



Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

Site CfS:167

Final Draft Report

Prepared for
Huntingdonshire District
Council

Date
November 2025

Document Status

Issue date	6 November 2025
Issued to	Frances Schulz
BIM reference	JFI-JBA-XX-XX-RP-EN-0055
Revision	P03
Prepared by	Amy Ewens BSc Analyst
Reviewed by	Mike Williamson BSc MSc CGeog FRGS EADA Principal Analyst
Authorised by	Paul Eccleston BA CertWEM CEnv MCIWEM C.WEM Technical Director

Carbon Footprint

The format of this report is optimised for reading digitally in pdf format. Paper consumption produces substantial carbon emissions and other environmental impacts through the extraction, production and transportation of paper. Printing also generates emissions and impacts from the manufacture of printers and inks and from the energy used to power a printer. Please consider the environment before printing.

Accessibility

JBA aims to align with [governmental guidelines on accessible documents](#) and [WGAG 2.2](#) AA standards, so that most people can read this document without having to employ special adaptation measures. This document is also optimised for use with assistive technology, such as screen reading software.

Contract

JBA Project Manager	Mike Williamson
Address	Phoenix House, Lakeside Drive, Centre Park, Warrington, WA1 1RX
JBA Project Code	2022s1322

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. Amy Ewens of JBA Consulting carried out this work.

Purpose and Disclaimer

Jeremy Benn Associates Limited ("JBA") has prepared this Report for the sole use of Huntingdonshire District Council in accordance with the Agreement under which our services were performed.

JBA has no liability for any use that is made of this Report except to Huntingdonshire District Council for the purposes for which it was originally commissioned and prepared.

No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by JBA. This Report cannot be relied upon by any other party without the prior and express written agreement of JBA.

JBA disclaims any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to JBA's attention after the date of the Report.

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

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

Copyright

© Jeremy Benn Associates Limited 2025

Contents

1	Background	1
1.1	Site CfS:167	1
2	Flood risk from rivers and sea	5
2.1	Existing risk	5
2.2	Flood risk management	6
2.3	Impacts from climate change	7
2.4	Historic flood incidents	7
2.5	Emergency planning	8
2.6	Observations, mitigation options, site suitability, sequential approach to development management - fluvial and tidal	9
3	Flood risk from surface water	10
3.1	Existing risk	10
3.2	Impacts from climate change	13
3.3	Observations, mitigation options, site suitability, sequential approach to development management - surface water	16
4	Cumulative impacts assessment and high risk catchments	18
4.1	Level 1 cumulative impacts assessment	18
5	Groundwater, geology, soils, SuDS suitability	19
6	Residual risk	22
6.1	Flood risk from reservoirs	22
7	Overall site assessment	23
7.1	Can part b) of the exception test be passed?	23
7.2	Recommendations summary	23
7.3	Site-specific FRA requirements and further work	23
8	Licencing	24

List of Figures

Figure 1-1: Existing site location boundary	2
Figure 1-2: Aerial photography	3
Figure 1-3: Topography	4
Figure 2-1: Existing risk	5
Figure 2-2: Natural Flood Management (NFM) potential mapping	6
Figure 2-3: Potential access and escape routes	8
Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)	11
Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)	12
Figure 3-3: Medium risk event surface water flood hazard (Third generation - Risk of Flooding from Surface Water map)	13
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)	14
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)	15
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)	16
Figure 5-1: JBA 5m Groundwater Emergence Map	19
Figure 5-2: Soils and geology	21

List of Tables

Table 2-1: Existing flood risk based on percentage area of site at risk	5
Table 2-2: Modelled climate change allowances for peak river flows for the Upper and Bedford Ouse management catchment	7
Table 3-1: Existing surface water flood risk based on percentage area at risk using the NaFRA2 RoFSW map	10
Table 5-1: Groundwater Hazard Classification	20

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS:167. 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:167

- Location: Land to the South of Rectory Road, Bluntisham
- Existing site use: Agricultural
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 1.52
- Watercourse: Wadsby's Folly (main river) and River Great Ouse (main river)
- Environment Agency (EA) model: River Great Ouse (Lower Ouse - Downstream 2015)
- Summary of requirements from Level 2 SFRA scoping stage:
 - Assessment of surface water flood extent, depths and hazards
 - Assessment of all other sources of flood risk

