



Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

Site CfS:240

Final 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-0060
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:240	1
2	Flood risk from rivers and sea	5
2.1	Existing risk	5
2.2	Flood risk management	12
2.3	Impacts from climate change	13
2.4	Historic flood incidents	21
2.5	Emergency planning	22
2.6	Observations, mitigation options, site suitability, sequential approach to development management - fluvial and tidal	24
3	Flood risk from surface water	26
3.1	Existing risk	26
3.2	Impacts from climate change	29
3.3	Observations, mitigation options, site suitability, sequential approach to development management - surface water	32
4	Cumulative impacts assessment and high risk catchments	34
4.1	Level 1 cumulative impacts assessment	34
5	Groundwater, geology, soils, SuDS suitability	35
6	Residual risk	38
6.1	Potential blockage	38
6.2	Flood risk from reservoirs	38
7	Overall site assessment	40
7.1	Can part b) of the exception test be passed?	40
7.2	Recommendations summary	40
7.3	Site-specific FRA requirements and further work	41
8	Licencing	42

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	6
Figure 2-2: Flood depths for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)	7
Figure 2-3: Flood velocities for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)	8
Figure 2-4: Flood hazard for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)	9
Figure 2-5: Flood depths for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)	10
Figure 2-6: Flood velocities for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)	11
Figure 2-7: Flood hazard for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)	12
Figure 2-8: Natural Flood Management (NFM) potential mapping	13
Figure 2-9: Flood depths for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)	15
Figure 2-10: Flood velocities for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)	16
Figure 2-11: Flood hazard ¹ for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)	17
Figure 2-12: Flood depths for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)	18
Figure 2-13: Flood velocities for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)	19
Figure 2-14: Flood hazard ¹ for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)	20
Figure 2-15 Flood Map for Planning 1% and 0.1% AEP undefended flood events +6% (central climate change allowance)	21
Figure 2-16: Recorded historic flood events onsite and around the site	22
Figure 2-17: EA Flood Warning Areas and Flood Alert Areas	23
Figure 2-18: Potential access and escape routes	24

Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)	27
Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)	28
Figure 3-3: Medium risk event surface water flood hazard (Third generation - Risk of Flooding from Surface Water map)	29
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)	30
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)	31
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)	32
Figure 5-1: JBA 5m Groundwater Emergence Map	35
Figure 5-2: Soils and geology	37
Figure 6-1: Potential blockage	38
Figure 6-2: EA Reservoir Flood Map	39

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 (Lower Ouse - Downstream, 2015)	14
Table 2-3: Modelled climate change allowances for peak river flows for the Upper and Bedford Ouse management catchment (Lower Ouse - Non Main Rivers 2015 (St Ives))	14
Table 3-1: Existing surface water flood risk based on percentage area at risk using the NaFRA2 RoFSW map	26
Table 5-1: Groundwater Hazard Classification	36

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS:240. 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:240

- Location: Giffords Park, East of B1040, St Ives, (Needingworth)
- Existing site use: Agricultural with habitable farmhouse present on site
- Existing site use vulnerability: More vulnerable
- Proposed site use: Mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 122.17
- Watercourse: Heath Drain (Lower Ouse - Non Main Rivers 2015 and Downstream Ouse, 2015), unnamed unmodelled ordinary watercourses
- Environment Agency (EA) model: Lower Ouse - Non Main Rivers (St Ives) 2015 and Downstream Ouse, 2015
- 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

