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Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

Site CfS:197

Final Report

Prepared for

Huntingdonshire District Council

Date

March 2026

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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. Kira Khangura 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 26 February 2026 and 18 March 2026 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

We would like to thank the Environment Agency, Cambridgeshire County Council for their assistance with this work.

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS23:197. 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:197

- Location: Sapley Park Garden Village
- Existing site use: Open space and agricultural land with a solar farm (Abbots Ripton Solar Farm) present in the western parcel of the site. The western site extent, including the solar farm, is separated from the rest of the site by the East Coast Main Line railway.
- Existing site use vulnerability: Less vulnerable, excluding the western site parcel. The solar farm is classified as essential infrastructure. The solar farm is to remain in place and the open space areas of the western parcel will remain as open space.
- Proposed site use: Mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 580
- Watercourse: Unnamed ordinary watercourses likely to be agricultural field drains, tributaries to Bury Brook (main river)
- Environment Agency (EA) model: N/A
- Summary of requirements from Level 2 SFRA scoping stage:
    - Subject to the Exception Test as more vulnerable development proposed in Flood Zone 3a
    - 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

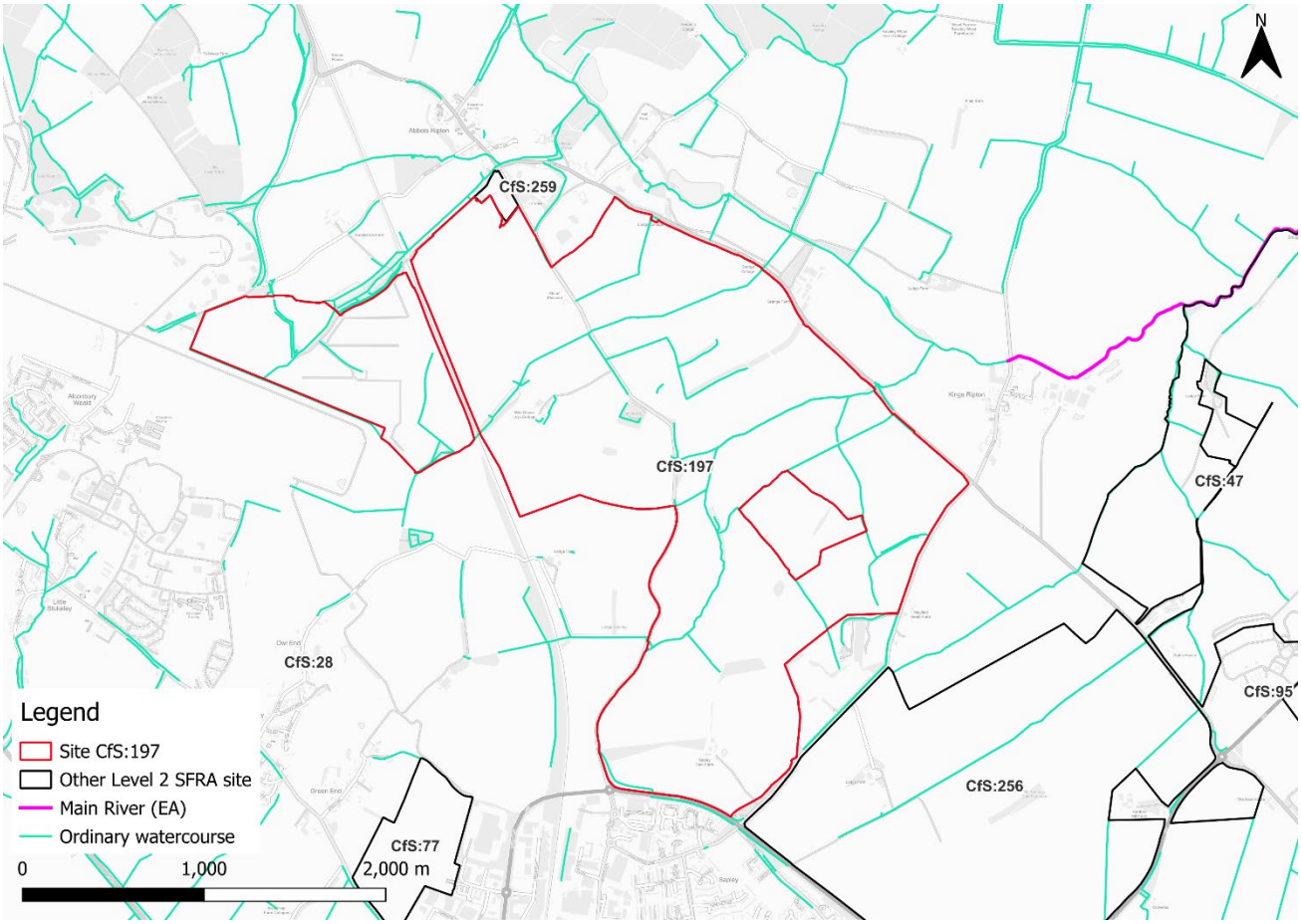

Figure 1-1: Existing site location boundary

Figure 1-2: Aerial photography

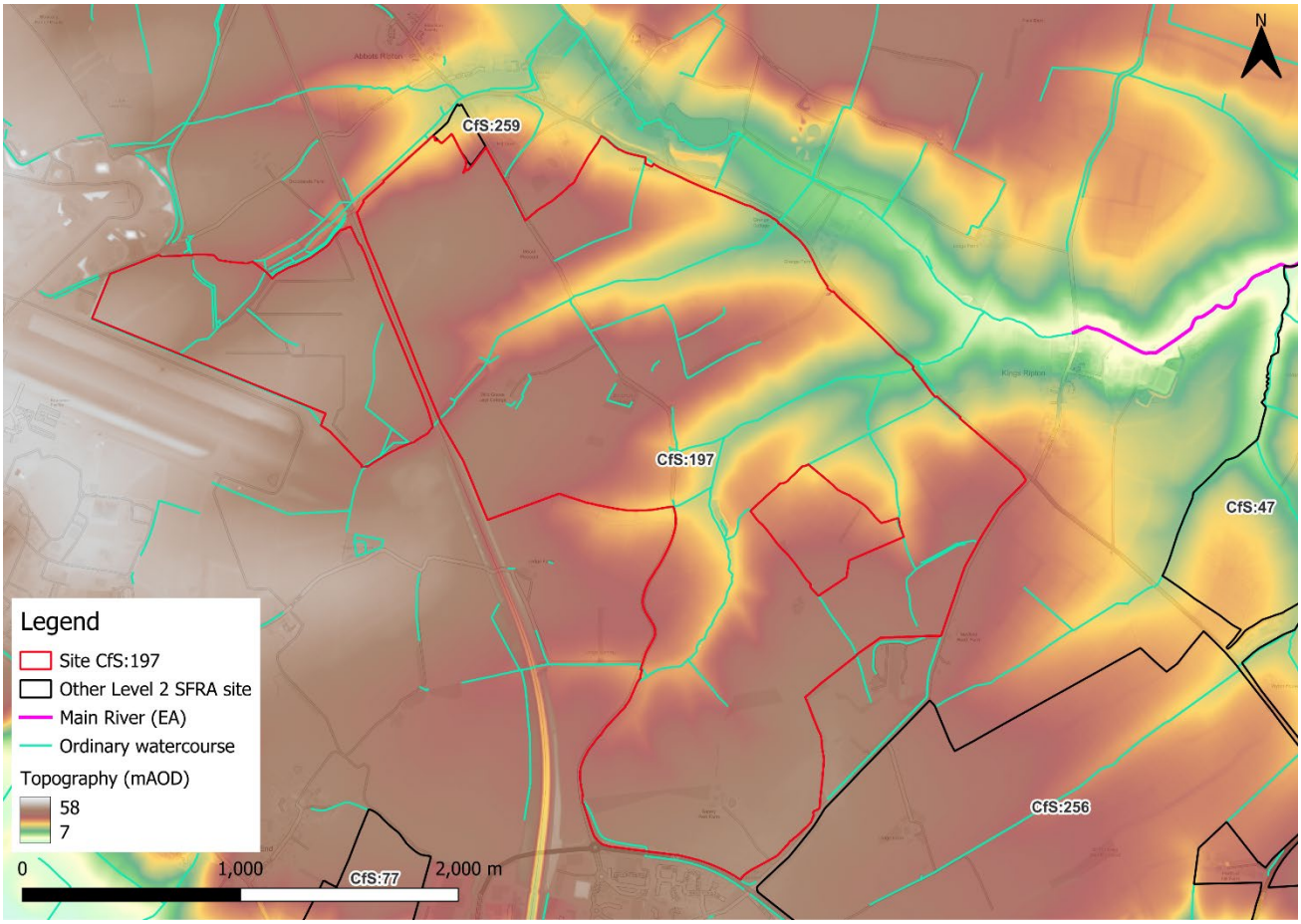

Figure 1-3: Topography

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 March 2026) 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).