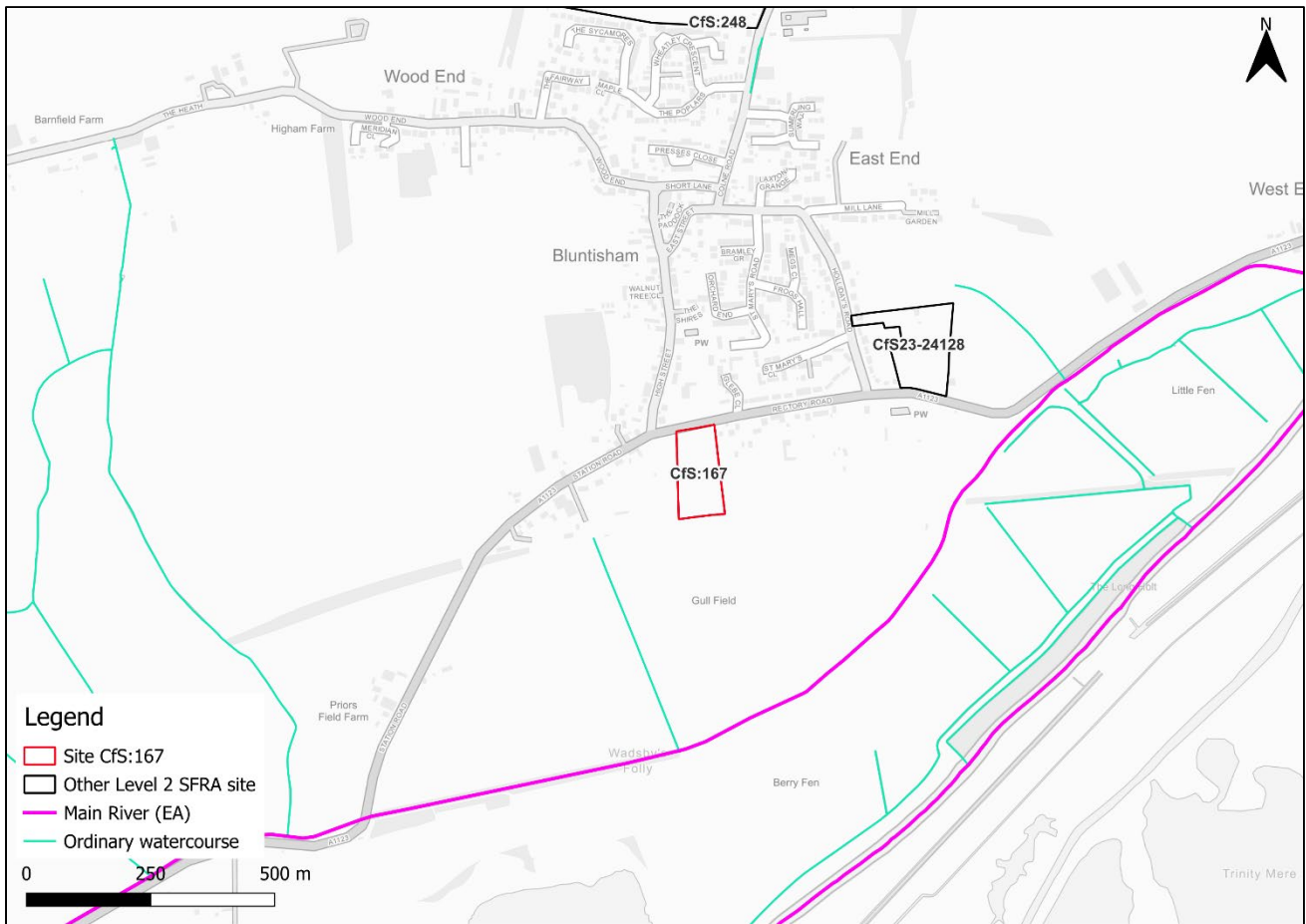


Figure 1-1: Existing site location boundary

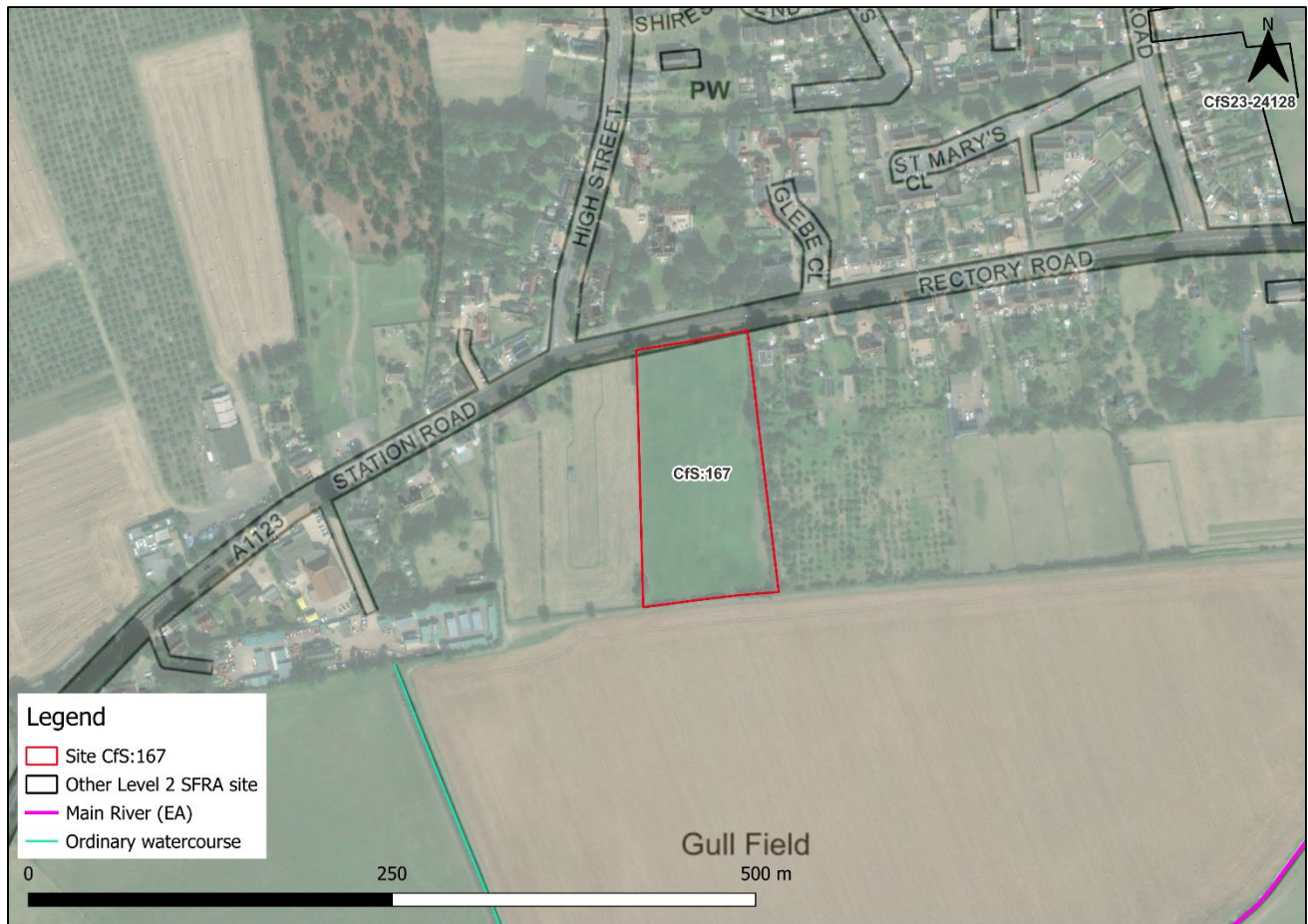


Figure 1-2: Aerial photography

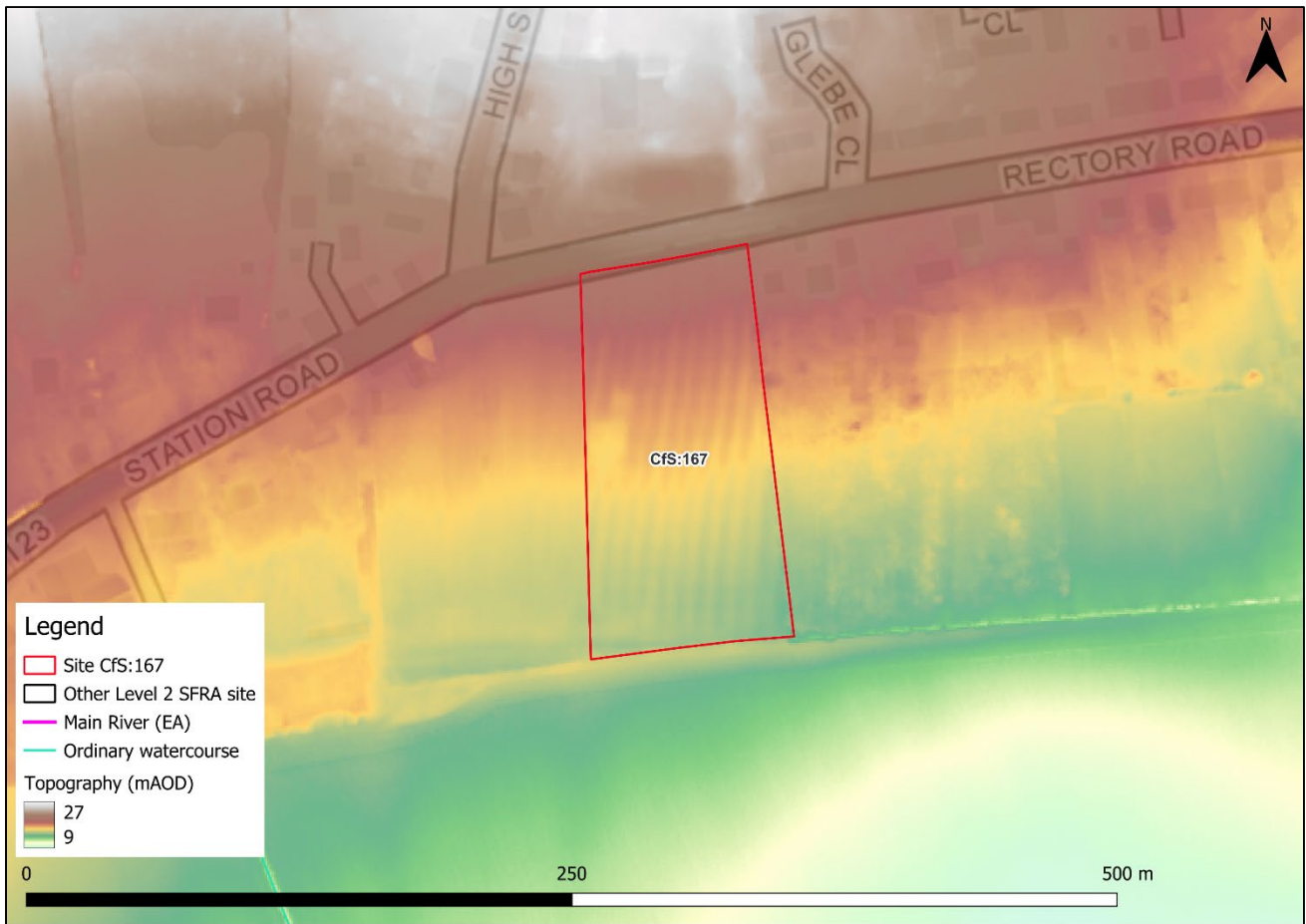


Figure 1-3: Topography

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).

