www.jbaconsulting.com

# Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

## Site CfS:373

## Final Report

**Prepared for**

Huntingdonshire District Council

**Date**

March 2026

# Document Status

| | |
|---|---|
| Issue date | 18 March |
| Issued to | Frances Schulz |
| BIM reference | JFI-JBA-XX-XX-RP-EN-0090 |
| Revision | P02 |
| Prepared by | Kira Khangura<br>Technical Assistant |
| Reviewed by | Mike Williamson BSc MSc CGeog FRGS EADA<br>Principal Analyst |
| Authorised by | Paul Eccleston BA CertWEM CEnv MCIWEM C.WEM<br>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 26 February 2026. The Client's representative for the contract was Frances Schulz of Huntingdonshire District Council. Kira Khangura 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 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.

## Copyright

# Contents

## List of Figures



## List of Tables

# 1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS:373. 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:373

- Location: Brook Farmyard (Central site), Great Staughton
- Existing site use: Agricultural with existing farmhouse onsite
- Existing site use vulnerability: More Vulnerable
- Proposed site use: Mixed Use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 0.8
- Watercourse: River Kym (Main River)
- Environment Agency (EA) model: River Kym
- 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 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 site is located wholly within Flood Zone 1 and therefore at low risk from rivers and the sea.

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 |

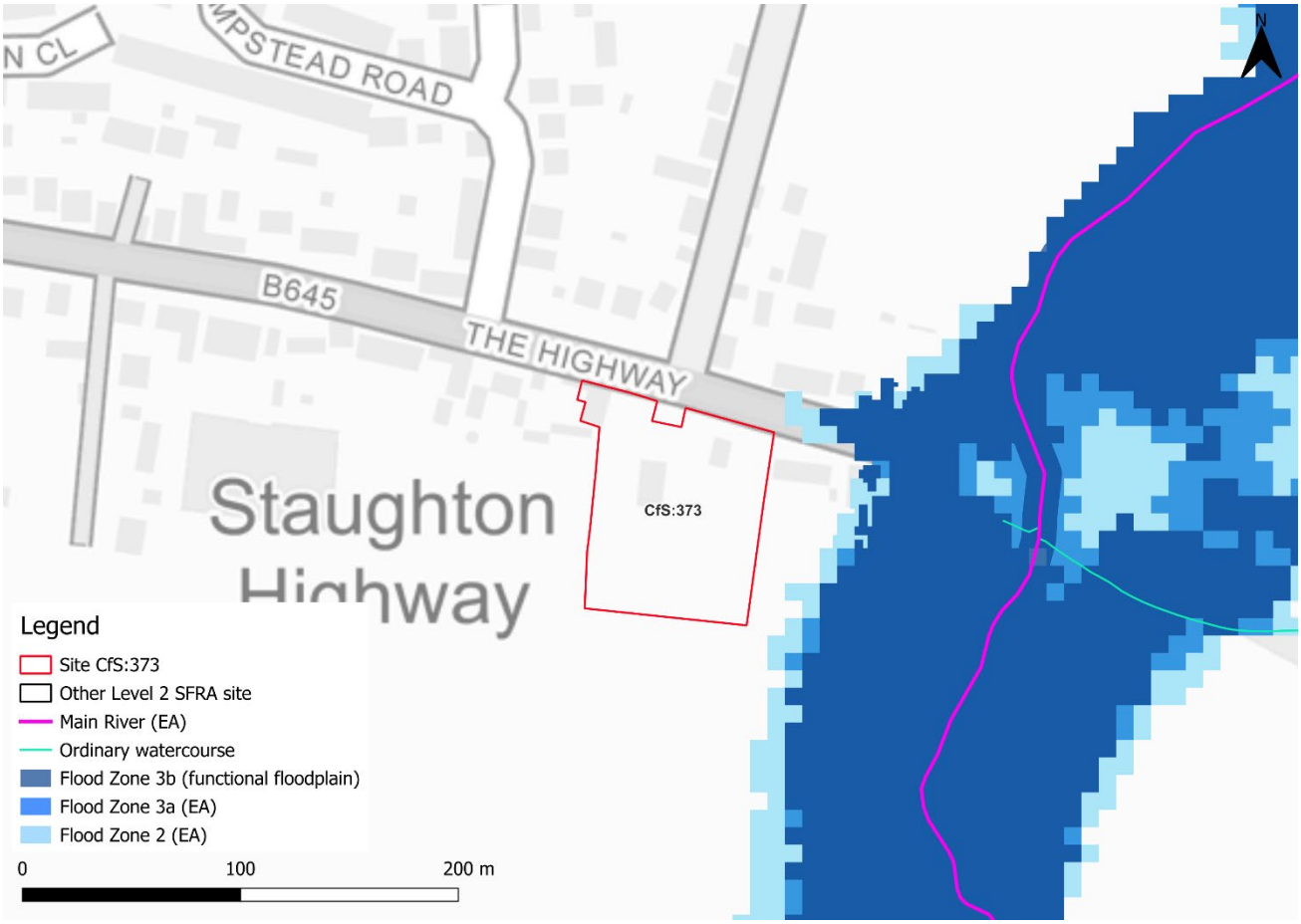



Figure 2-1: Existing risk

## 2.2 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. Along the River Kym, there is potential for Riparian Woodland and Floodplain Woodland tree planting to intercept, slow, store and filter water. There is also the potential for Floodplain Reconnection.