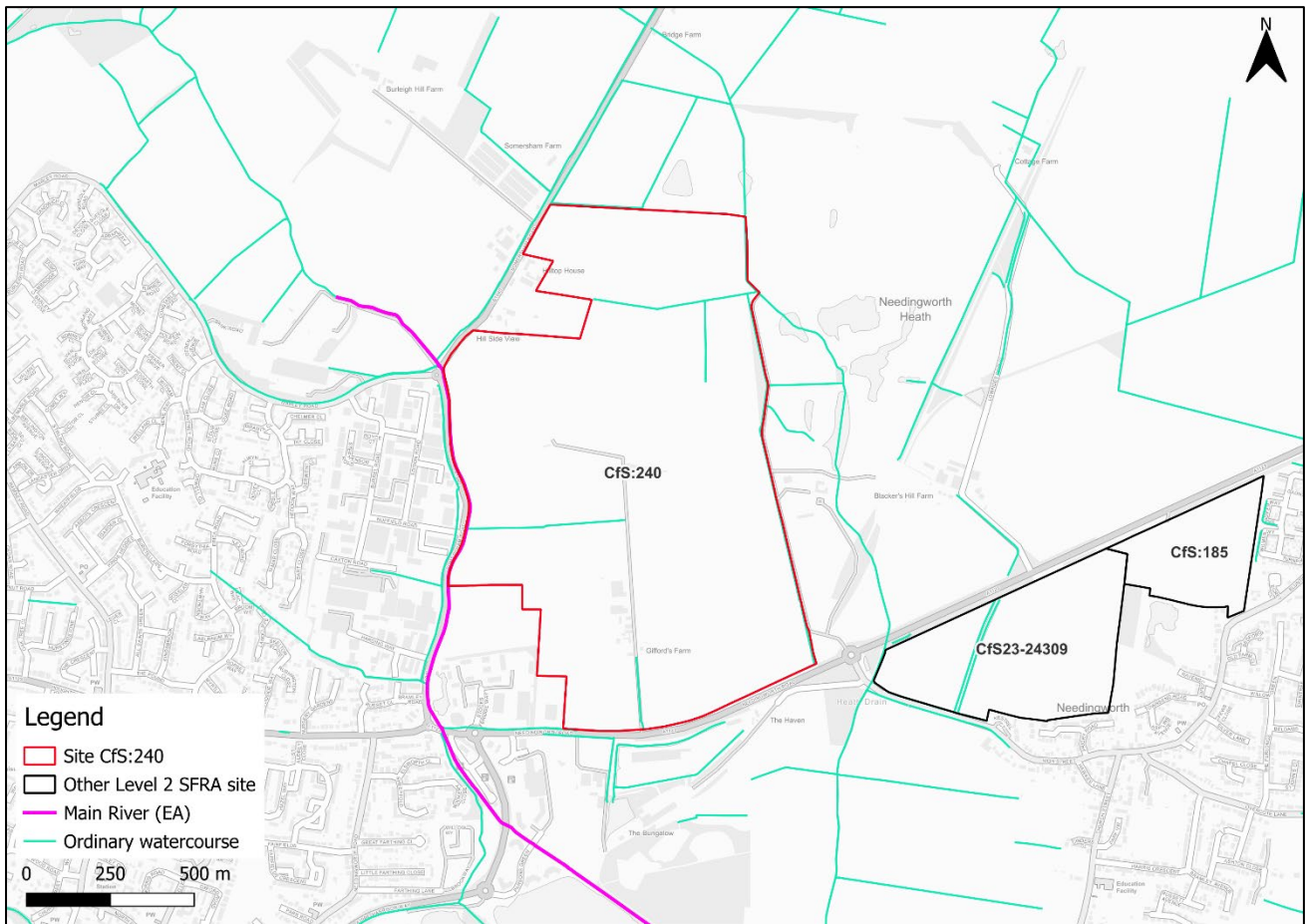


Figure 1-1: Existing site location boundary

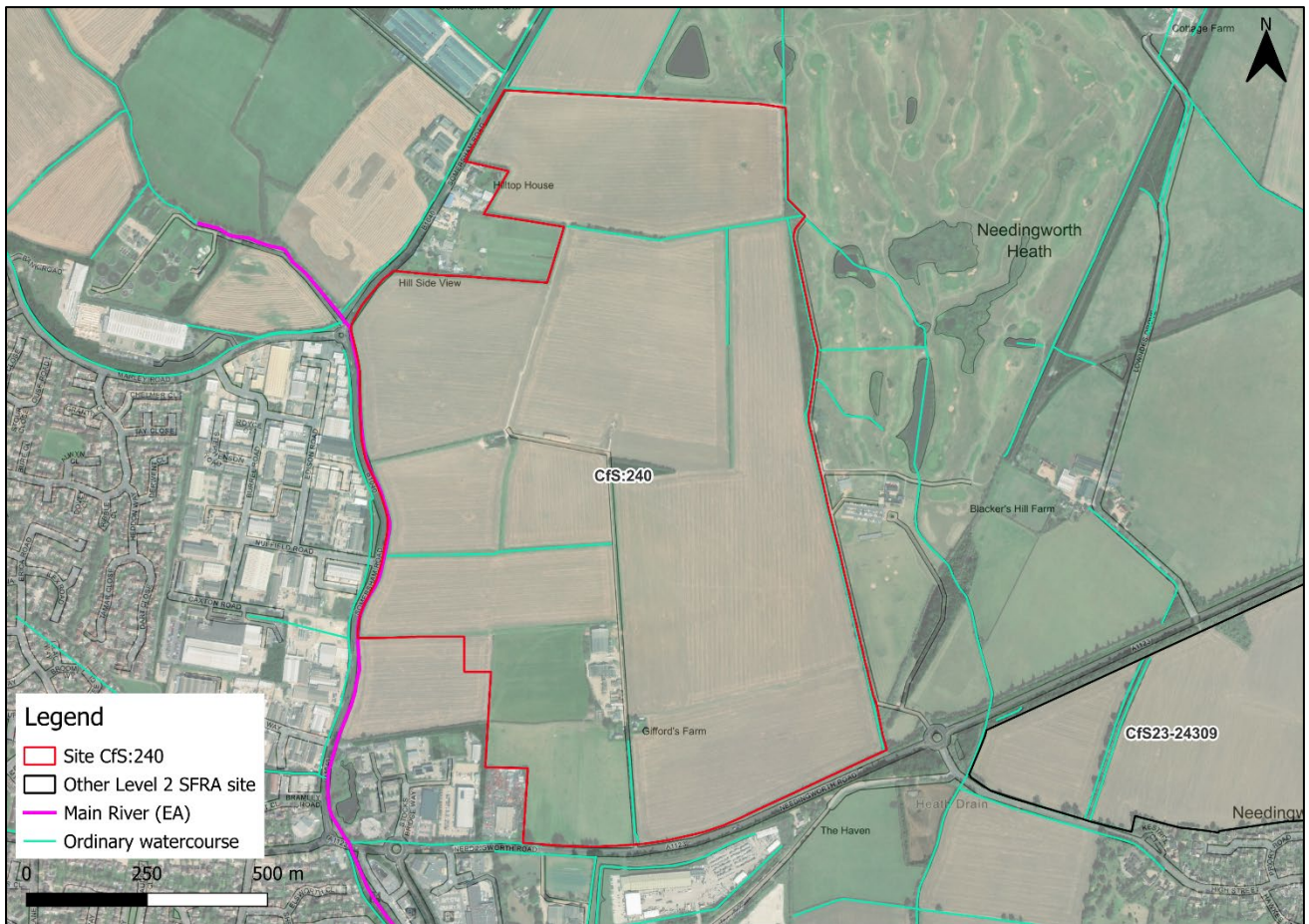


Figure 1-2: Aerial photography

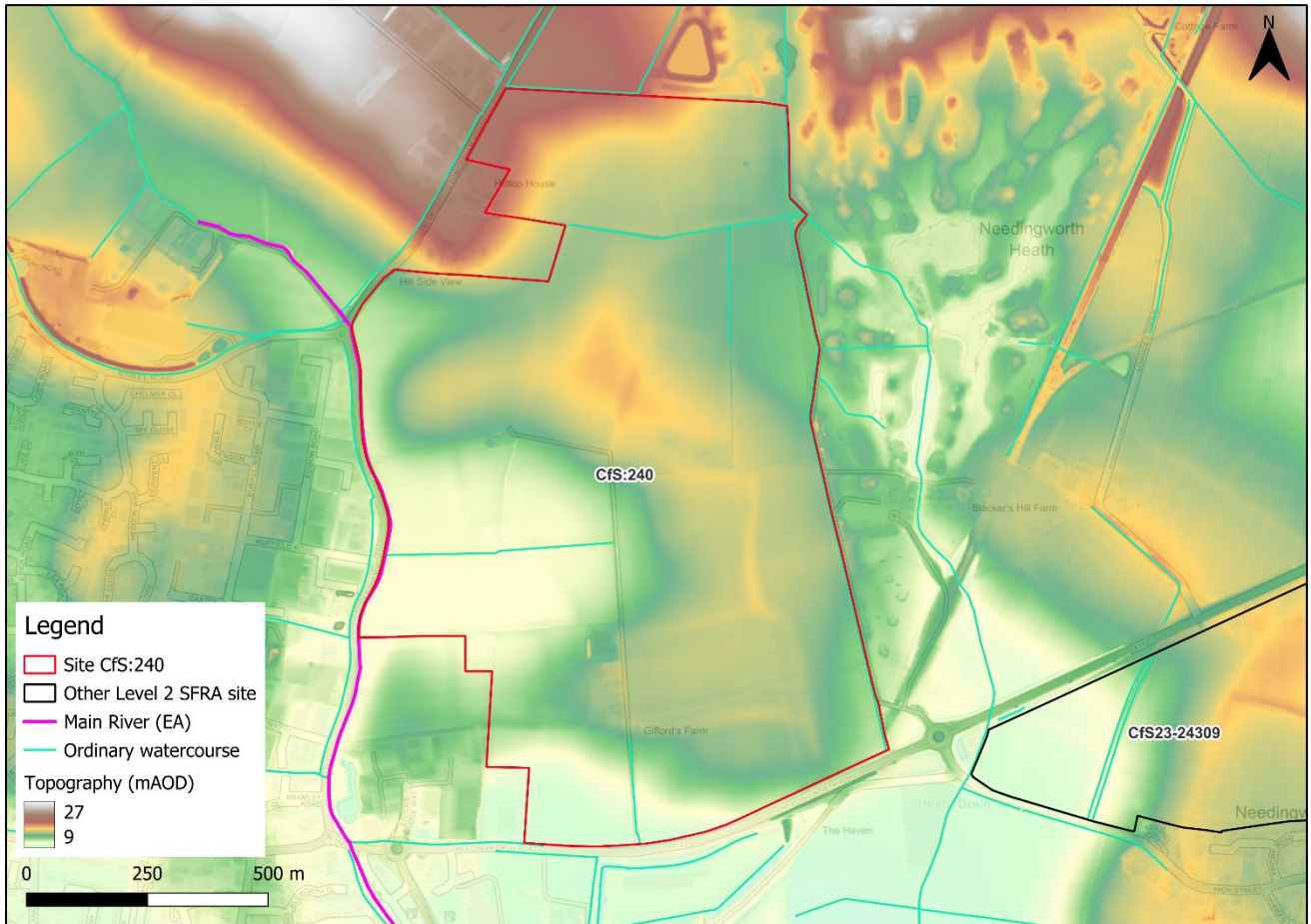


Figure 1-3: Topography

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 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 predominantly located within Flood Zone 1 and therefore at low risk from rivers and the sea.

The western extent of the site is located within the functional floodplain (Flood Zone 3b). The site is located within two Lower Ouse 2015 (Downstream Lower Ouse and Non Main Rivers (St Ives)) model domains and the Flood Map for Planning 3.3% AEP defended scenario has been used to define Flood Zone 3b in this area. Flood Zones 3a and 2 are vastly different to the equivalent model outputs for reasons unknown at this stage. It is likely the Flood Map for Planning is based on the EA's New National Model in this location.