The site is located wholly within Flood Zone 1 and therefore at low risk from rivers and the sea. The site is located within the model domain of the Lower Ouse 2015 (Downstream) model.

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)
100	0	0	0

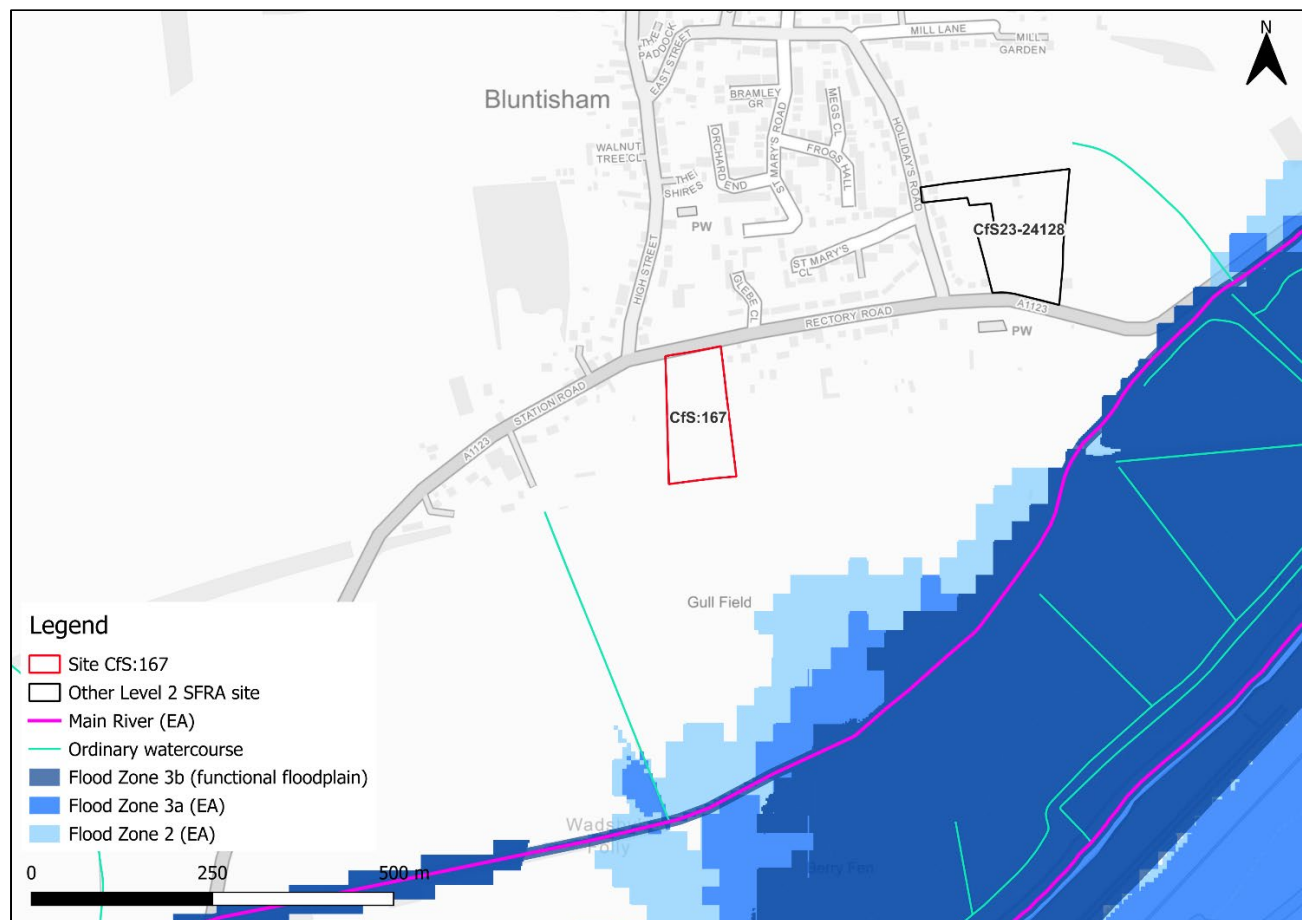


Figure 2-1: Existing risk

2.1.2 Fluvial undefended model outputs (Lower Ouse - Downstream, 2015)

The Lower Ouse - Downstream (2015) detailed model shows that the flood risk from the River Great Ouse is not modelled to impact the site.

2.2 Flood risk management

2.2.1 Flood defences

The site does not benefit from any formal engineered flood defences, according to the EA's spatial flood defences dataset, and the modelled information.

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. There is no potential within the site, but there is significant potential for tree planting to reduce flood risk around the site.