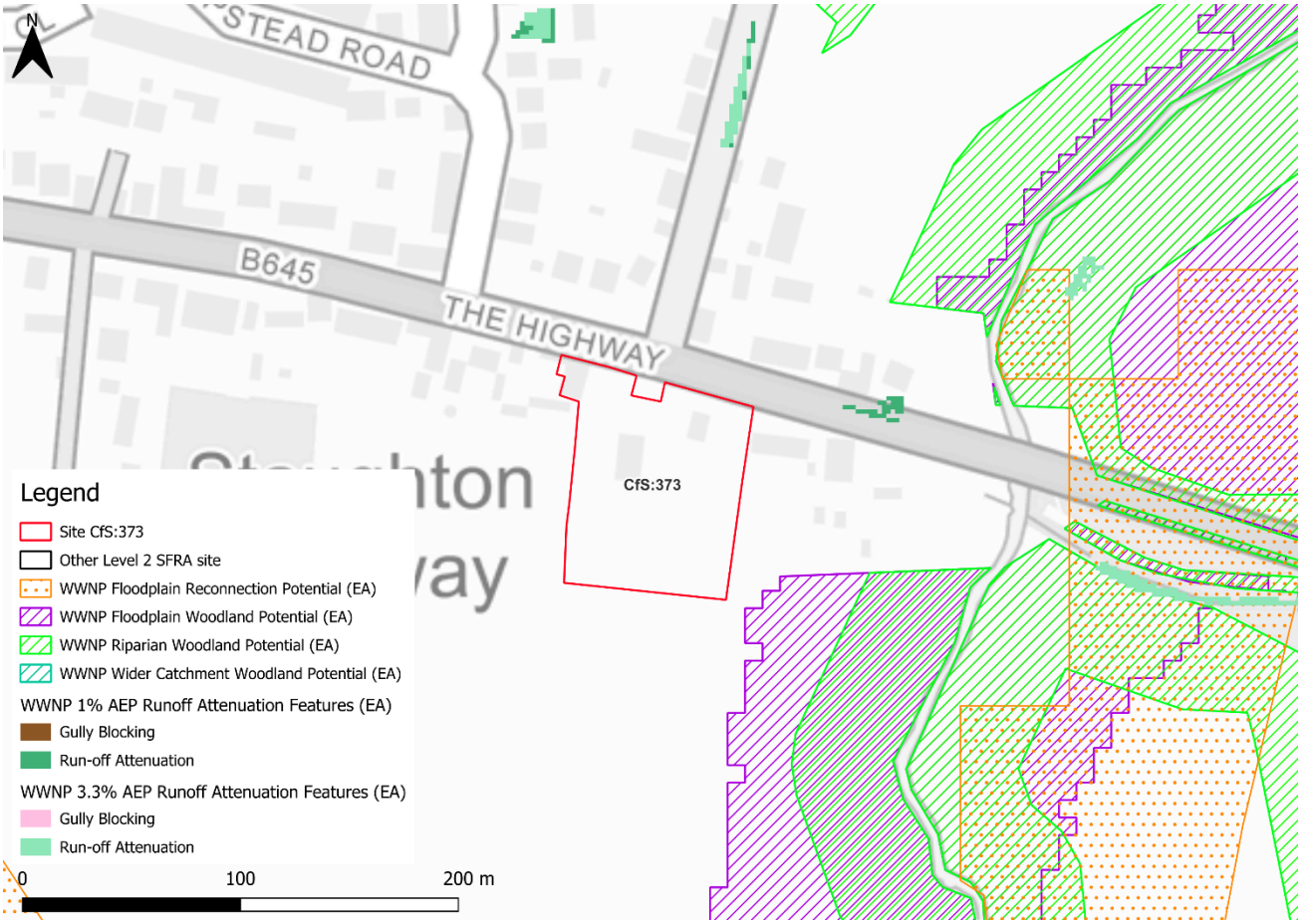



Figure 2-2: Natural Flood Management (NFM) potential mapping

## 2.3 Impacts from climate change

### 2.3.1 Fluvial

The EA's modelling and the Flood Map for Planning show the site is not at risk from fluvial climate change.

### 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 and mapped in Figure 2-3 which shows an event of historical flooding in close proximity to the site. The event has been recorded in March 1947 with an unknown source.