The majority of the site is within Flood Zone 1, indicating that this area is at low risk of flooding from rivers and the sea. However, 1% of the site is within Flood Zone 3b and 1% is within Flood Zone 3a. The source of the risk is fluvial from the unnamed ordinary watercourse, which is a tributary to Bury Brook, running through the centre of the site.

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)
97	1	1	1

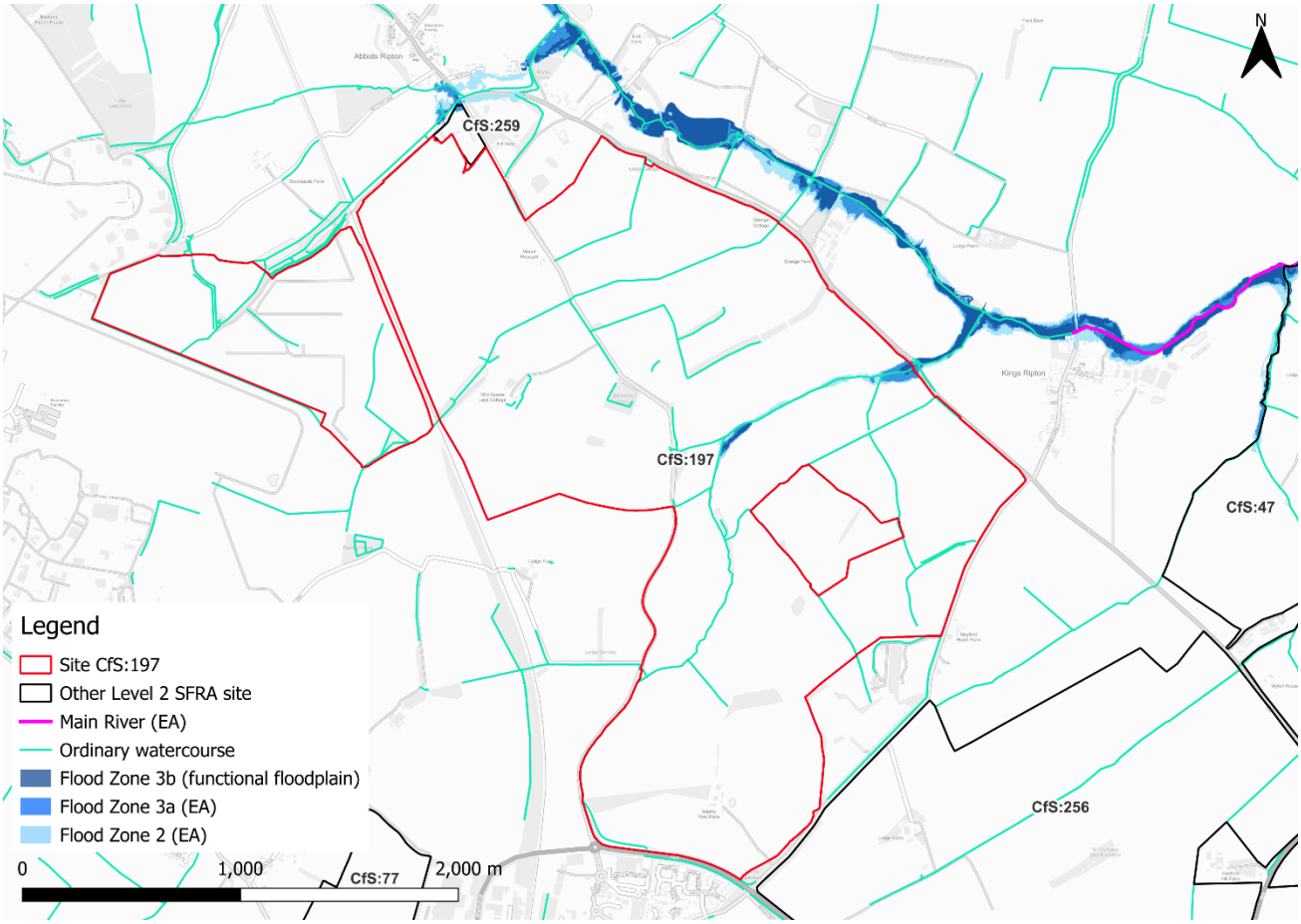

Figure 2-1: Existing risk

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.

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 2-2. Note, the WwNP mapping is broadscale and indicative, therefore further investigation will be required for any land shown to have potential for WwNP. Throughout the whole site and along the ordinary watercourses, there is potential for tree planting to intercept, slow, store and filter water.

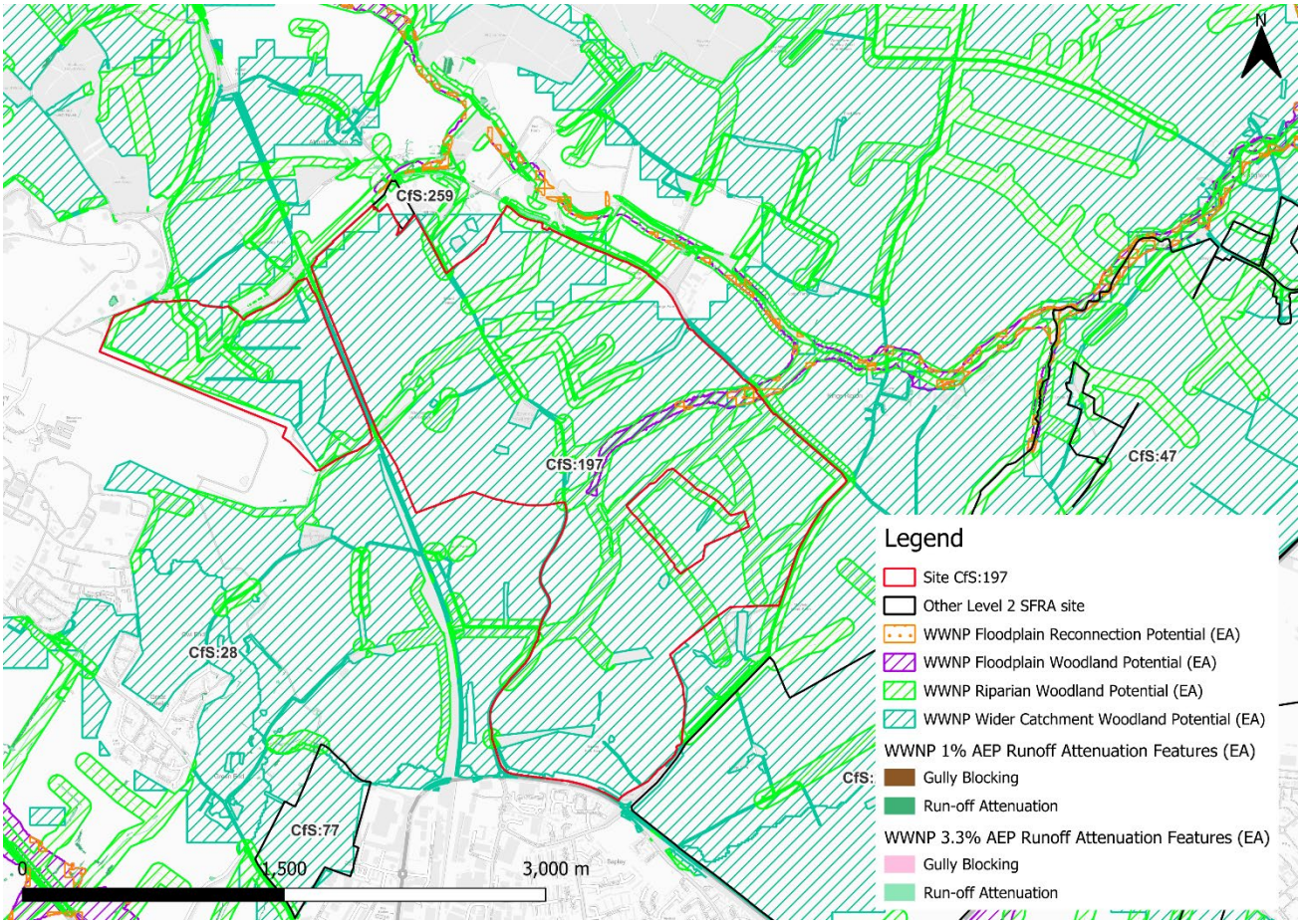

Figure 2-2: Natural Flood Management (NFM) potential mapping

2.3 Impacts from climate change

2.3.1 Fluvial

Figure 2-3 shows the EA's Flood Map for Planning Flood Zones plus Climate Change. The Flood Map for Planning Flood Zones plus Climate Change extent shows increased risk to the site along the Bury Brook tributary, compared to present day flood zones.