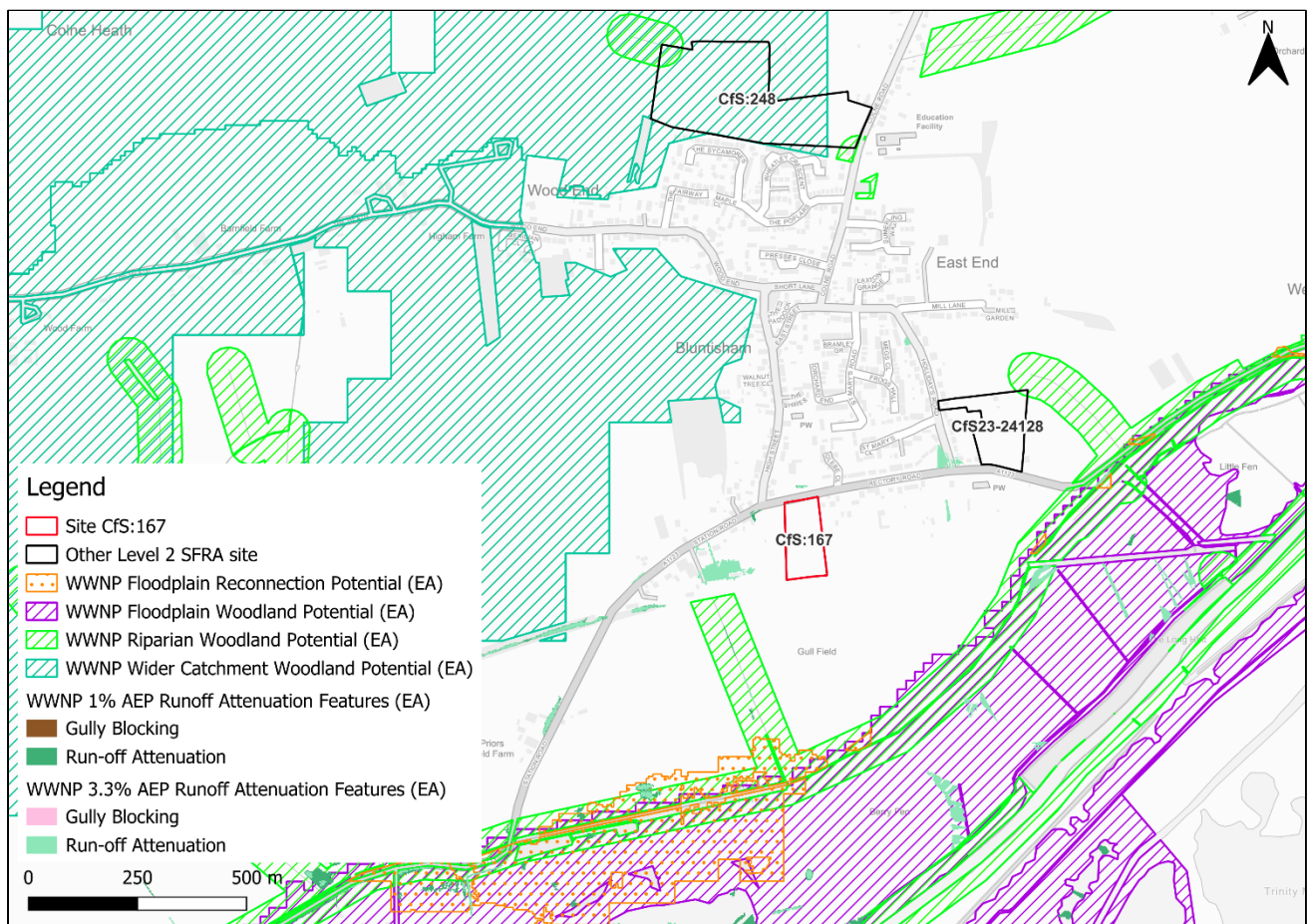


Figure 2-2: Natural Flood Management (NFM) potential mapping

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 the River Great Ouse have been modelled with and without flood defence infrastructure in place, where applicable.

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 Upper and Bedford Ouse management catchment

Return period (AEP event)	Central allowance 2080s (% increase)	Higher central allowance 2080s (% increase)
2% as a proxy for 3.3% which is not available	19	30
1%	19	30
0.1%	Model would not run for this scenario	

The Lower Ouse - Downstream (2015) detailed model shows that the climate change flood risk from the River Great Ouse is not modelled to impact the site.

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 flood incidents on or near 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. The 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 a FWA. The site is not located within a FAA.

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 Rectory Road to the north of the site, as shown in Figure 2-3.

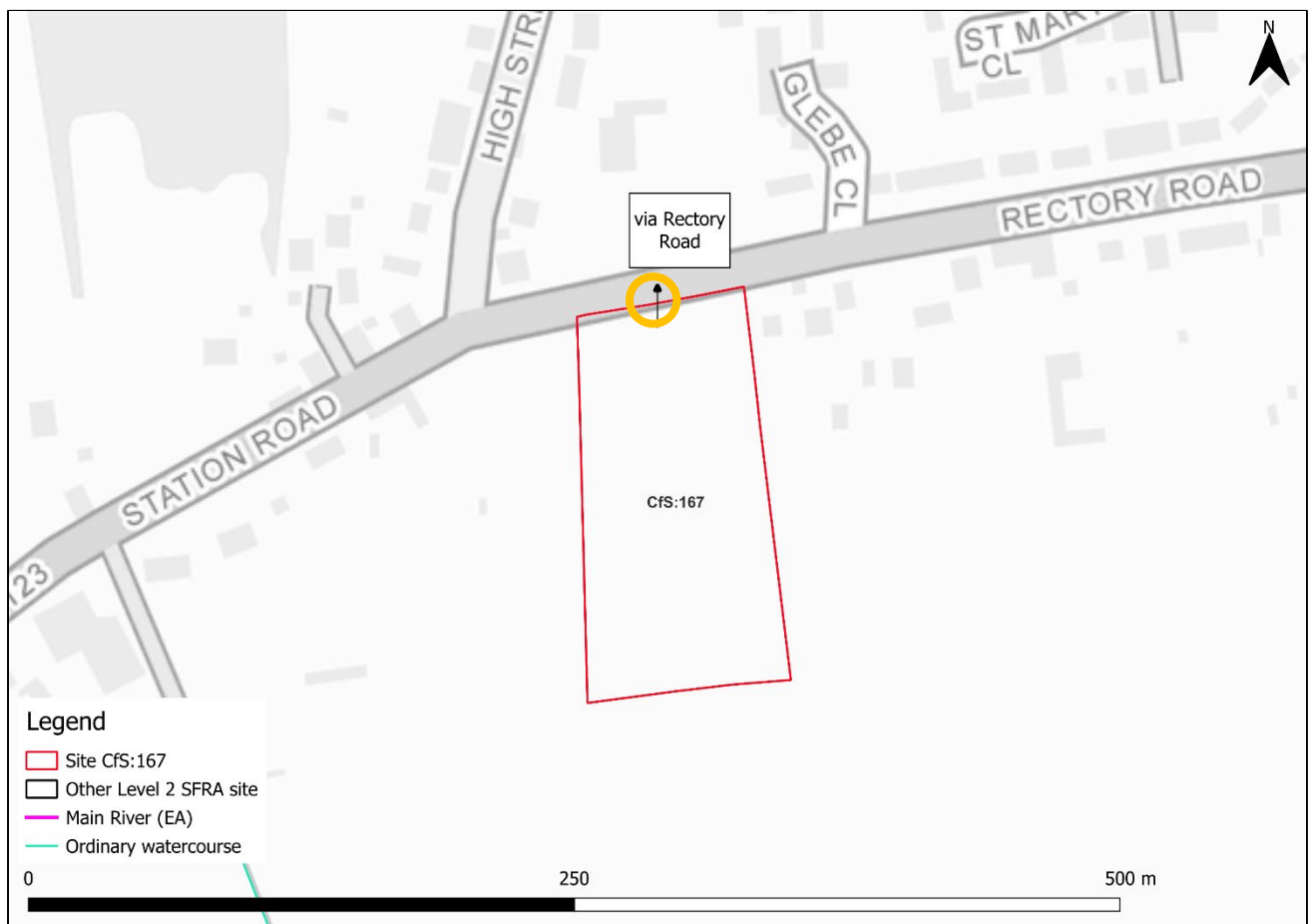


Figure 2-3: Potential access and escape routes

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.
 - Local detailed modelling of the River Great Ouse shows that the flood risk from the River Great Ouse is not modelled to impact the site now or when accounting for climate change.
- Defences:
 - There are no defences providing benefit to the site.
- Access and escape:
 - Safe access and escape routes must be available at times of flood and appear to be available from the north of the site, via Rectory Road.