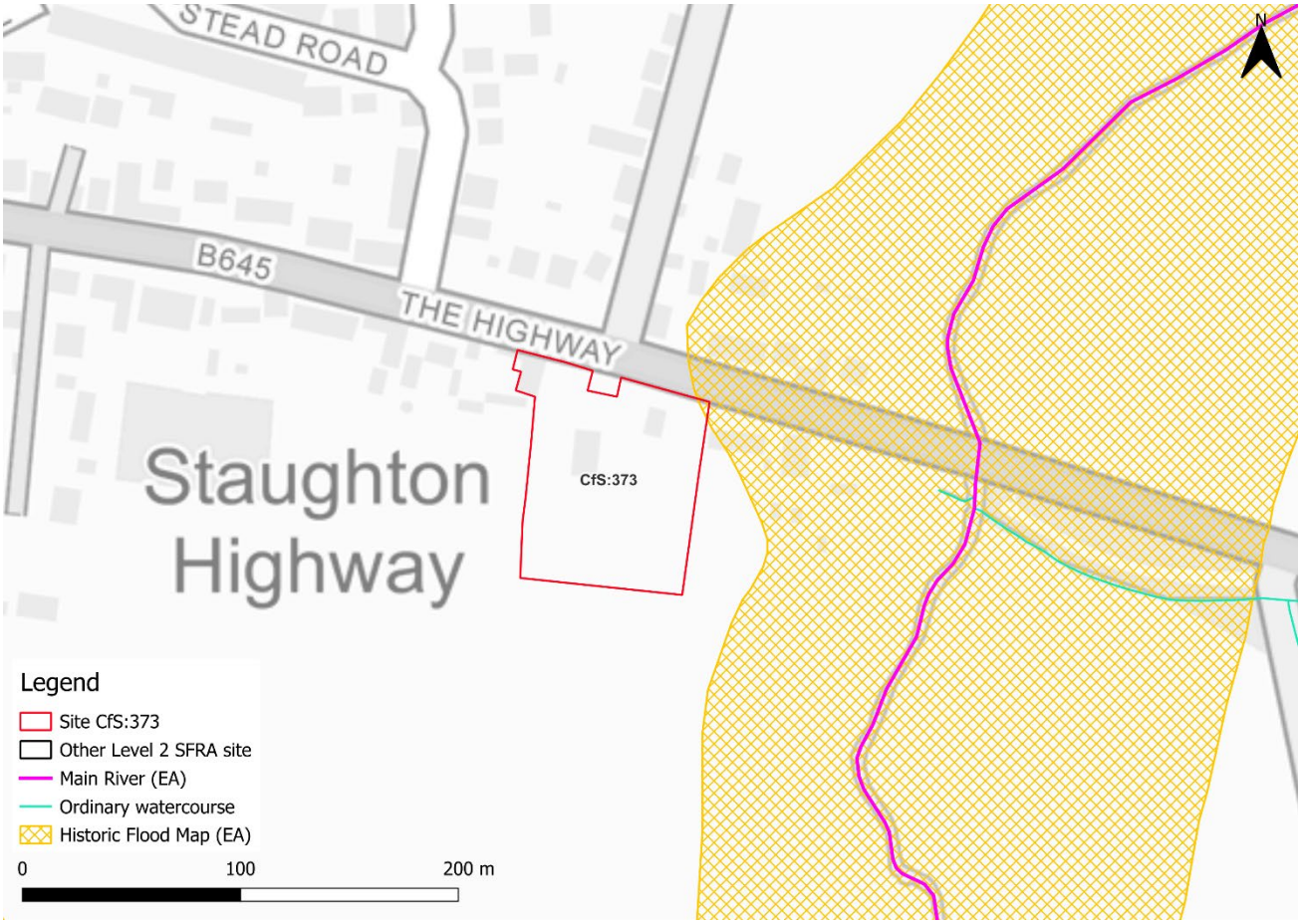



Figure 2-3: Recorded historic flood events onsite and around the site

## 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 a FWA. This site is not located in 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 the B645 on the northern boundary, as shown by the orange circle in Figure 2-4. However, surface water flooding is modelled to this road. This risk should be investigated at the FRA stage where it must be proven that safe access to and escape from the site can be achieved at times of flood.


Figure 2-4: 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.
  - The site is wholly within Flood Zone 1 and not shown to be at risk from climate change.
- Defences:
  - There are no engineered flood defences within the vicinity of the site that are likely to impact fluvial flood risk.
- Mitigation:
  - Site-specific FRA required to confirm nearby fluvial risk.
- Access and escape:
  - Safe access and escape routes must be available at all times and appear to be available from the north of the site via the B645. However, risk to the surrounding roads should be investigated at the FRA stage.

# 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 1% of the site is at high surface water risk. A further 1% is at medium risk and a further 2% is at low surface water risk, as shown in Table 3-1. Surface water risk is present along the northern boundary of the site along the B645.

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) |
|---|---|---|---|
| 96 | 2 | 1 | 1 |

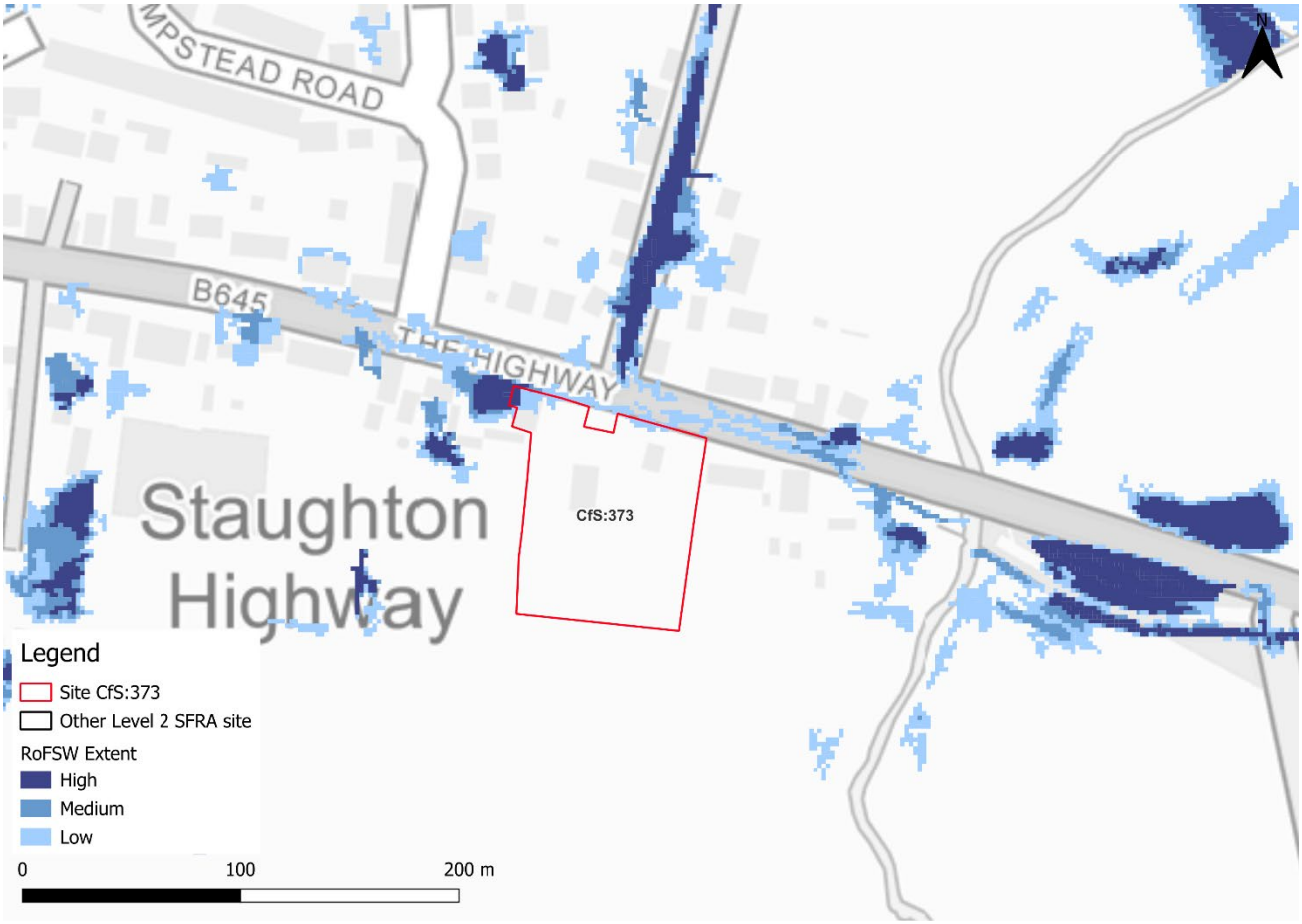



Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

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

The EA's national scale third generation RoFSW map shows little to no surface water flood risk to the site.

There are differences in the extent of surface water flooding between the NaFRA2 RoFSW map and the third-generation depths and hazard mapping, with the NaFRA2 extents showing surface water flood risk in the north of the site. This reinforces the requirement for detailed assessment of surface water at the FRA stage to establish surface water flood risk conditions.