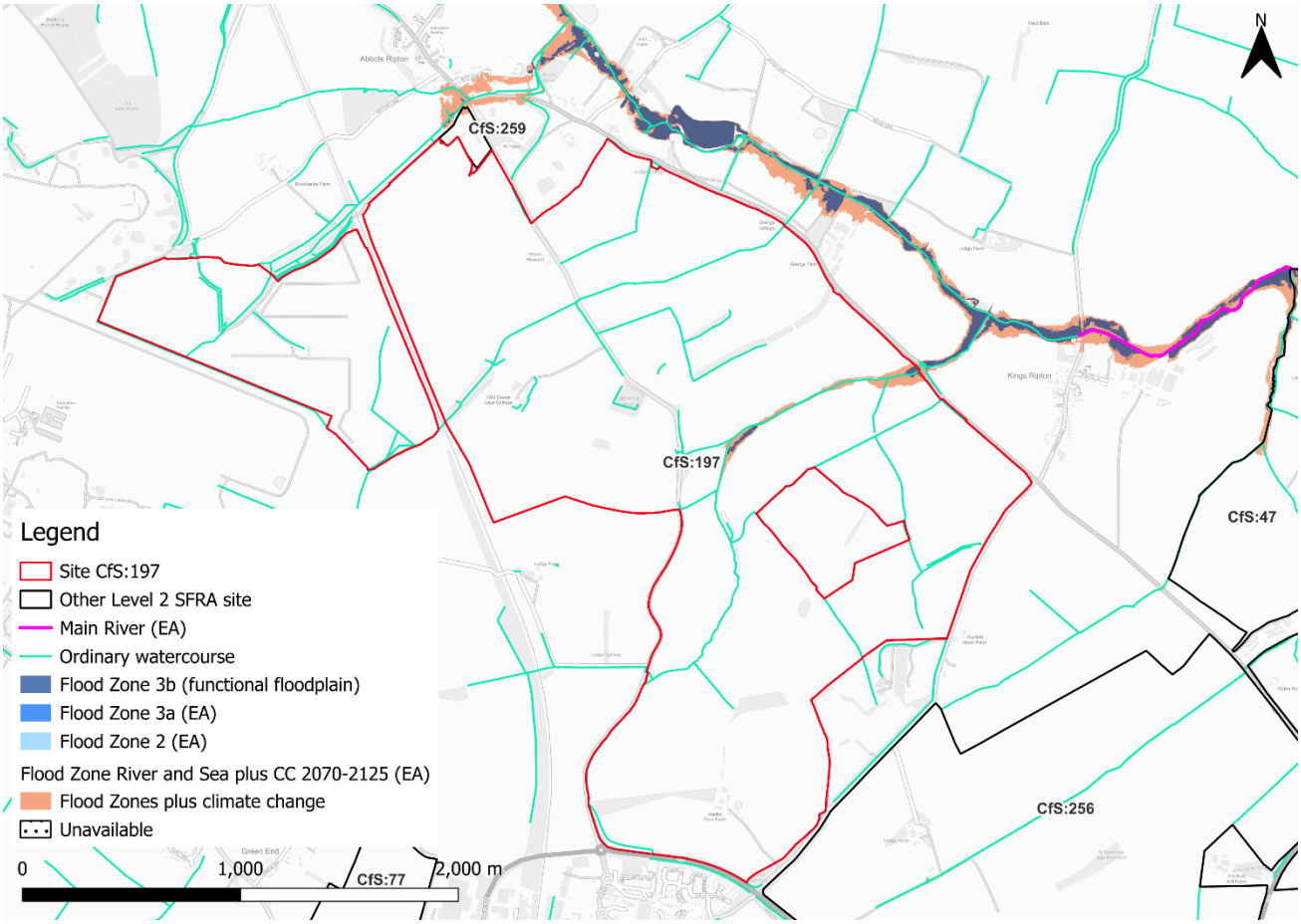

Figure 2-3: Flood Map for Planning - Flood Zones plus Climate Change outputs

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.

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. This site is not located within a FWA.

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 an FWA. As shown in Figure Figure 2-4, the floodplain of the Bury Brook tributary, is located within a FAA, namely the Bury Brook in Cambridgeshire FAA.

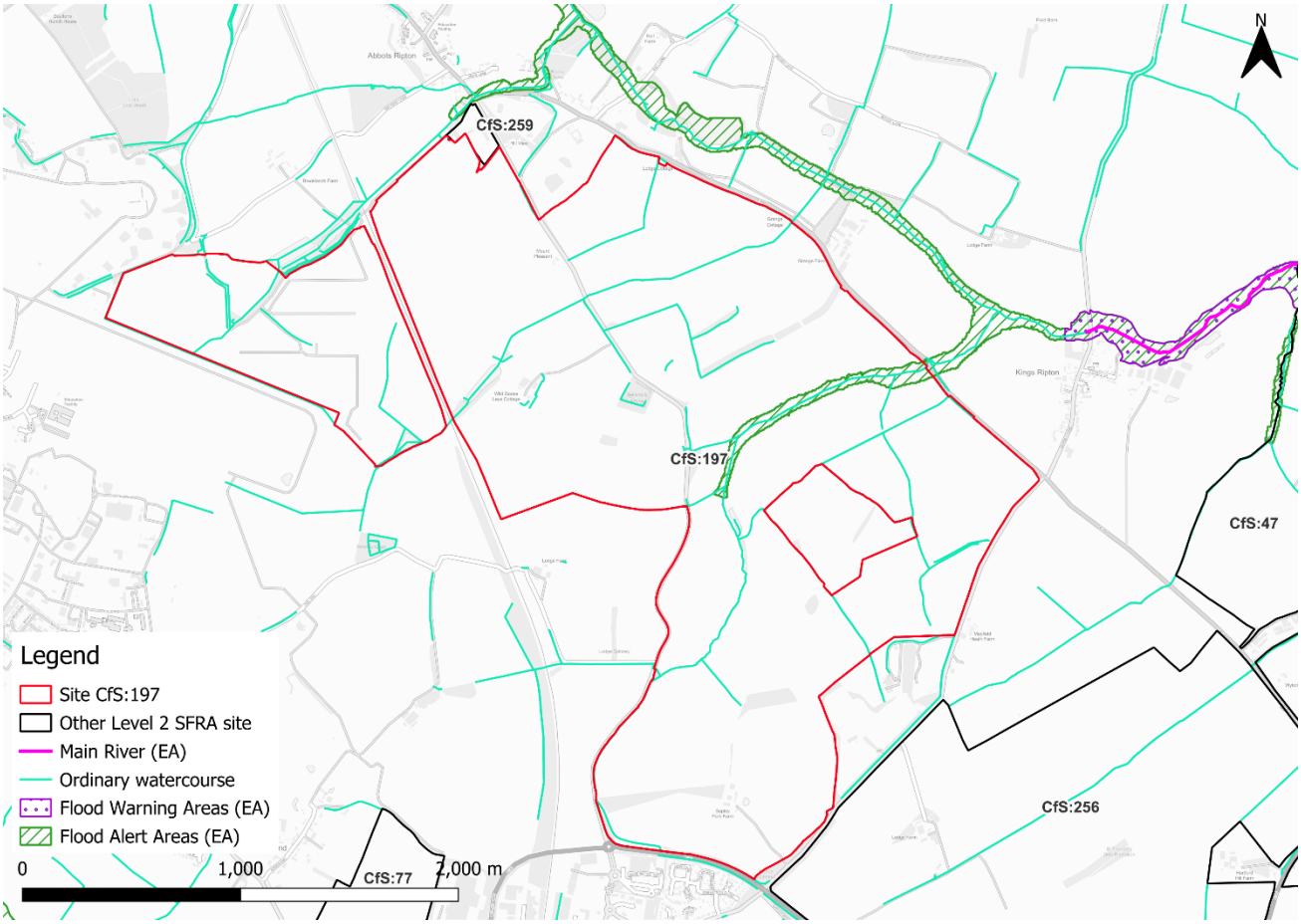

Figure 2-4: EA Flood Warning Areas and Flood Alert Areas

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 B1090 at the northern of the site, Sapley Road at the east of the site and via the access road in the west of the site, as shown by the orange circle in Figure 2-5. However, the flood alert should remain in place to ensure site users can be safe and evacuate the site during the 0.1% AEP fluvial event plus climate change.