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 10% of the site is at high surface water risk. A further 6% is at medium surface water risk and 4% at low surface water risk

Surface water flood risk is confined to the south 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)
80	4	6	10

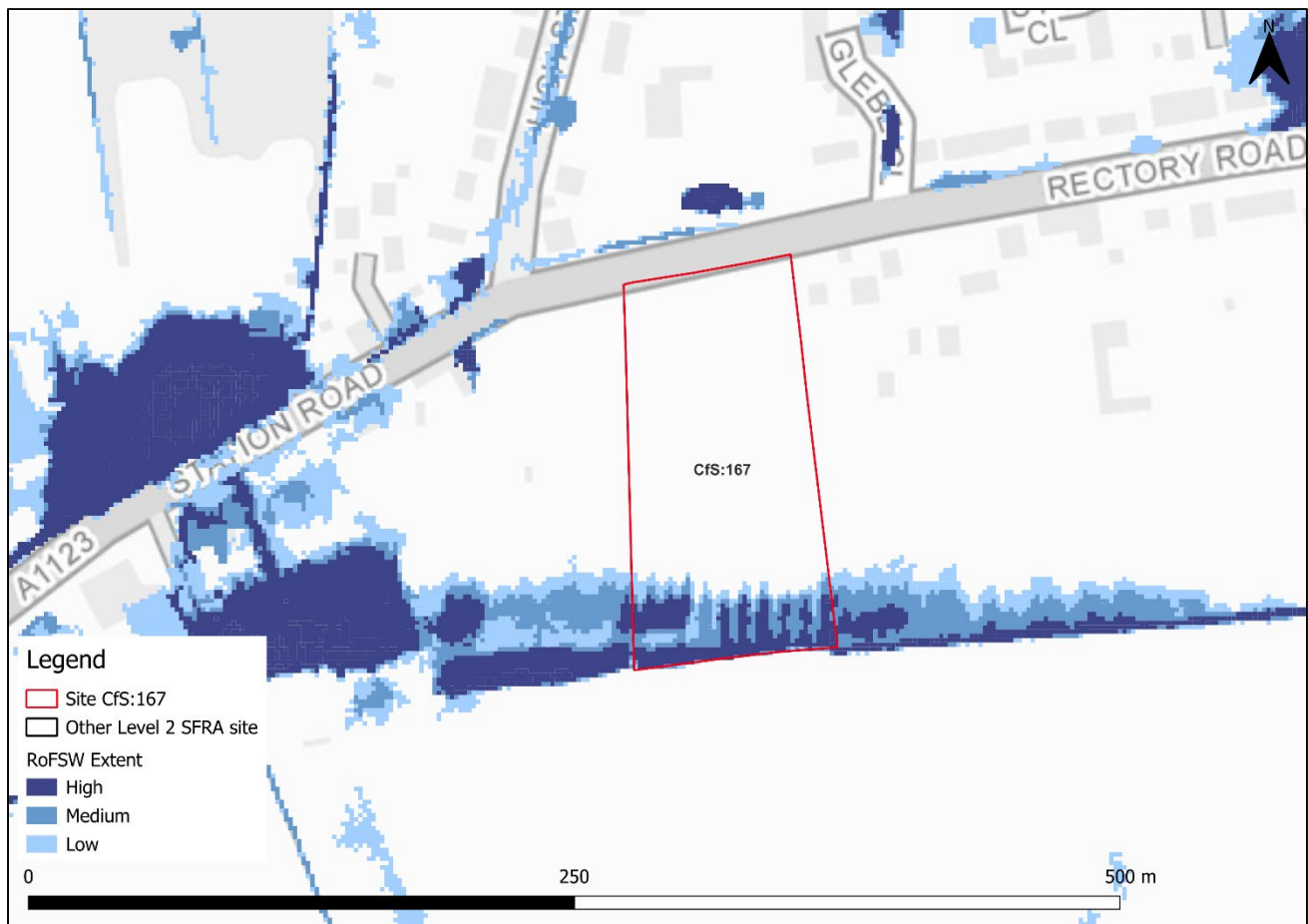


Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

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, flooding is predicted to predominantly remain below 0.30m in depth (Figure 3-2) and be a low hazard (Figure 3-3). However, some nominal areas may reach 0.60m in depth and be a significant hazard.

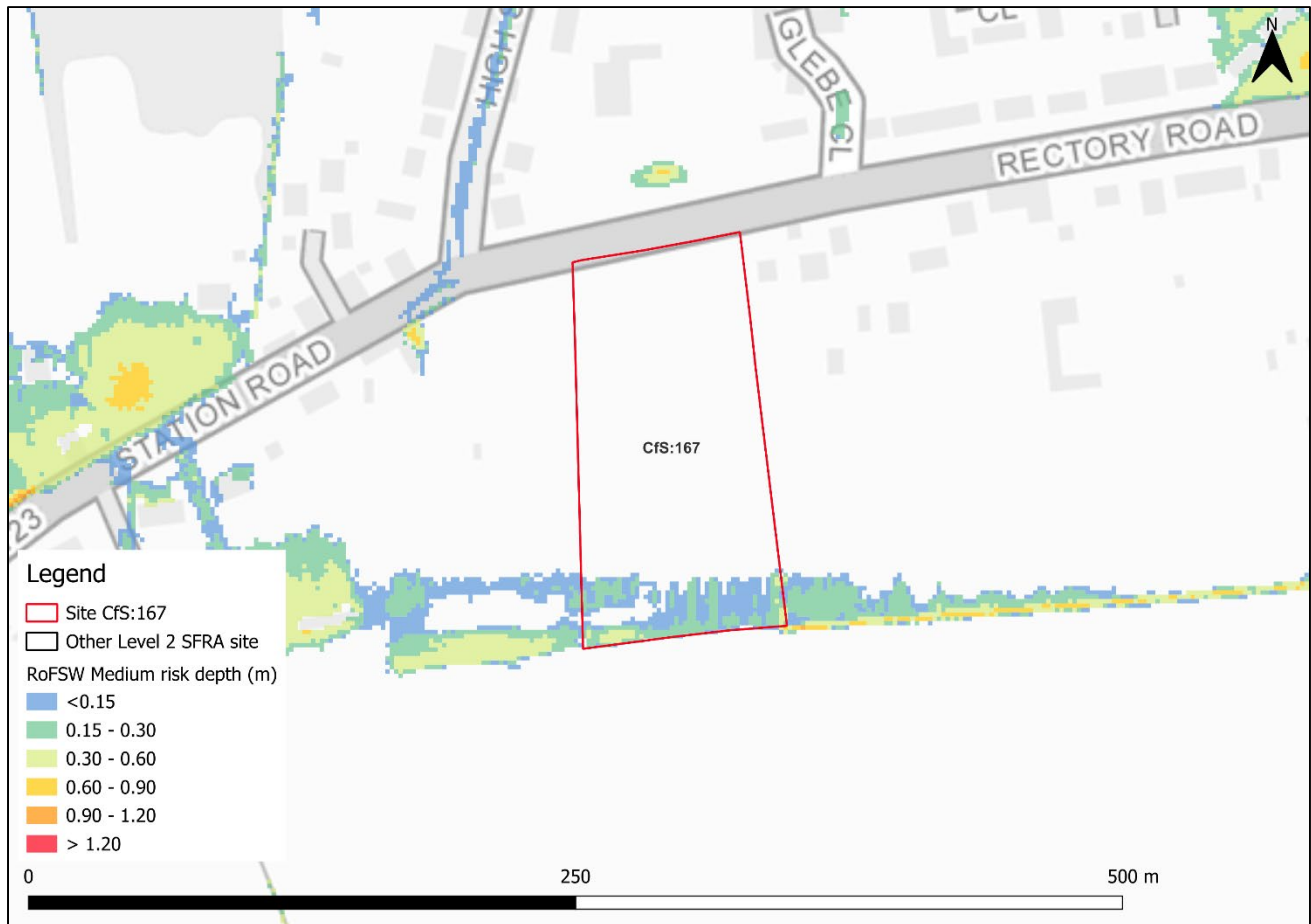


Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)