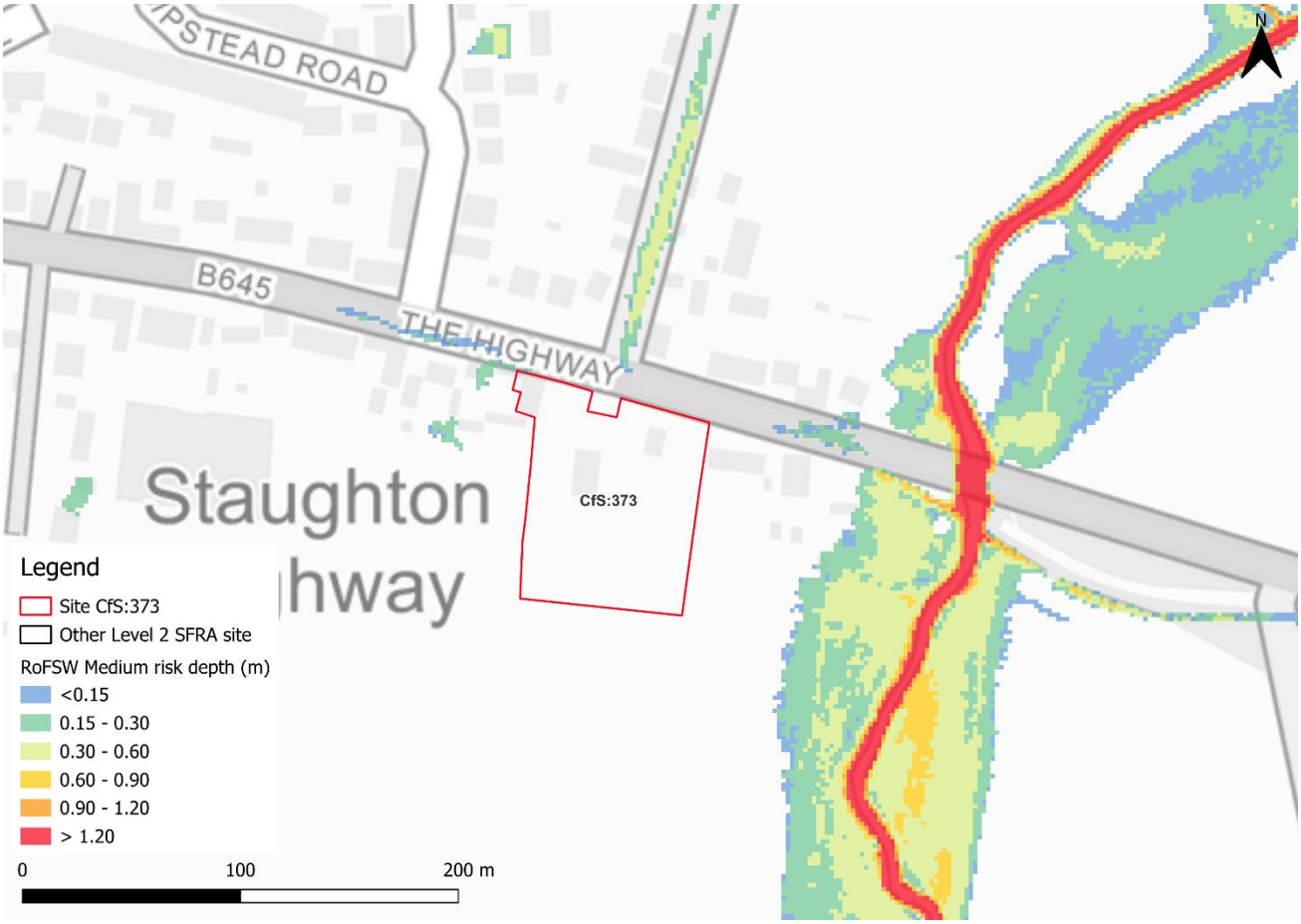



Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)