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)
86	3	2	9

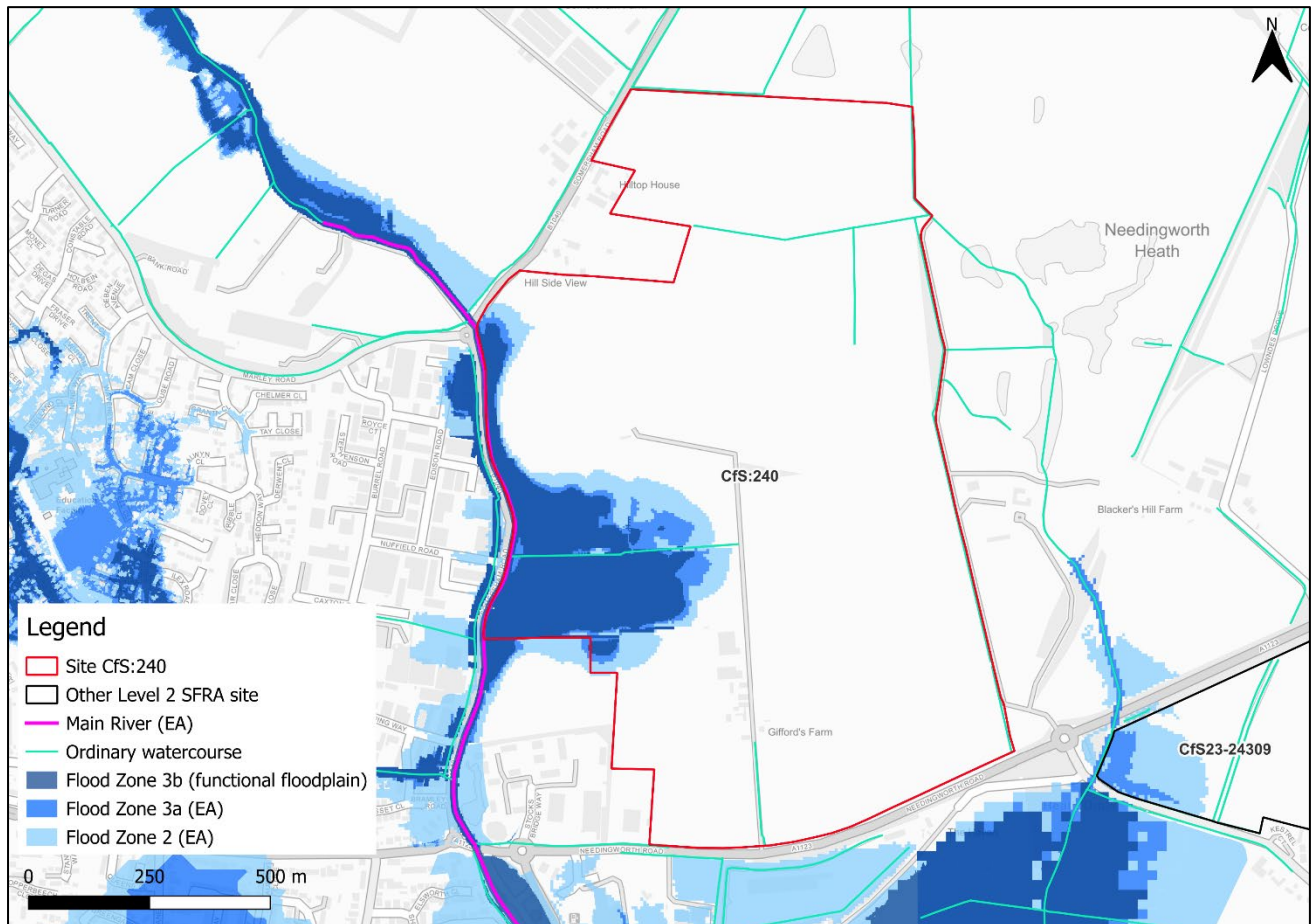


Figure 2-1: Existing risk

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 Heath Drain remains fairly localised to the Heath Drain, only impacting the western site boundary. Flood depths are modelled to mostly remain below 0.6m (Figure 2-2). Velocities are modelled to predominantly remain below 0.25m/s (Figure 2-3). Flooding is modelled to mostly be a danger for most with a small area modelled to be a danger for all (Figure 2-4).