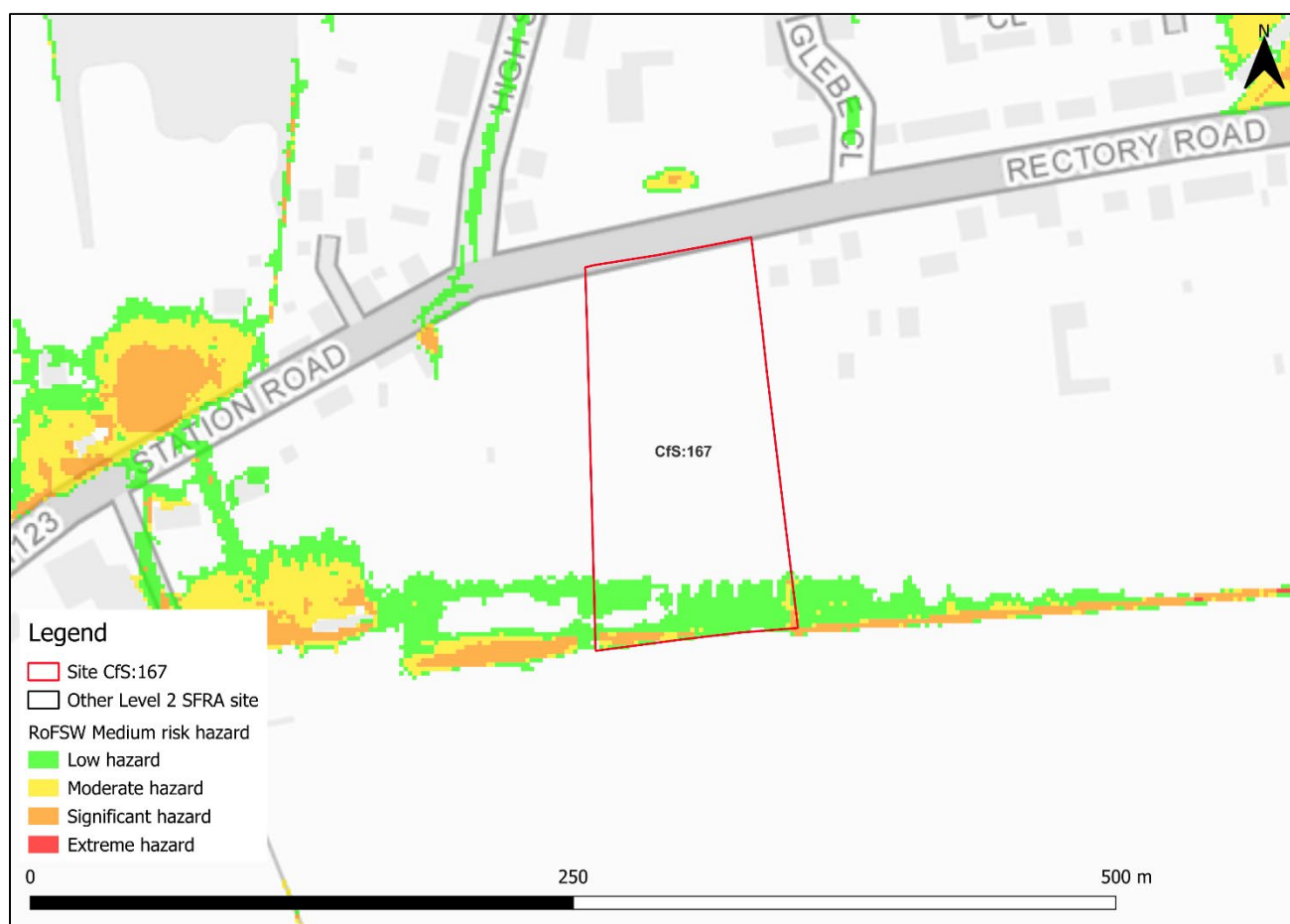


Figure 3-3: Medium risk event surface water flood hazard¹ (Third generation - Risk of Flooding from Surface Water map)

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.

Based on current information, a greater area in the south of the site is predicted to be at surface water risk (Figure 3-4). Larger areas are predicted to reach 0.60m in depth (Figure 3-5) and be a significant hazard (Figure 3-6).