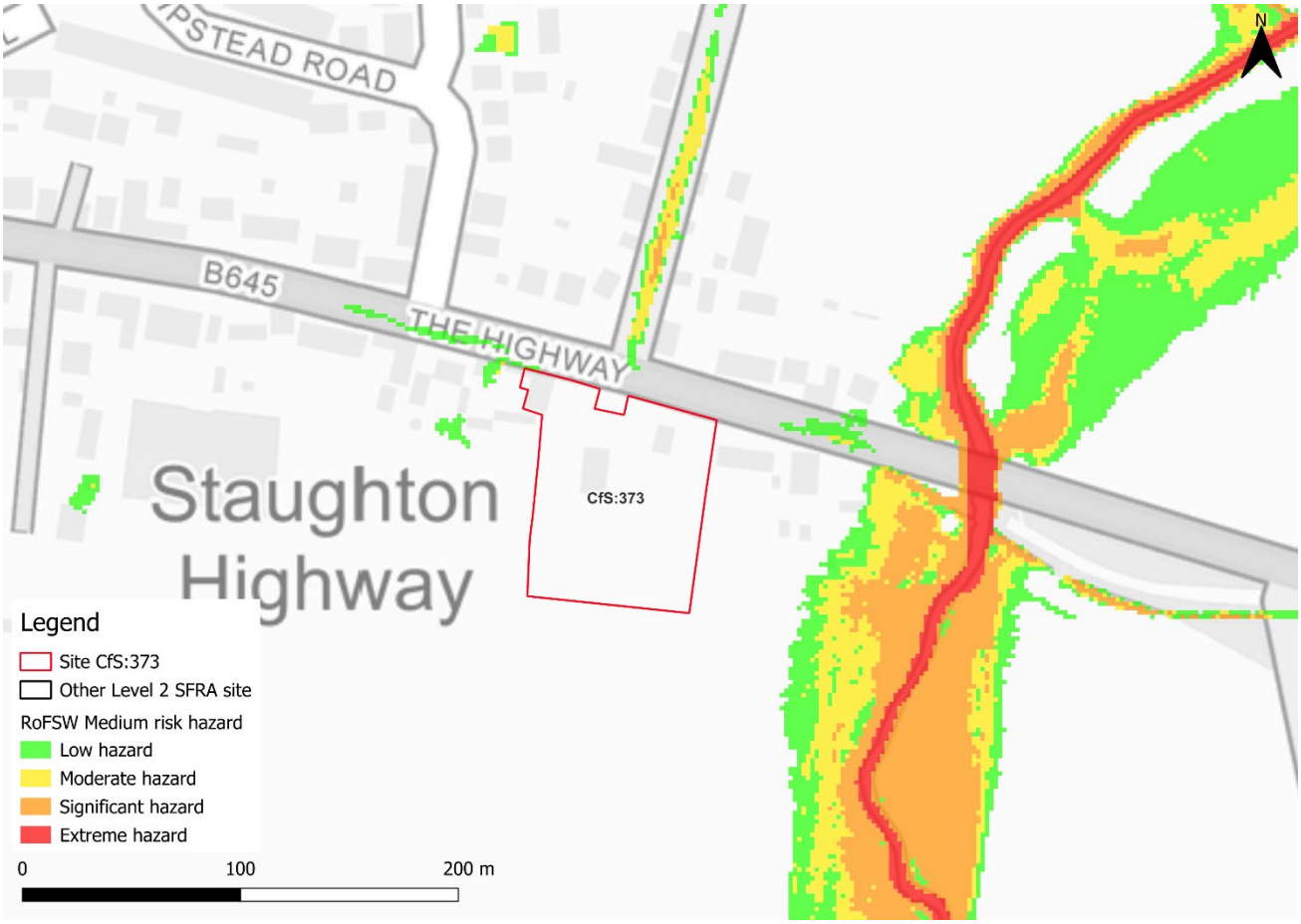



Figure 3-3: Medium risk event surface water flood hazard[1] (Third generation - Risk of Flooding from Surface Water map)

## 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 indicate maximum depths of 0.15 to 0.3m and moderate hazard.

The NaFRA2 extents appear to be similar to the third generation mapping.