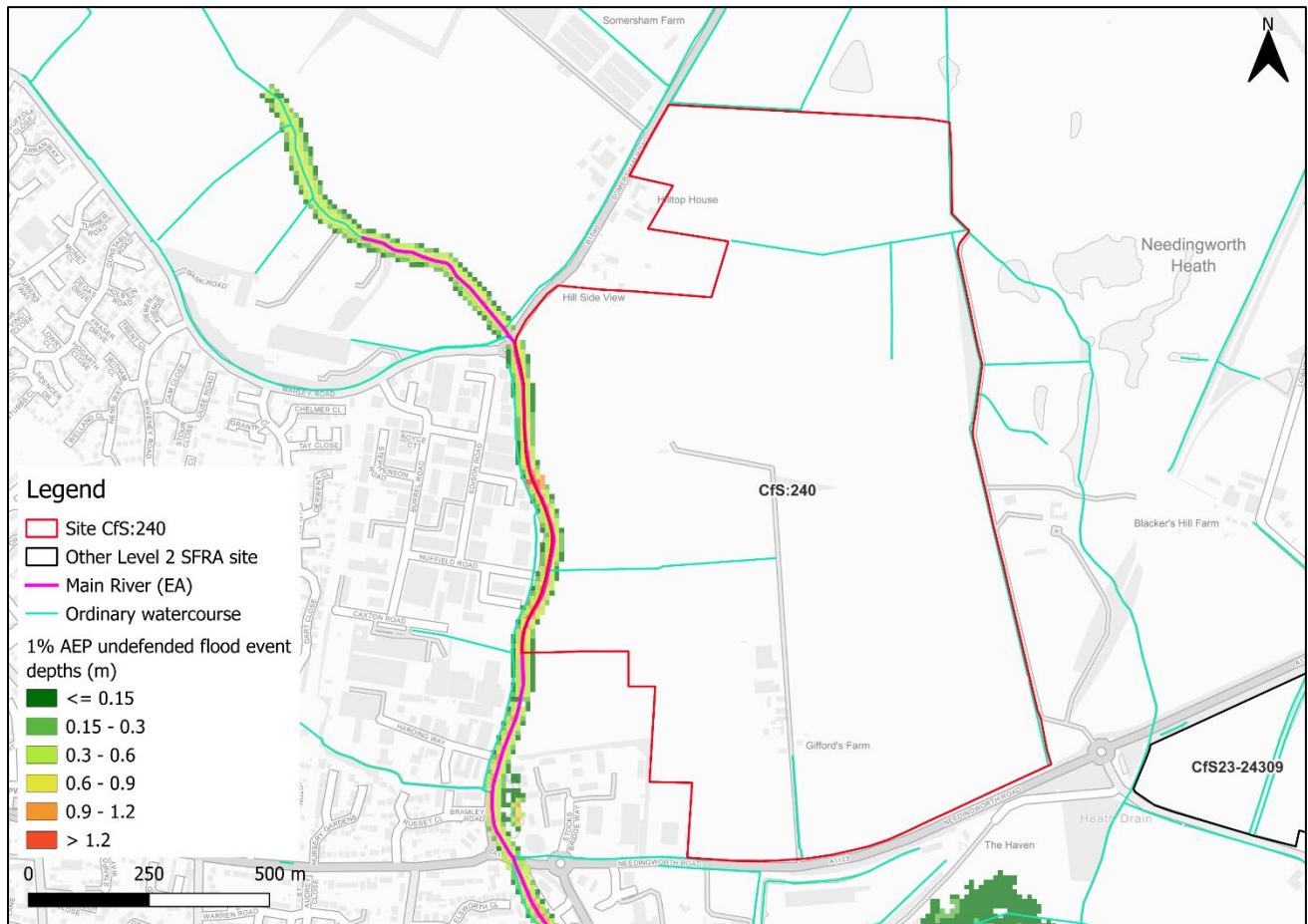


Figure 2-2: Flood depths for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)

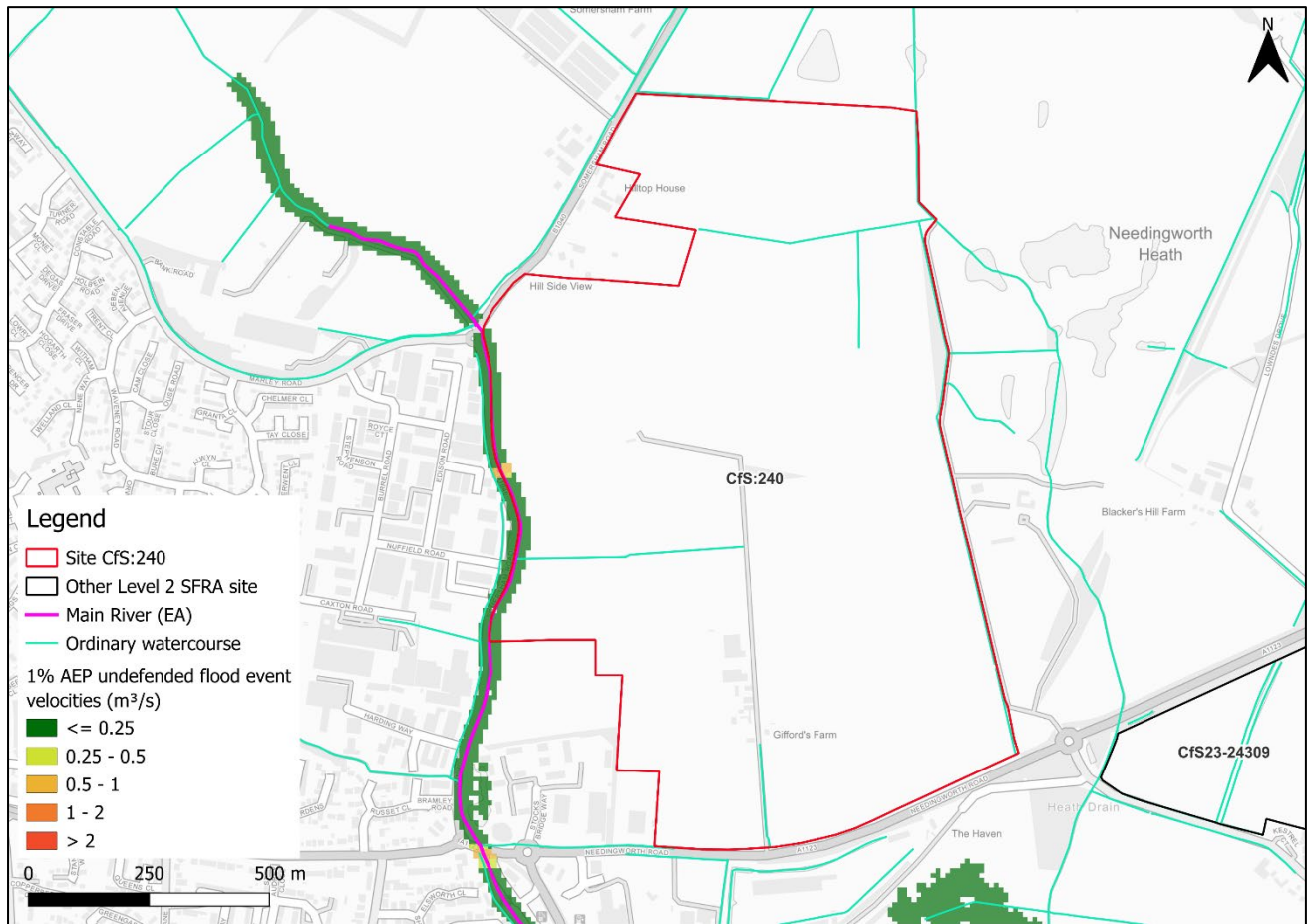


Figure 2-3: Flood velocities for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)