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

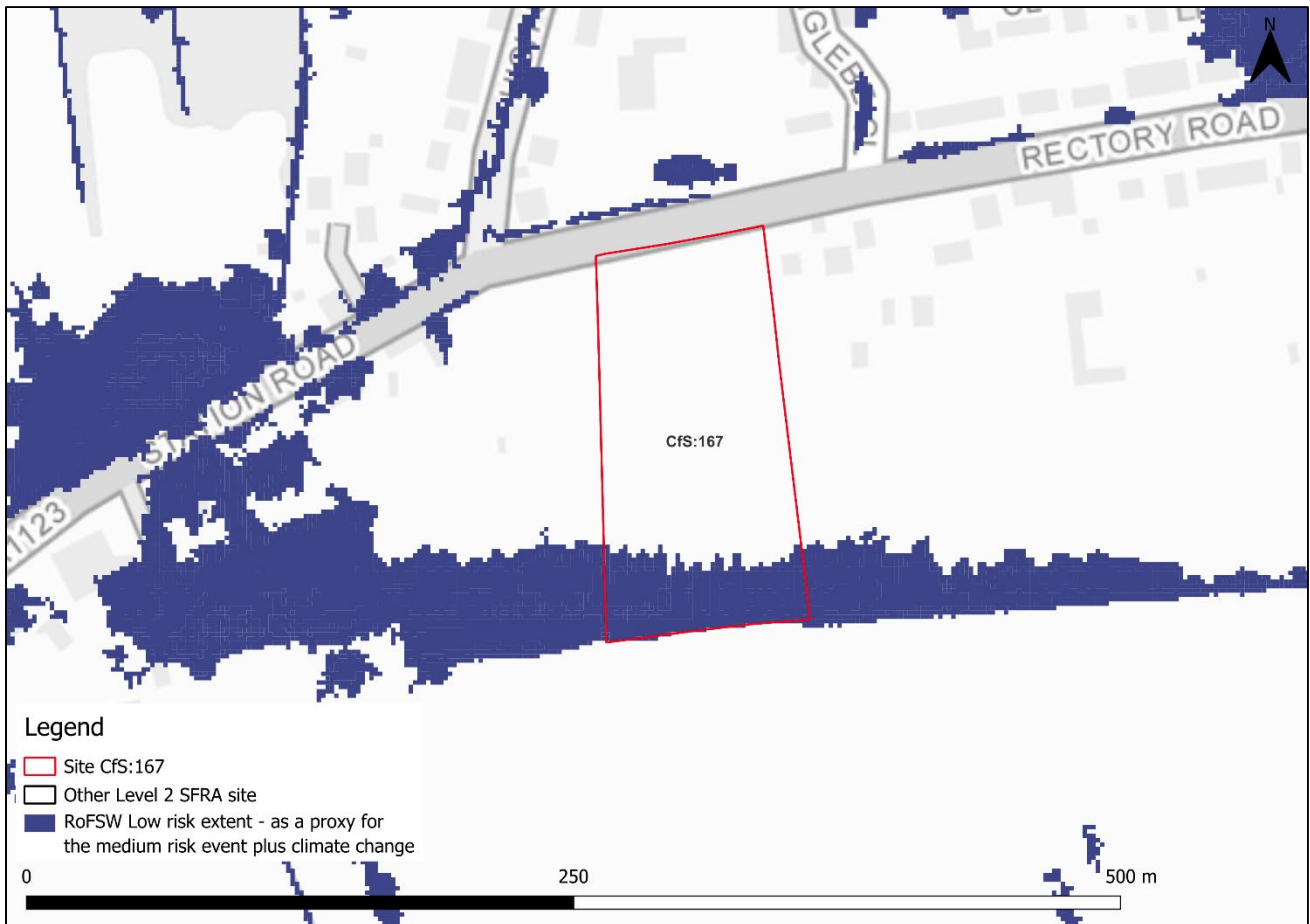


Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

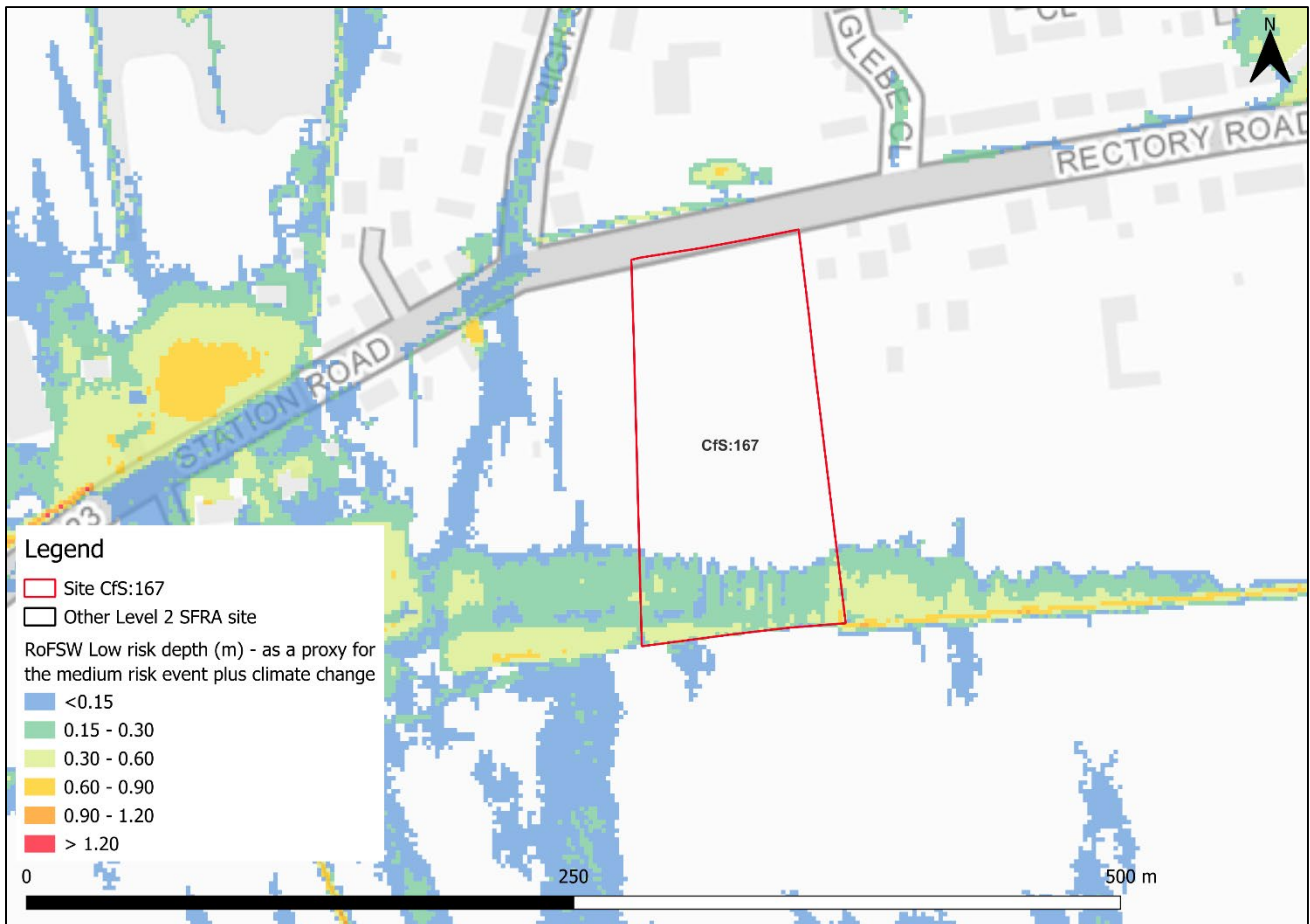


Figure 3-5: Low risk event surface water flood depths, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

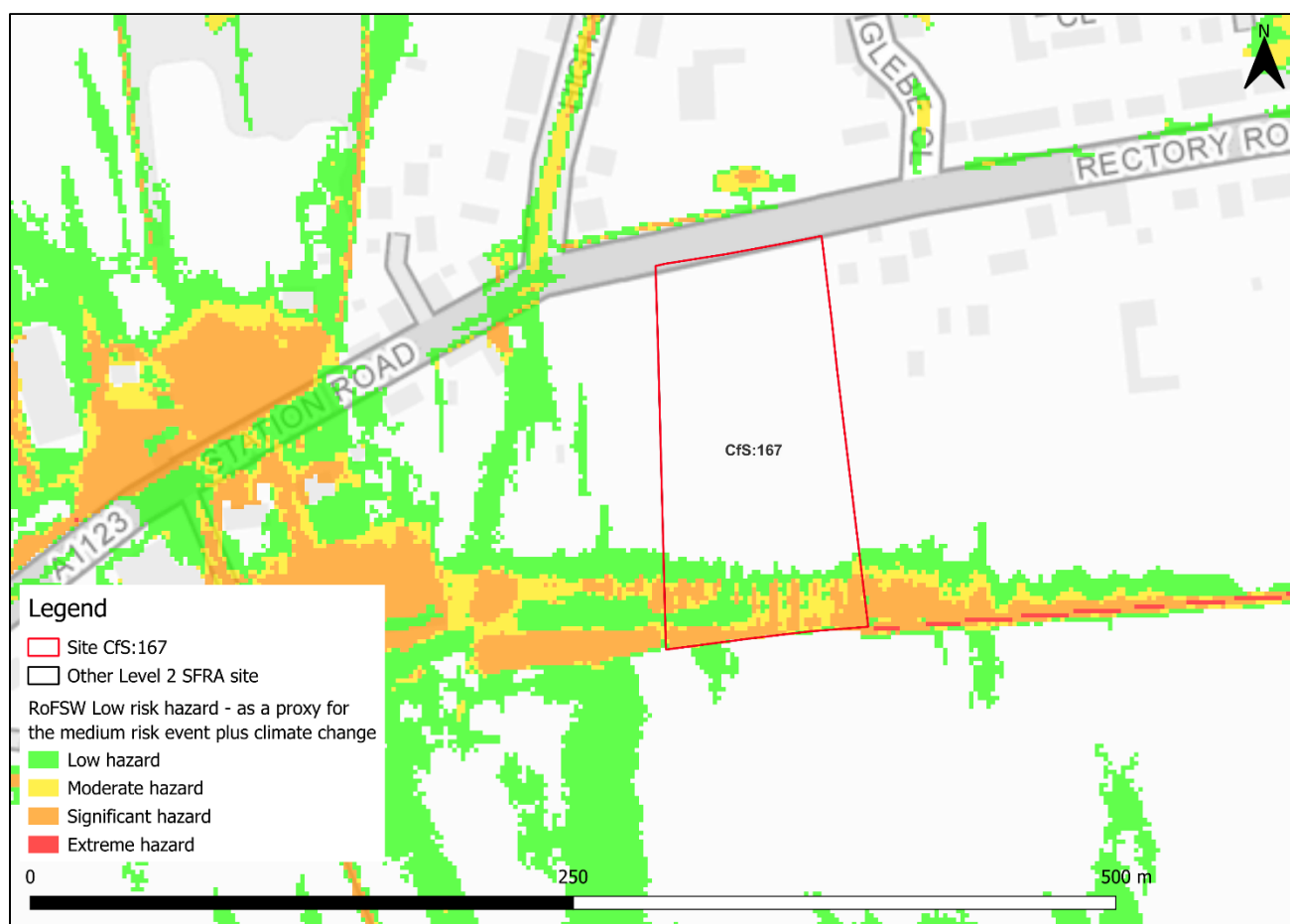


Figure 3-6: Low risk event surface water flood hazard, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