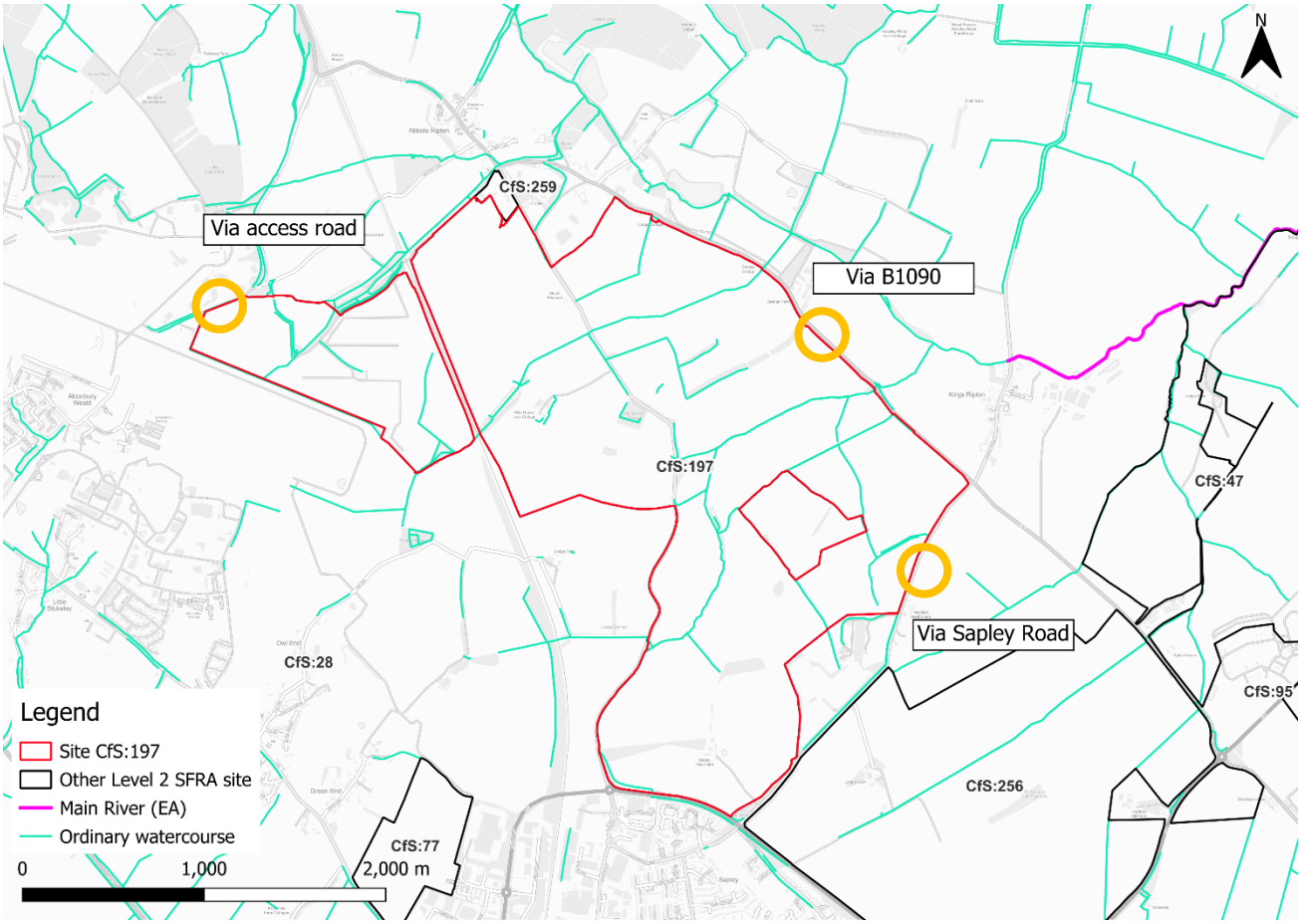

Figure 2-5: Potential access and escape routes

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

- Observations:
  - The proposed development of the site would see a change in the risk classification from less vulnerable to more vulnerable, according to the NPPF, excluding the solar farm.
  - The site is partially located within fluvial Flood Zone 3a and therefore must be subject to the exception test.
  - Based on current information, it should be possible to develop the majority of the site, ideally avoiding the risk areas present along the ordinary watercourse running through the centre of the site.
- Defences:
  - There are no engineered flood defences within the vicinity of the site that are likely to impact fluvial flood risk.
- Mitigation:
  - The risk areas, once confirmed, should not be developed and be left as open green space and be included within a blue green corridor, providing multiple

benefits alongside flood risk including ecological, social and amenity value to the site.
    - The site-specific FRA should confirm the risk to the site, including modelled flood depths and hazards, accounting for climate change.
    - Biodiversity Net Gain (BNG) should be considered in development planning around the onsite watercourses with agreed no development buffers in place. The Environment Act makes provisions for mandatory BNG if a development falls within 10 meters of a watercourse.
    - EA guidance states that a flood risk permit to work on ordinary watercourses is not required. However, the developer should contact the LLFA to check if land drainage consent is required.
    - The ordinary watercourses should be included within the site design and layout. Infilling of drainage ditches should be avoided.
    - Were development of this site to proceed, given the large size of this site and the proximity of this site to neighbouring sites CfS:256 and CfS:259, it would be prudent to formulate a strategy to develop these sites in tandem and for consultation between each developer to take place to ensure a joined-up approach for sustainable development is in place.
- Access and escape:
    - Safe access and escape routes must be available at times of flood and appear to be available via the B1090 at the northern of the site, Sapley Road at the east of the site and via the access road in the west of the site. An FAA 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 alerts should continue to be in place to ensure early evacuation of site users were an extreme flood event to occur.

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 3% of the site is at high surface water risk. A further 2% is at medium risk and a further 4% is at low surface water risk, as shown in Table 3-1. Surface water risk is widespread across the site, mainly following the ordinary watercourses and other flow paths, as well as in various topographic low spots. There is also a noticeable extent of surface water flood risk in the location surrounding Abbots Ripton solar farm in the west of the site.

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)
91	4	2	3

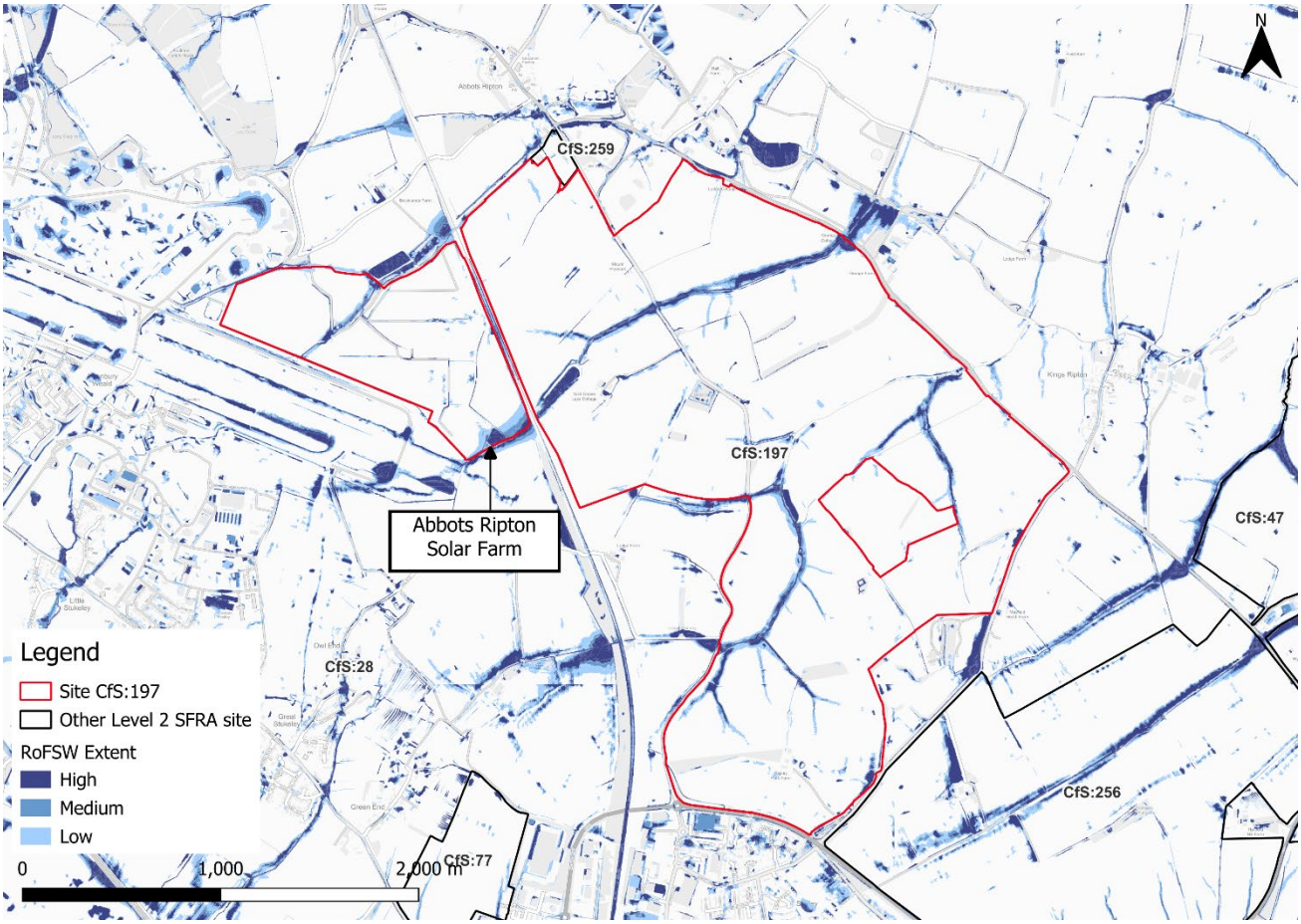

Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

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 greater than 1.2m, with several areas classified as significant hazard.