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

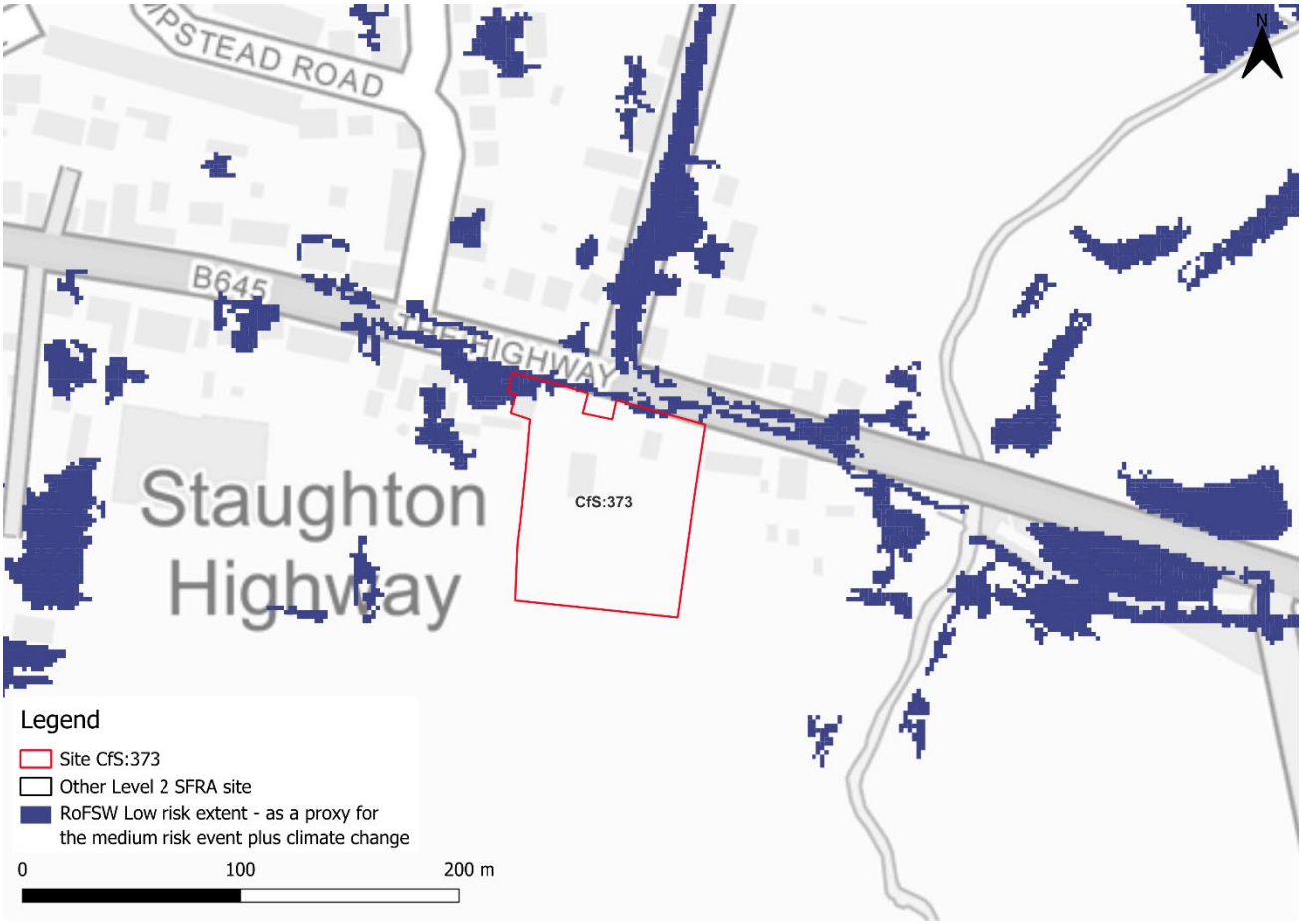



Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

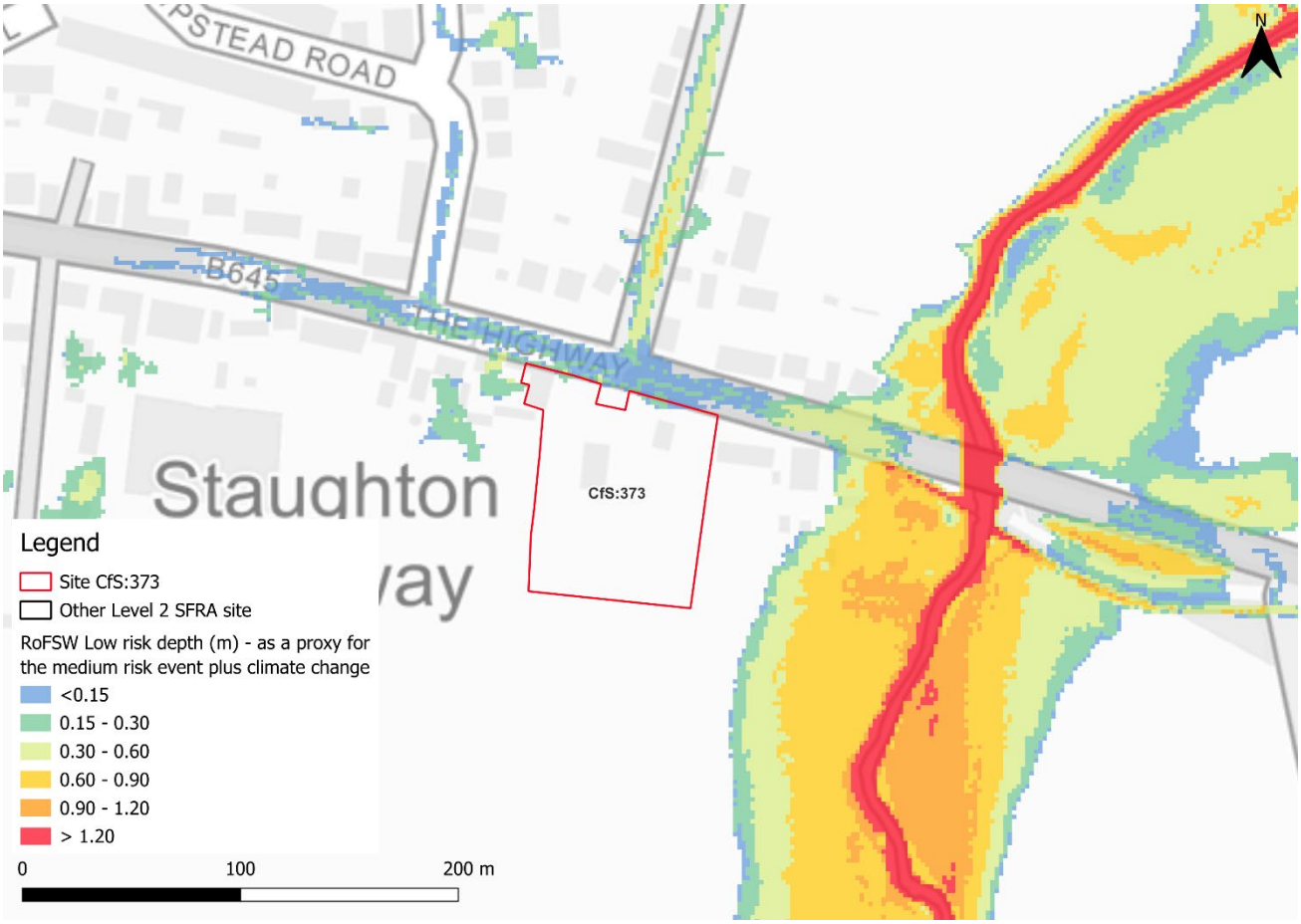



Figure 3-5: Low risk event surface water flood depths, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

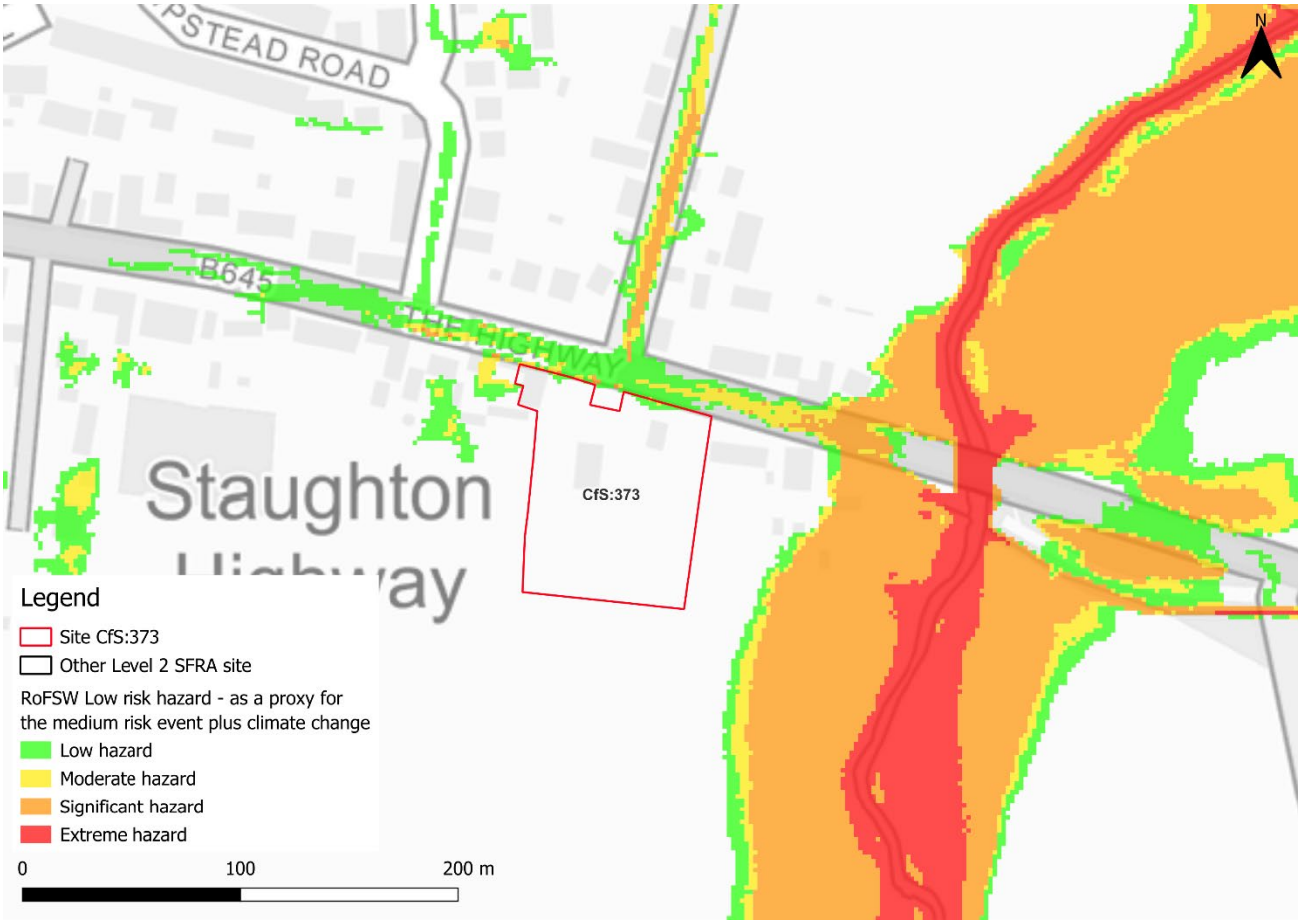



Figure 3-6: Low risk event surface water flood hazard, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

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

- Current risk to the site is predominantly very low, with 96% of the site being at very low surface water flood risk. Surface water risk in all events is present in the north 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 larger 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.
- Topographic low spots and flow paths should be incorporated into site design and layout.
- Surface water risk to the B645 should be investigated at the FRA stage and when considering access and escape routes.