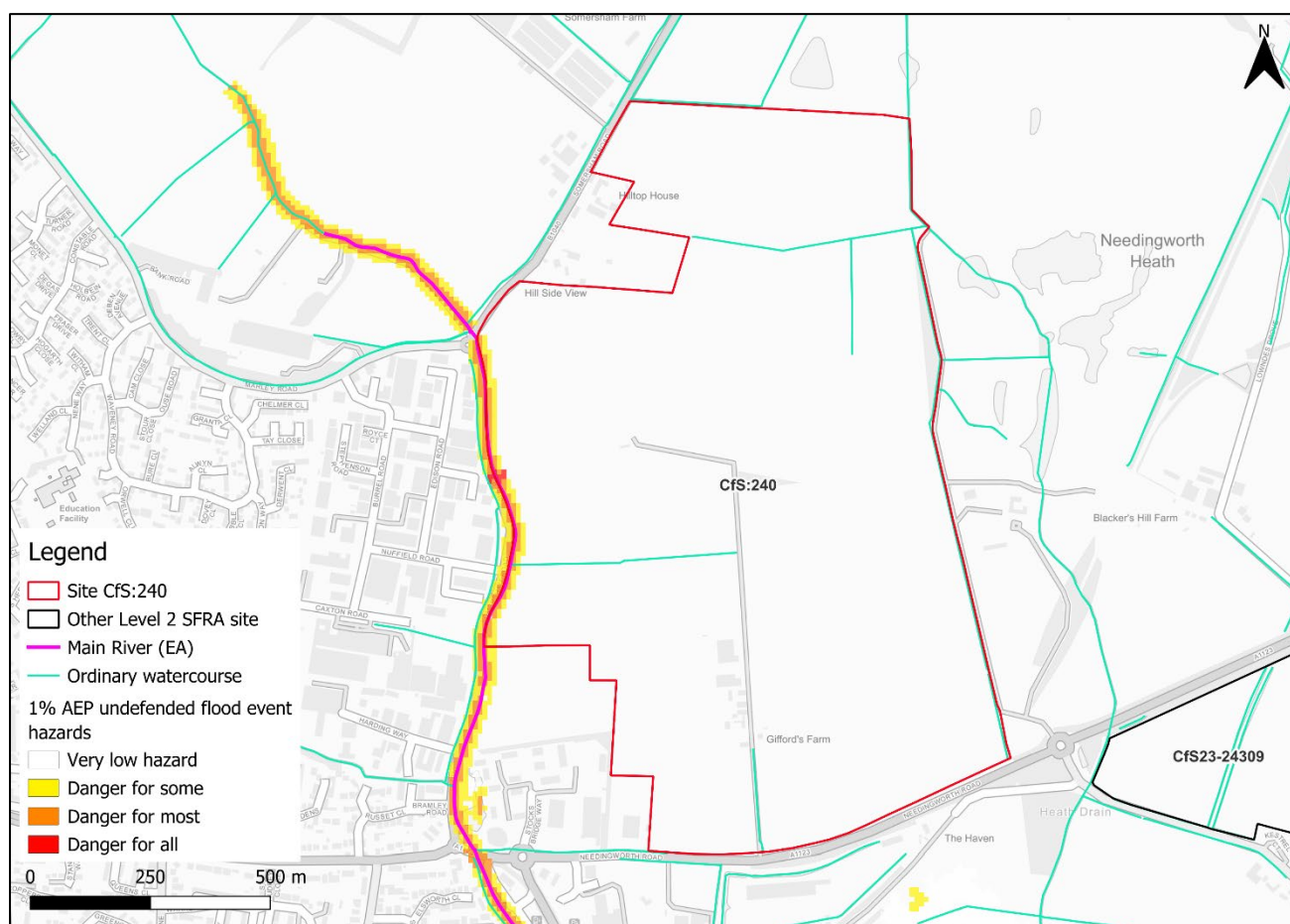


Figure 2-4: Flood hazard¹ for 1% AEP undefended flood event (Lower Ouse - Downstream, 2015)

2.1.3 Fluvial undefended model outputs (Lower Ouse - Non Main Rivers 2015 (St Ives))

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

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.