There are significant differences in the extent of surface water flooding between the NaFRA2 RoFSW map and the third-generation depths and hazard mapping, with greater surface water flood risk extents across the site in the NaFRA2 mapping than the third generation mapping. The third generation mapping predominately only captures surface water risk surrounding the ordinary watercourses and around the solar farm and does not show as much surface water risk in topographic low spots. This reinforces the requirement for detailed assessment of surface water at the FRA stage to establish surface water flood risk conditions.

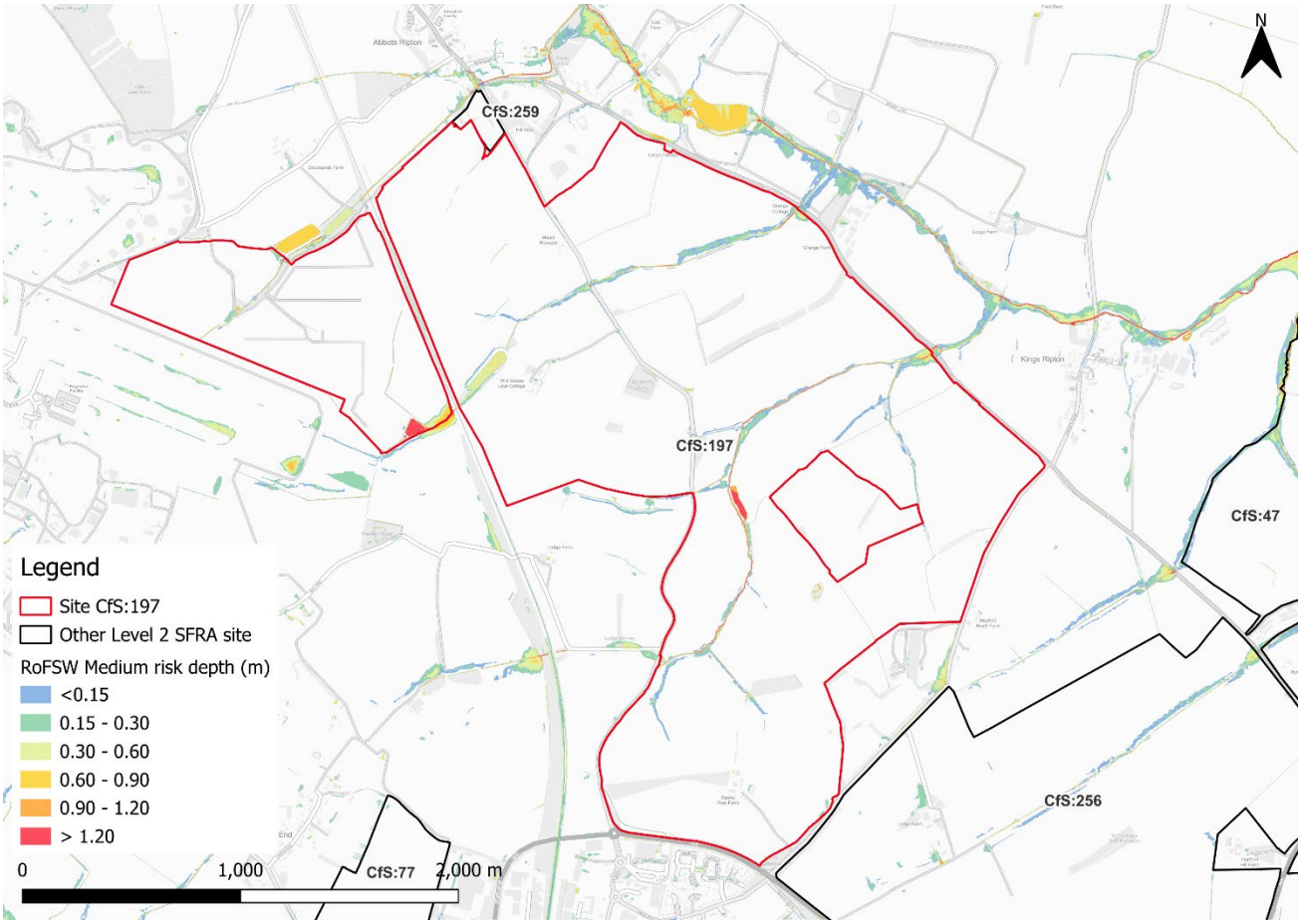

Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)

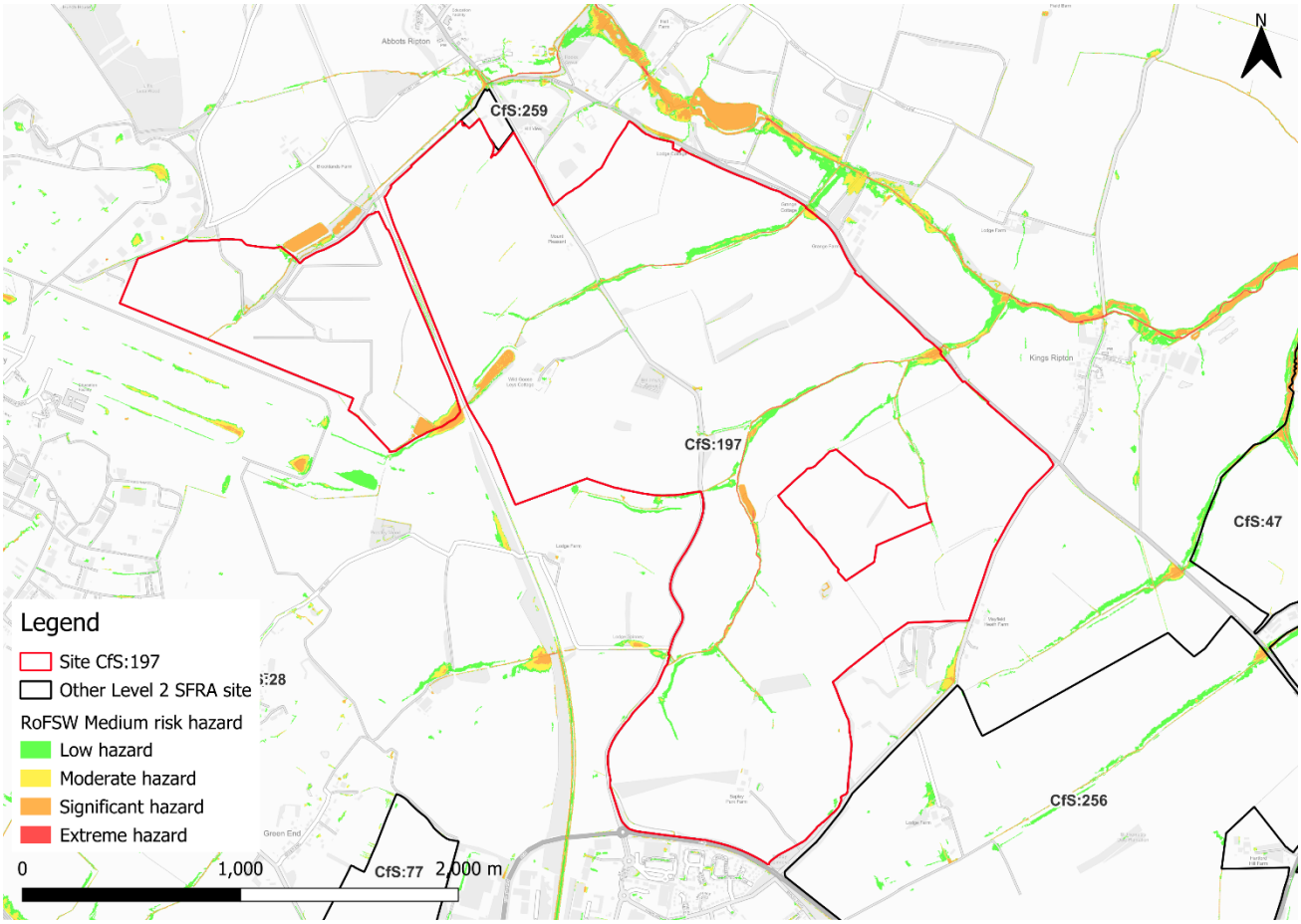

Figure 3-3: Medium risk event surface water flood hazard[1] (Third generation - Risk of Flooding from Surface Water map)

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). Additionally, the third generation surface water maps a greater extent of area with depths of over 1.2m and classifications of extreme hazard.