- 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 Kym catchment. This catchment is ranked as a low sensitivity catchment. Planning considerations for sites at low 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.

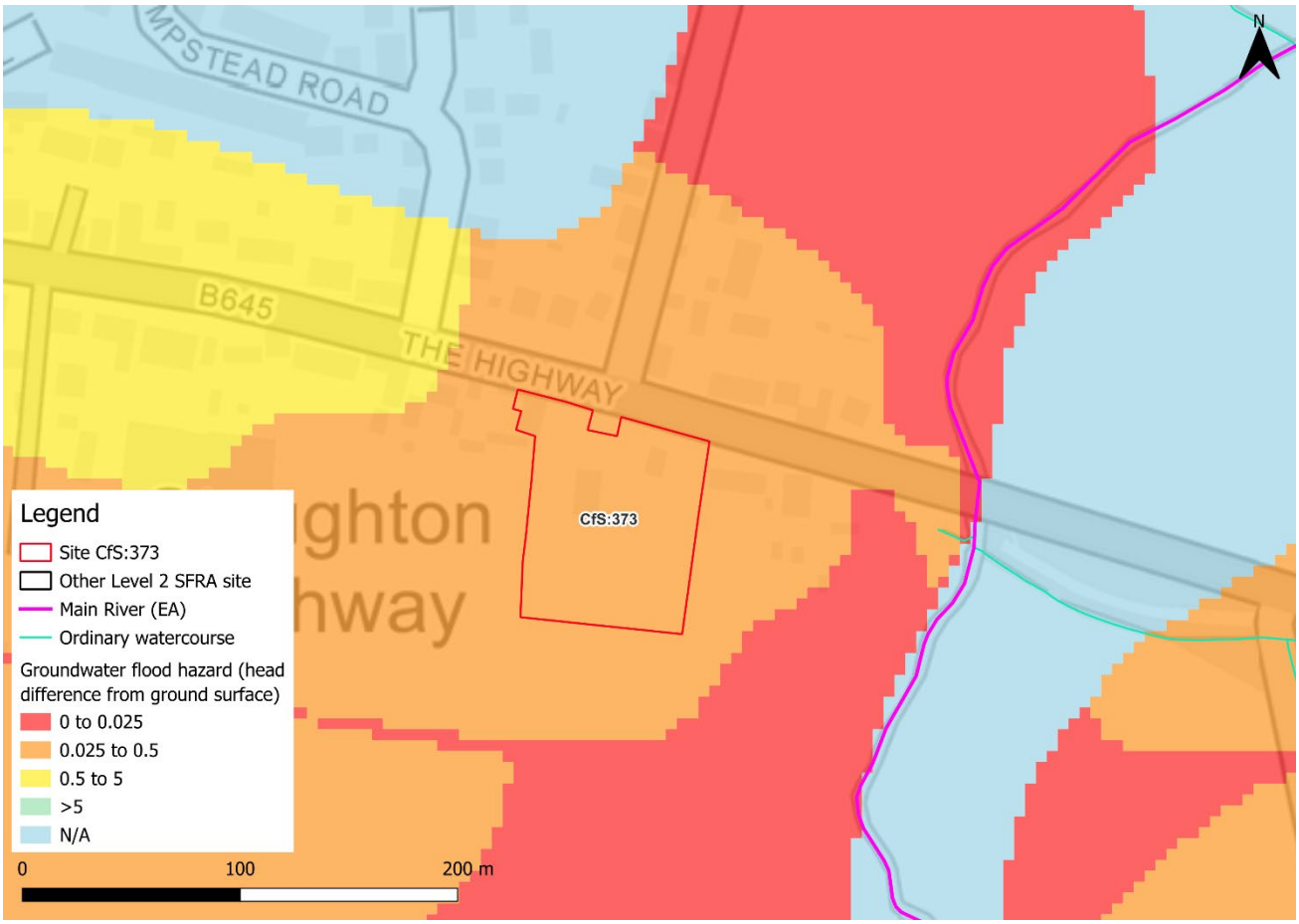



Figure 5-1: JBA 5m Groundwater Emergence Map

There is a risk of groundwater flooding to surface and subsurface assets onsite and around the site. There is the possibility of groundwater emerging at the surface locally. Infiltration SuDS are therefore unlikely to be appropriate in this area. The site-specific FRA should further investigate groundwater levels through percolation testing in both wet and dry weather conditions across the site. 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.<br>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.<br>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<br>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.<br>Flooding from groundwater is not likely. |
| N/A | No risk.<br>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. | |