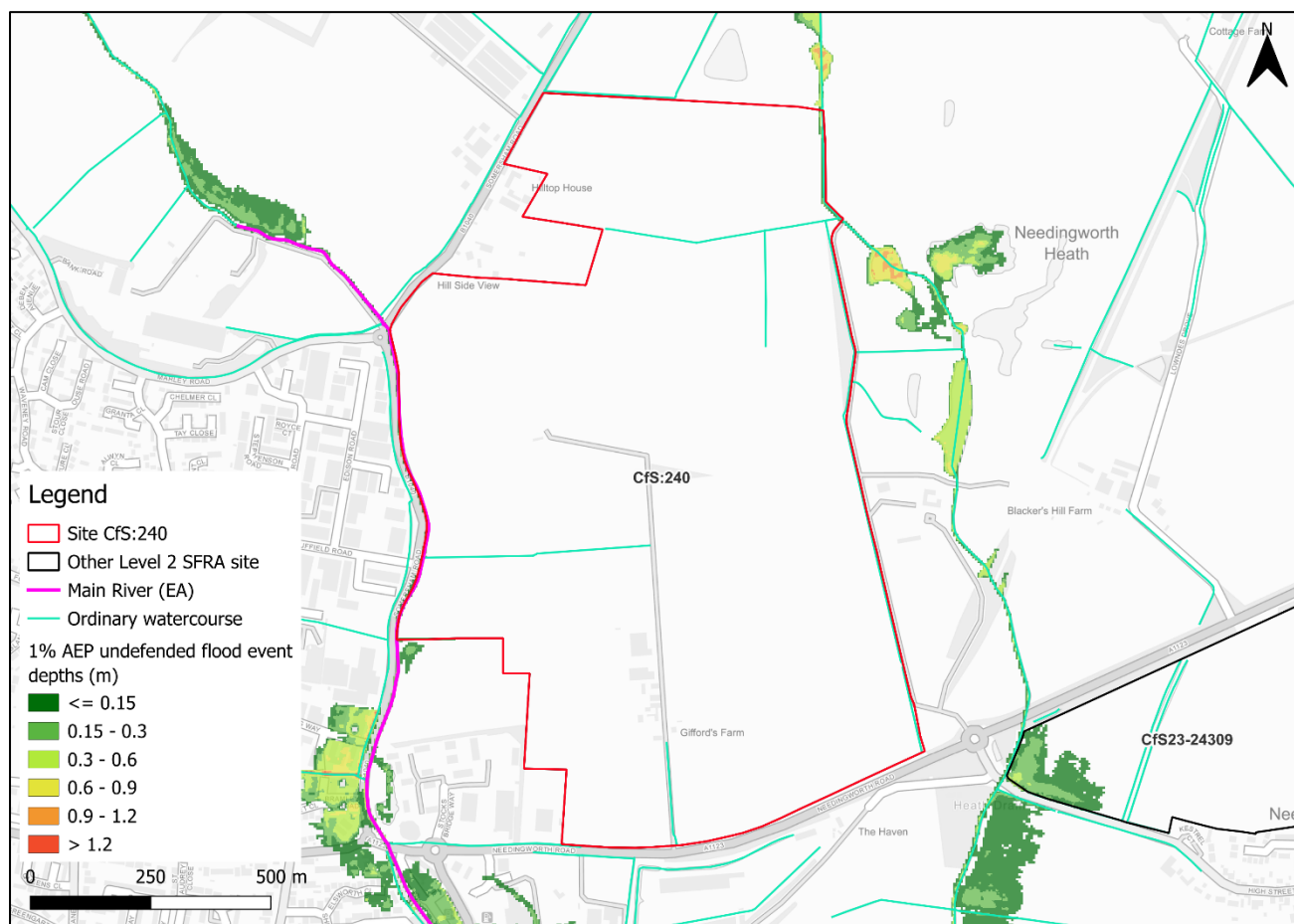


Figure 2-5: Flood depths for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)