1 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

The NaFRA2 extents appear to be smaller in area than the third generation mapping. There are therefore differences between the NaFRA2 RoFSW map and the third-generation depths and hazard mapping. This reinforces the requirement for detailed assessment of surface water at the FRA stage to establish surface water flood risk conditions.

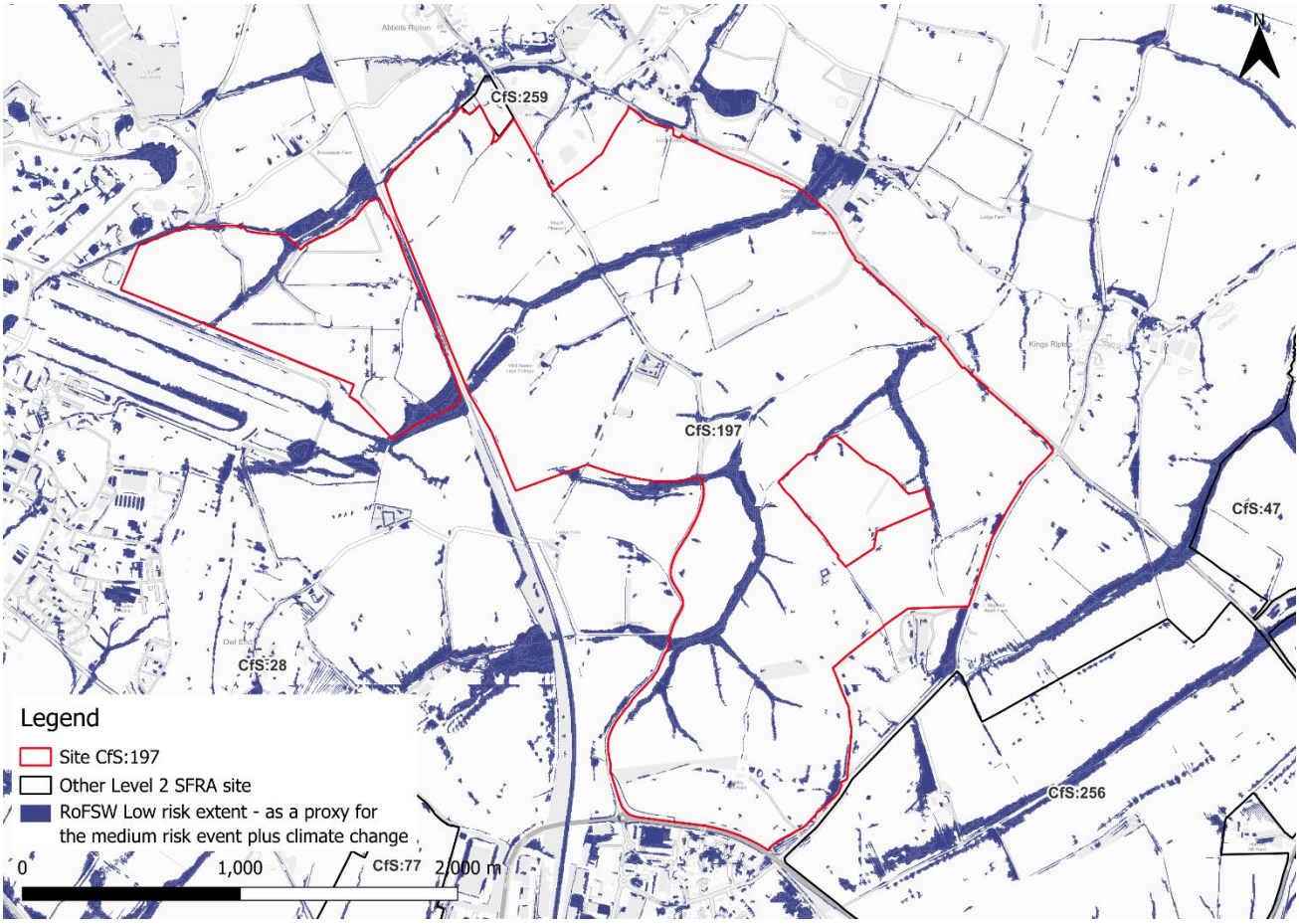

Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

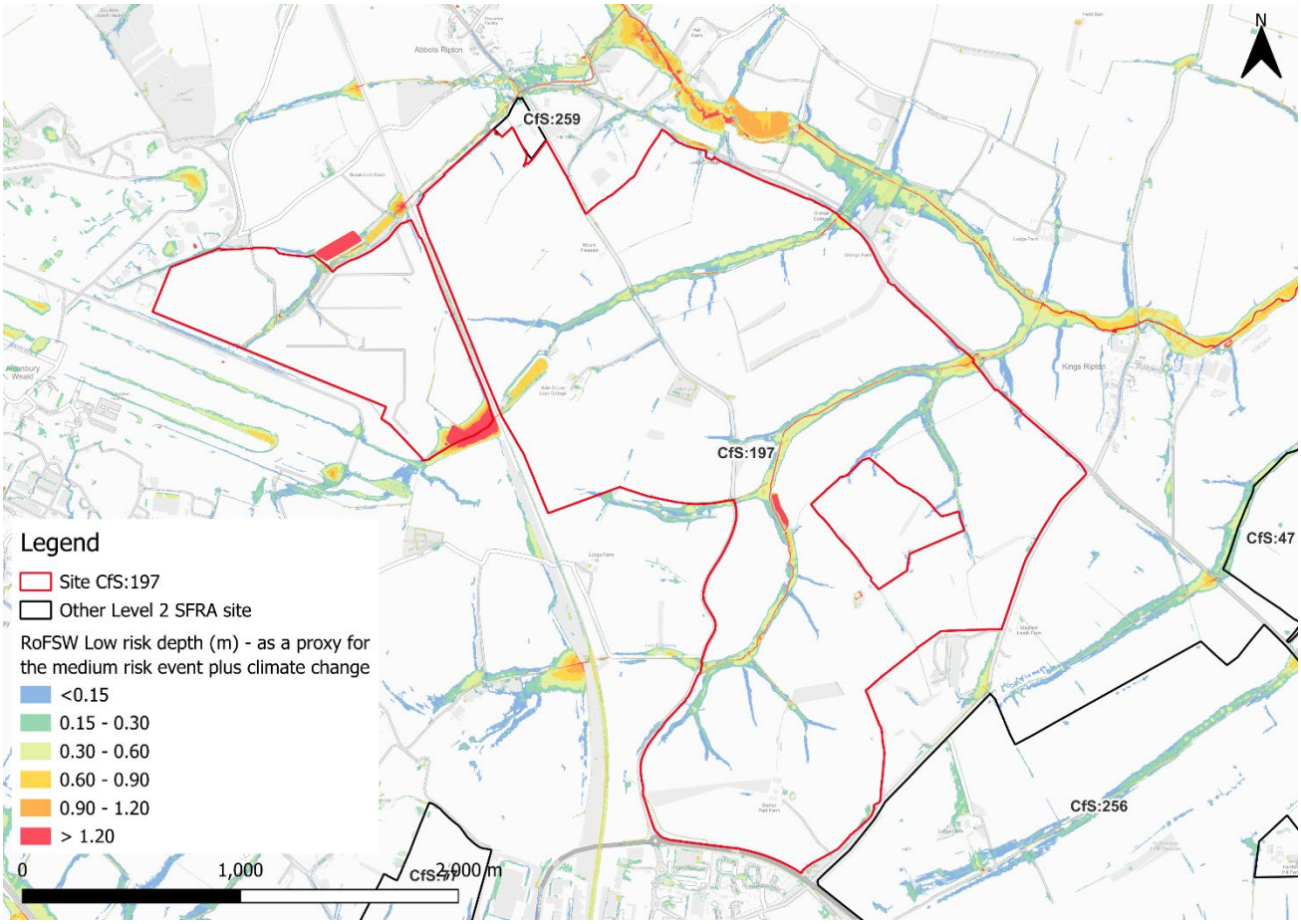

Figure 3-5: Low risk event surface water flood depths, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