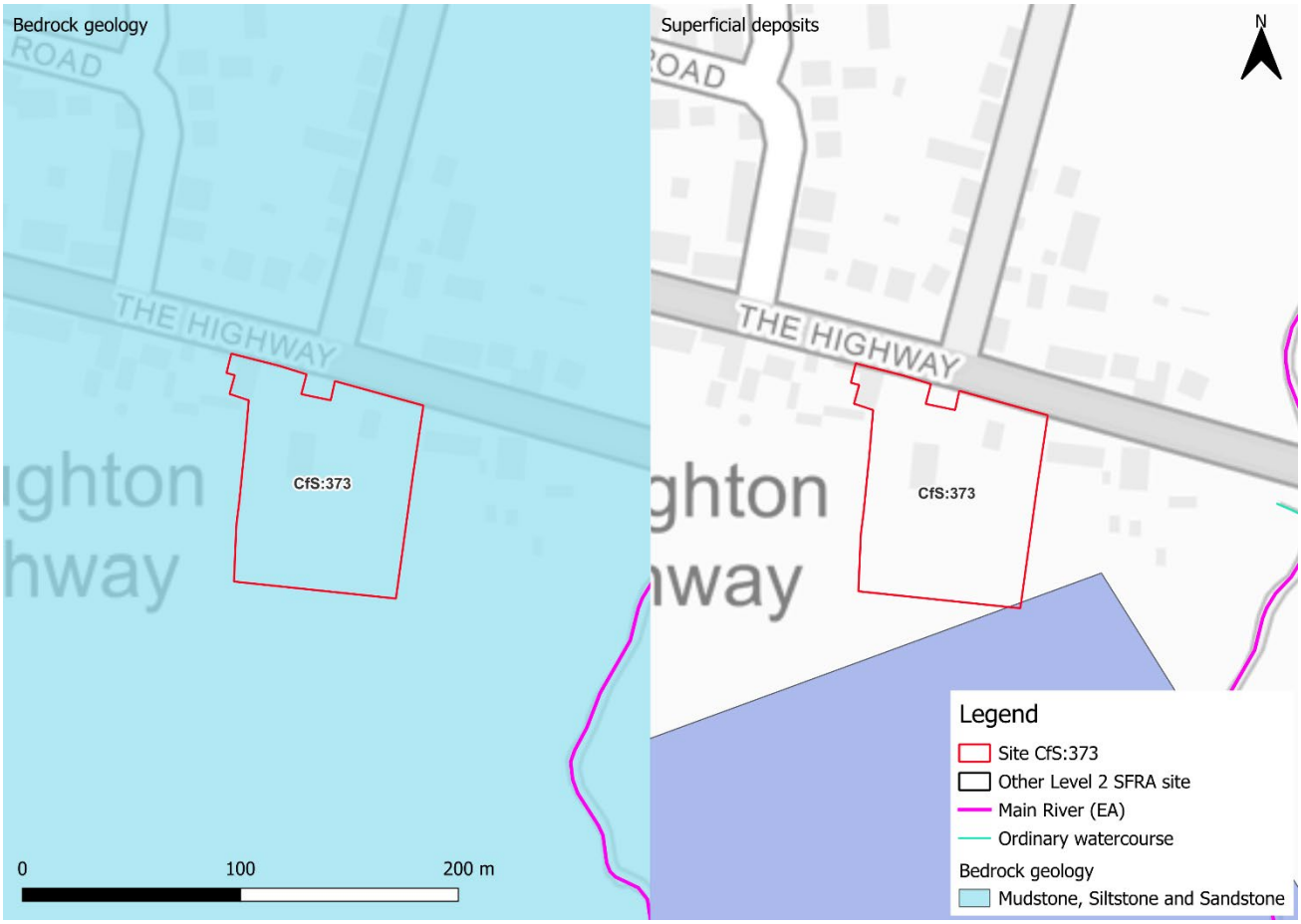



Figure 5-2: Soils and geology

# 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 blockage

A blockage of the bridge over the River Kym to the east of the site may cause flooding to the site, depending on the severity of the blockage and the magnitude of the flood event.


Figure 6-1: Potential blockage locations

## 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 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:

- 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 nominal surface water risk.
- Risk from the main river should be investigated at the FRA stage. Modelling may be required.
- There is potential residual risk to the site from a blockage of the bridge over the River Kym
- Groundwater conditions must be investigated further through the site-specific FRA. The potential use of infiltration SuDS should be investigated.
- 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 should be considered further to ensure safe evacuation of site users at all times.

## 7.3 Site-specific FRA requirements and further work

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

- Investigation into groundwater conditions.
- Investigation into risk from the main river including for potential residual risk.
- 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.
- Safe access routes should be confirmed.
- 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

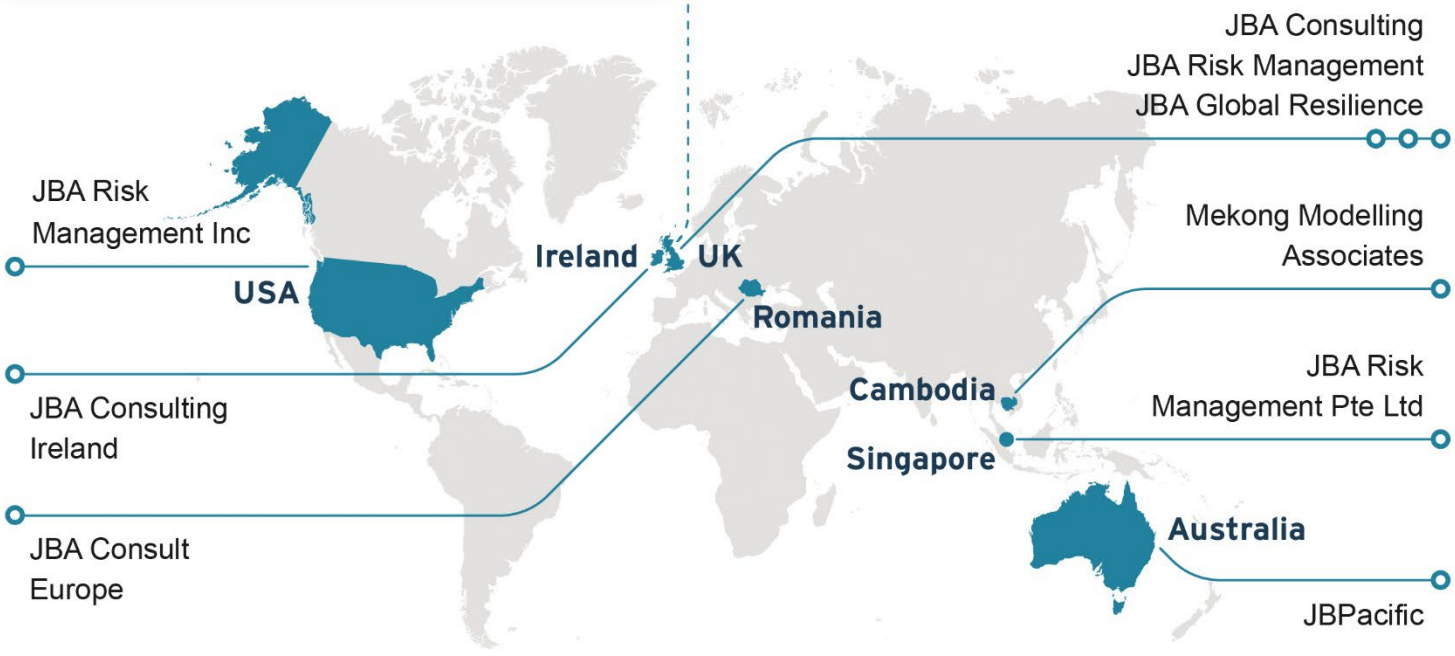
To cover all figures within this report:

- 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

www.jbaconsulting.com

## 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