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

- Current risk to the site is predominantly very low, with 80% of the site being at very low surface water flood risk. Surface water risk in the high and medium risk events is confined to the south of the site, the topographic low spot within 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 largely similar to the medium risk event, with a greater extent of ponding within the topographic low spots.
- 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.
- The risk area in the south of the site should be left free of development and allowed to flood. Topographic low spots and flow paths should be incorporated into site design and layout.

- The drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield rates will apply, and the developer should follow the National SuDS guidance and any local guidance available from the LLFA.
- 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 Ouse (Roxton to Earith) catchment. This catchment is ranked as a high sensitivity catchment. Planning considerations for sites at high 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 Guide². 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 whole of the site is classified as no risk from groundwater emergence. Infiltration SuDS should therefore be suitable at this site.

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 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.

Based on available information, there does not appear to be any residual risk to this site.

6.1 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 not required to pass part b) of the exception test as it is not located within Flood Zone 3a, however it must still be proven that the development can be safe for its lifetime, which is 100 years for residential development.

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 develop this site for more vulnerable purposes given its location within Flood Zone 1.
- Surface water risk is isolated to the south of the site and should be left free of development and left as open greenspace.
- Opportunities for NFM features to reduce flood risk to the site and surrounding areas should be explored at the site-specific FRA stage.
- Safe access and escape routes must be available at times of flood and appear to be available from the north of the site, via Rectory Road.

7.3 Site-specific FRA requirements and further work

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

- Further consideration of surface water flood risk, including a 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.

8 Licencing

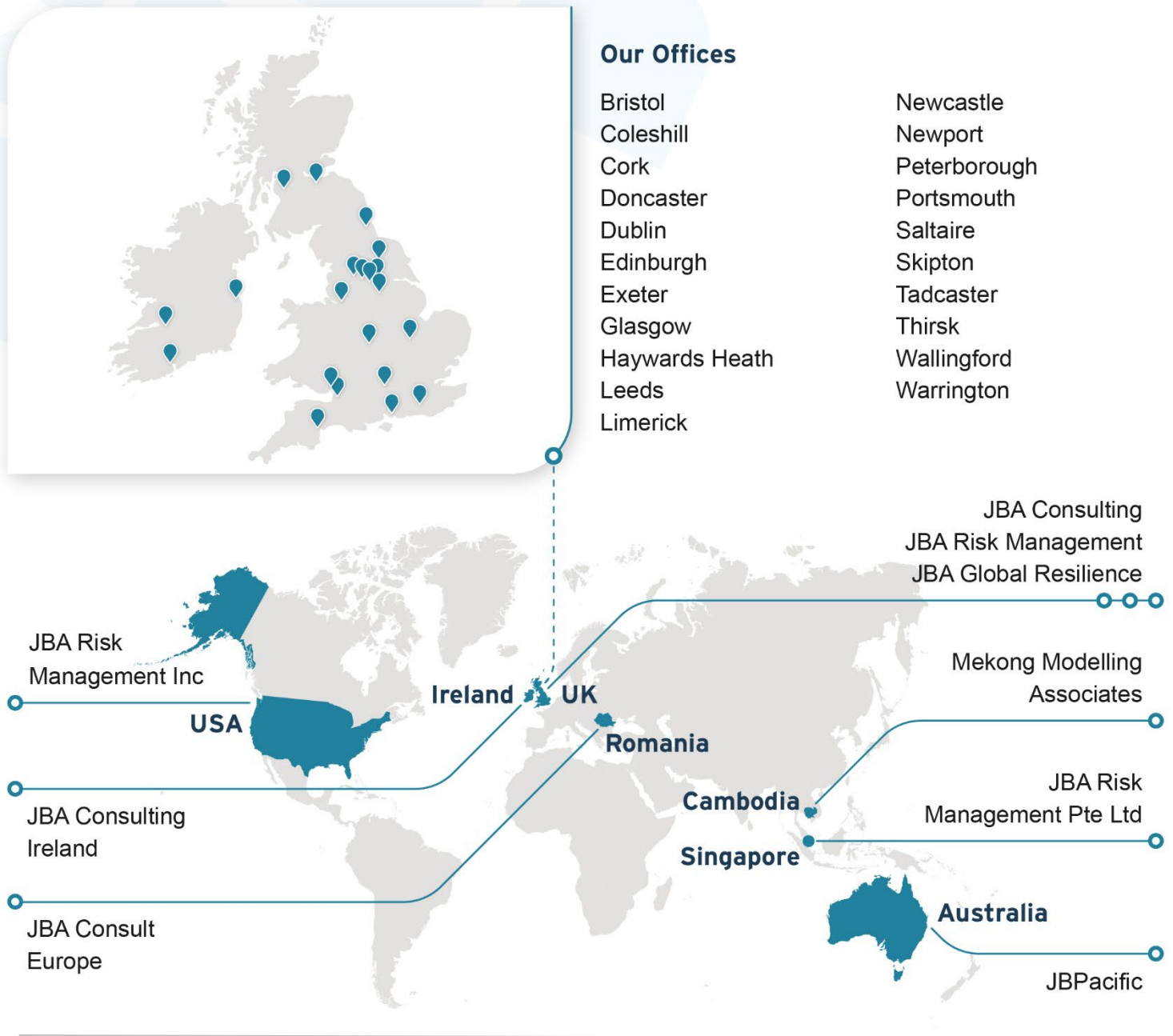
To cover all figures within this report:

- Contains Environment Agency information © Environment Agency and/or database right [2025]
- Contains public sector information licensed under the Open Government Licence v3.0. © Crown copyright and database rights [2025]
- HDC Ordnance Survey licence number: 100022322 [2025]
- © 2021 Esri, Maxar, Earthstar Geographics, USDA FSA, USGS, Aerogrid, IGN, IGP, and the GIS User Community

Our Offices

Bristol
Coleshill
Cork
Doncaster
Dublin
Edinburgh
Exeter
Glasgow
Haywards Heath
Leeds
Limerick

Newcastle
Newport
Peterborough
Portsmouth
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington



Registered Office

1 Broughton Park
Old Lane North
Broughton
SKIPTON
North Yorkshire
BD23 3FD
United Kingdom

+44(0) 1756 799919
info@jbaconsulting.com
www.jbaconsulting.com

Follow us on  

Jeremy Benn
Associates Limited
Registered in
England
3246693

JBA Group Ltd is
certified to
ISO 9001:2015
ISO 14001:2015
ISO 27001:2022
ISO 45001:2018