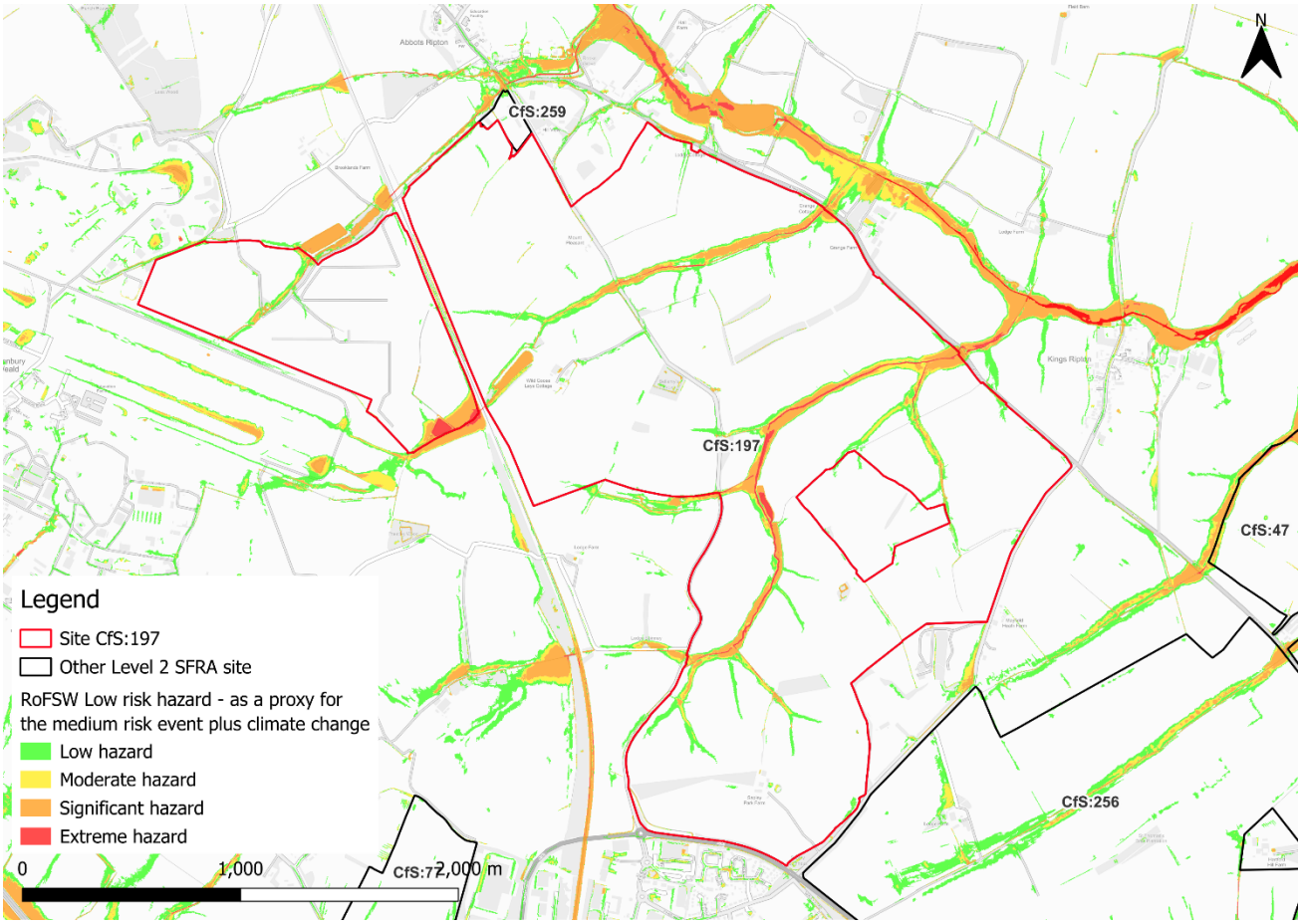

Figure 3-6: Low risk event surface water flood hazard, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

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

- Current risk to the site is predominantly very low, with 91% of the site being at very low surface water flood risk. Surface water risk in all events is present across the site, predominately following the ordinary watercourses, in topographic low spots and around the current site of Abbots Ripton solar farm.
- 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.
- Surface water flood depths, hazards, including for the impact of climate change should be considered further through the site-specific FRA and drainage strategy. Any surface water modelling at the FRA stage should consider flood depths and hazards.
- There are differences between the NaFRA2 RoFSW map and the third-generation depths and hazard mapping. This reinforces the requirement for detailed assessment of surface water at the FRA stage to establish surface water flood risk conditions.

- Topographic low spots and flow paths should be incorporated into site design and layout. The Bury Brook tributary and its risk area should be included within a blue green corridor.
- 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 Guide[2]. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

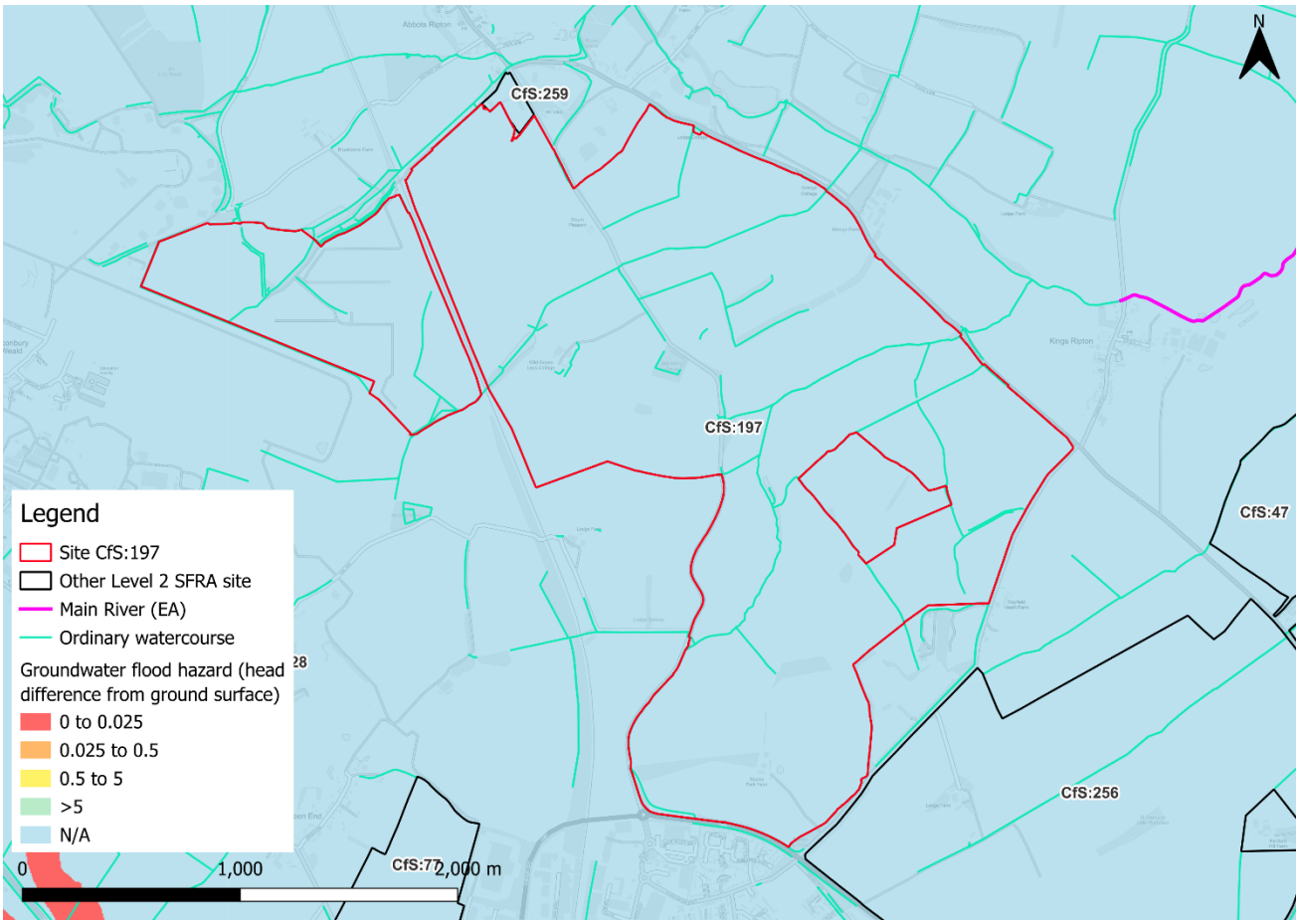

Figure 5-1: JBA 5m Groundwater Emergence Map

The entirety of the site is classified as no risk of emergence. Infiltration SuDS should be suitable at this site based on groundwater. However, the underlying bedrock within the site is a combination of mudstone, siltstone and sandstone (Figure 5-2). Mudstone and siltstone generally have low permeability.

2 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 ground surface in the 100-year return period flood event. 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 within any topographic low spots.
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	Groundwater levels are between 0.5m and 5m below the ground surface in the 100-year return period flood event There is a risk of flooding to subsurface assets, but surface manifestation of groundwater is unlikely.
>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	No risk. This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits.
*Difference is defined as ground surface in mAOD minus modelled groundwater table in mAOD.	

