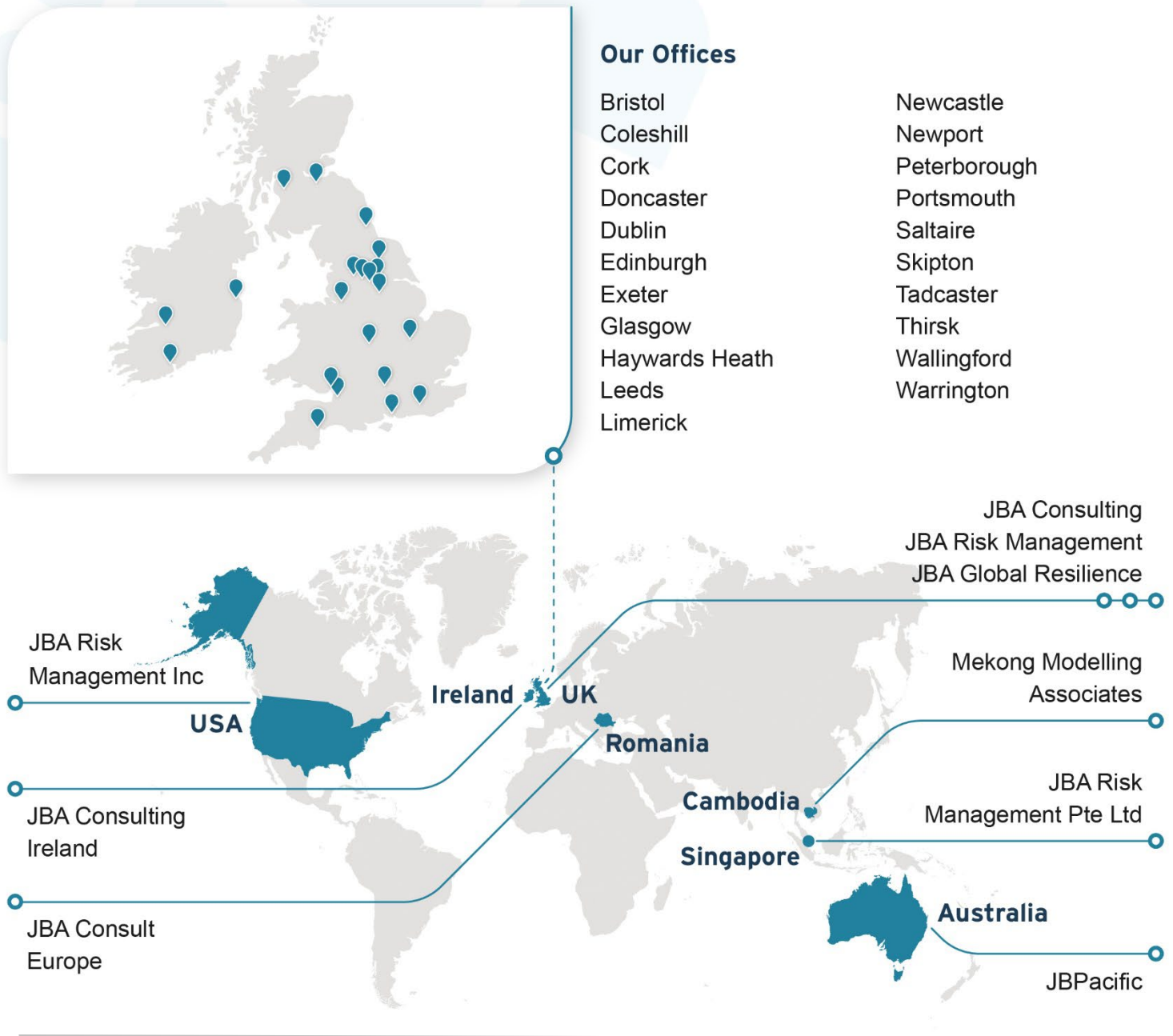
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