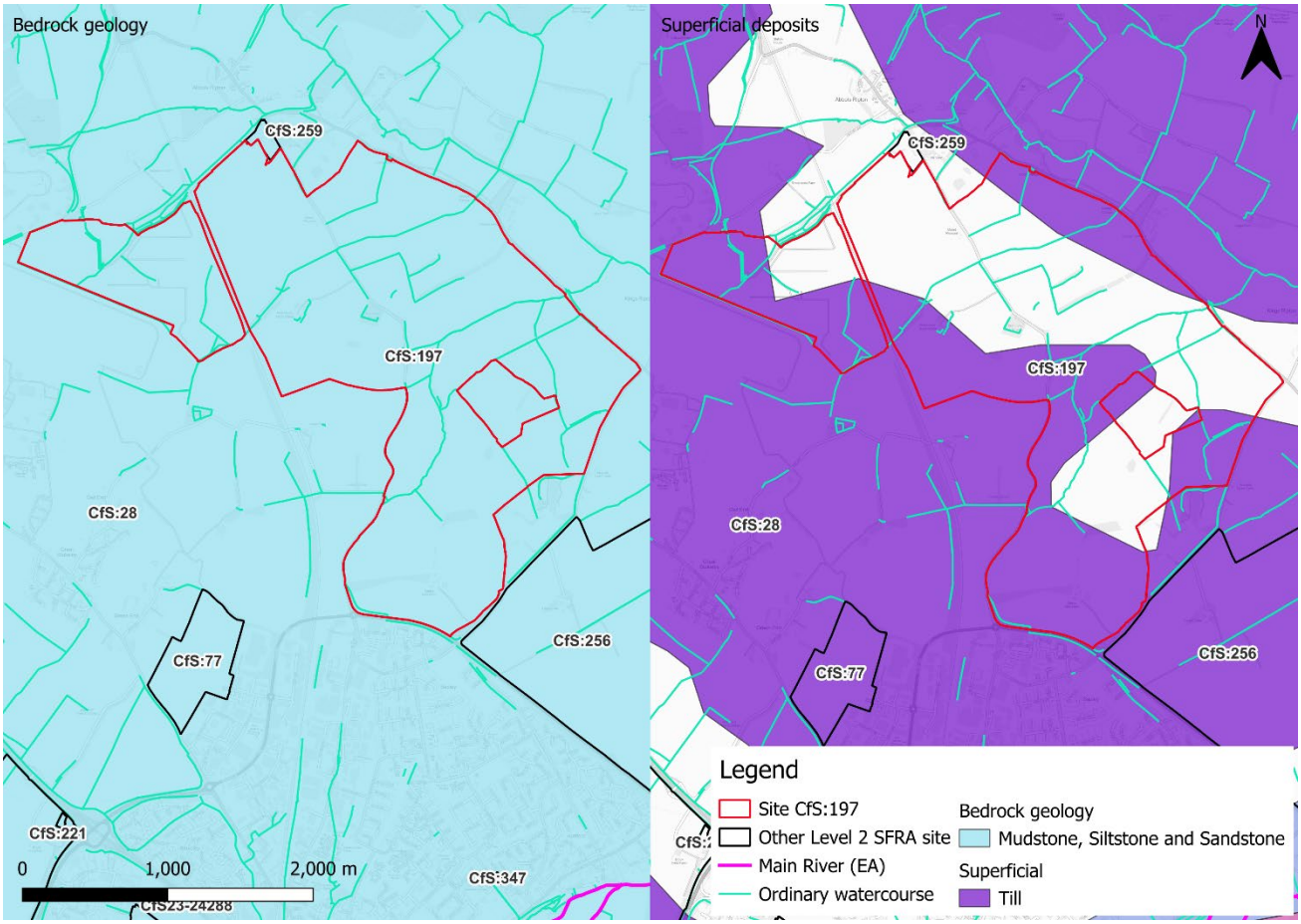

Figure 5-2: Soils and geology

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 blockages

There are multiple culverts located in and around the site. These structures will require investigation at the FRA stage. Culvert course and condition surveys may be required, including for consultation with the culvert owner.

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. 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 not modelled to be at risk from reservoir flooding.

7 Overall site assessment

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

This site is required to pass part b) of the exception test as it is proposed for more vulnerable development and is located within Flood Zone 3a. Based on the information presented in this Level 2 SFRA, the exception test could be passed and the site allocated, assuming the risk area of the Bury Brook tributary is left as open greenspace and included within a blue green corridor. However, the test should be reapplied at the application stage as some flood risk information has not been available for consideration in this Level 2 SFRA, as outlined below. The test should also be reapplied if more recent information about existing or potential flood risk becomes available at application stage.

7.2 Recommendations summary

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

- Based on current information, it should be appropriate to develop this site for more vulnerable purposes given it is located predominantly within Flood Zone 1 and with surface water risk largely confined to the channels of the ordinary watercourses. However, this assumes the risk area can remain as open greenspace and development does not take place near onsite ordinary watercourses.
- Risk from the onsite ordinary watercourses should be investigated at the FRA stage. Modelling may be required. The Bury Brook tributary should be included within a blue green corridor.
- A detailed drainage strategy will be required for any new development, given the large area of the site and the fact it is currently greenfield.
- There is potential residual risk to the site from blockages of numerous culvert sections of watercourse around the site. Residual risk should be assessed at the FRA stage.
- Opportunities for NFM features to reduce flood risk to the site and surrounding areas should be explored at the site-specific FRA stage.
- Multiple safe access and escape routes should be considered further to ensure safe evacuation of site users during the low risk surface water flood event.
- EA flood alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.
- Were development of this site to proceed, given the proximity of this site to neighbouring sites CfS:259 and CfS:256, it would be prudent to formulate a strategy to develop these sites in tandem and for consultation between each developer to take place to ensure a joined-up approach for sustainable development is in place.

7.3 Site-specific FRA requirements and further work

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

- Confirmation of fluvial risk to the site from all watercourses. Modelling may be required. Residual risk from culvert blockages should be investigated.
- Further consideration of surface water flood risk, including a detailed drainage strategy. Discharge rates should remain at greenfield rates at a minimum in consultation with the LLFA.
- 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.

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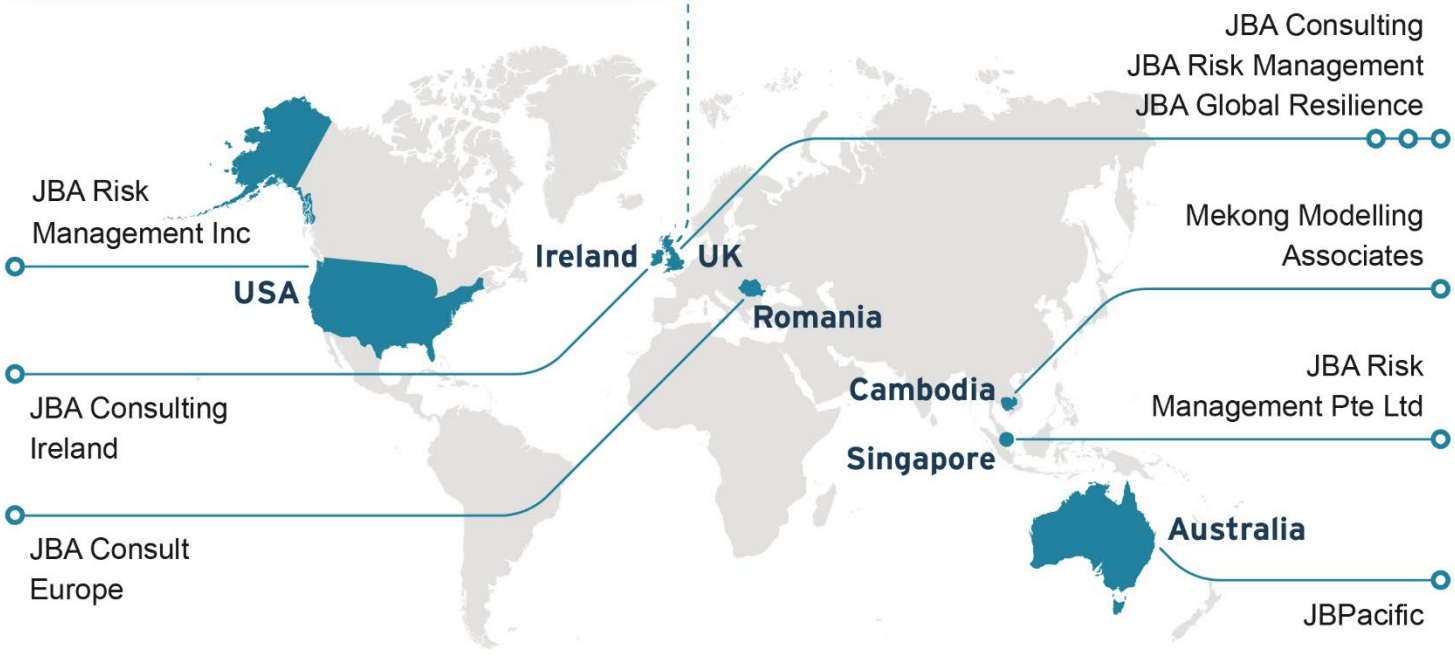

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