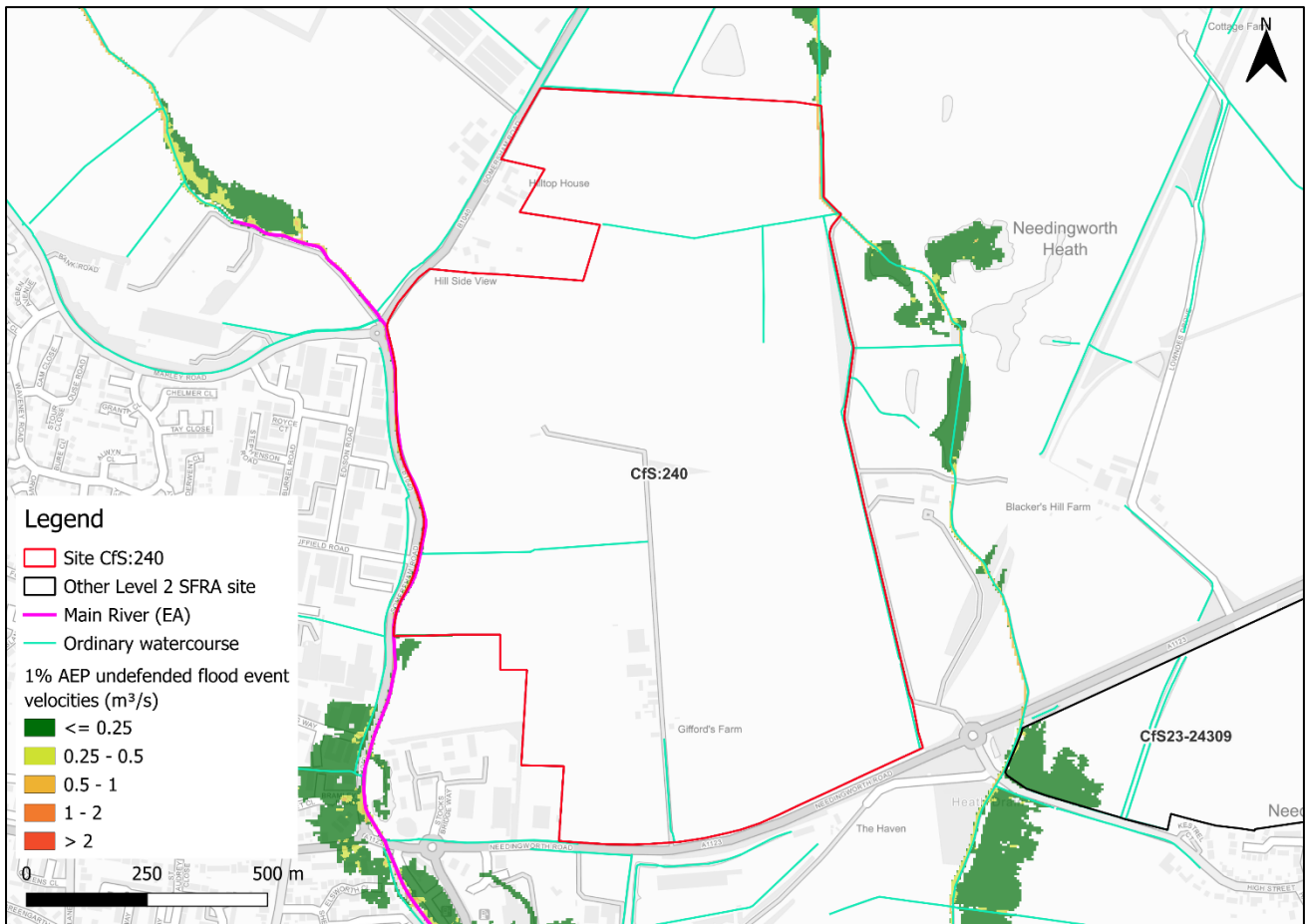


Figure 2-6: Flood velocities for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)

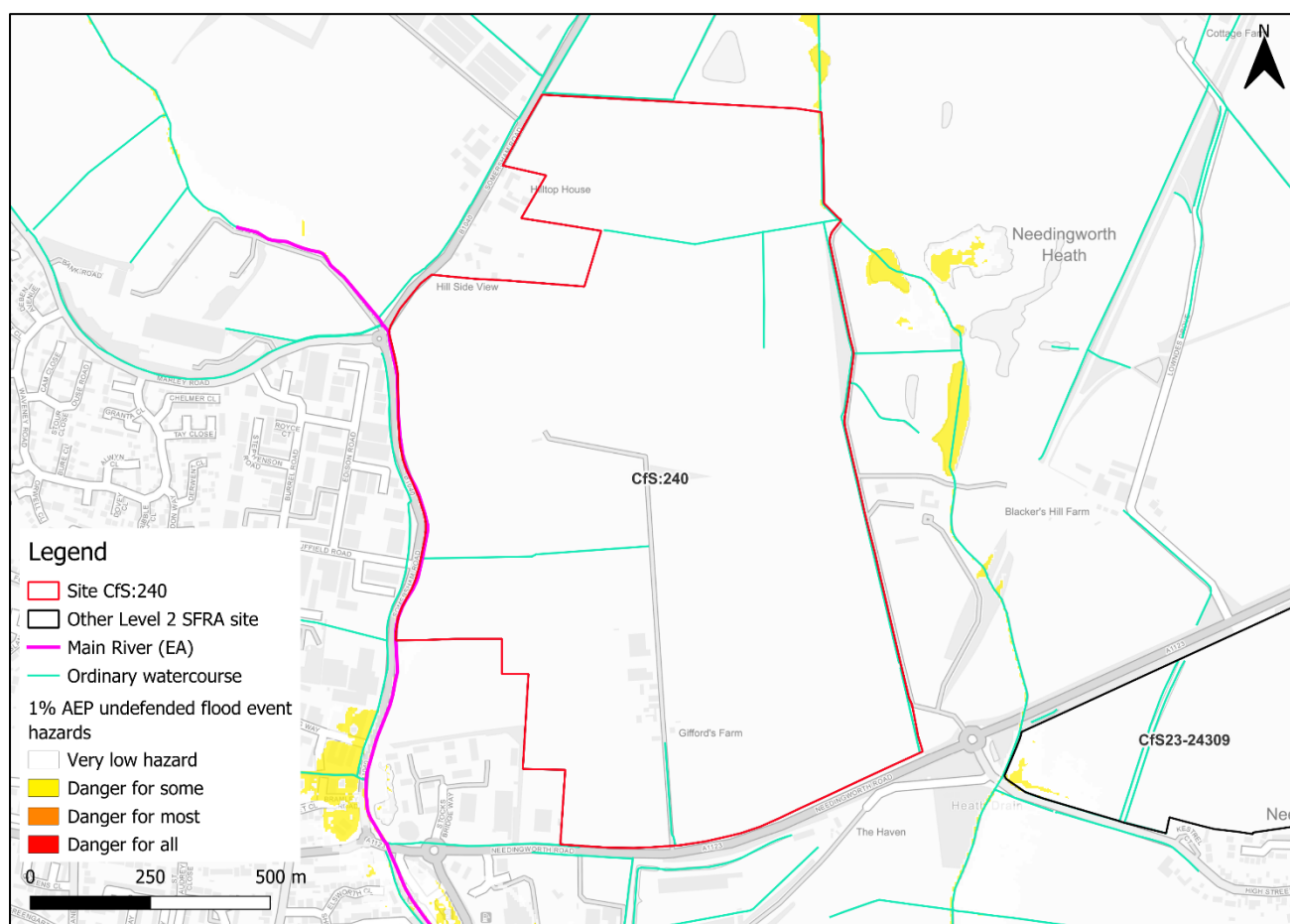


Figure 2-7: Flood hazard² for 1% AEP undefended flood event (Lower Ouse - Non Main Rivers (St Ives) 2015)

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.

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 2-8. Note, the WwNP mapping is broadscale and indicative, therefore further investigation will be required for any land shown

² 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.

to have potential for WwNP. There is some potential within the site and significant potential upstream of the site for tree planting to reduce flood risk.

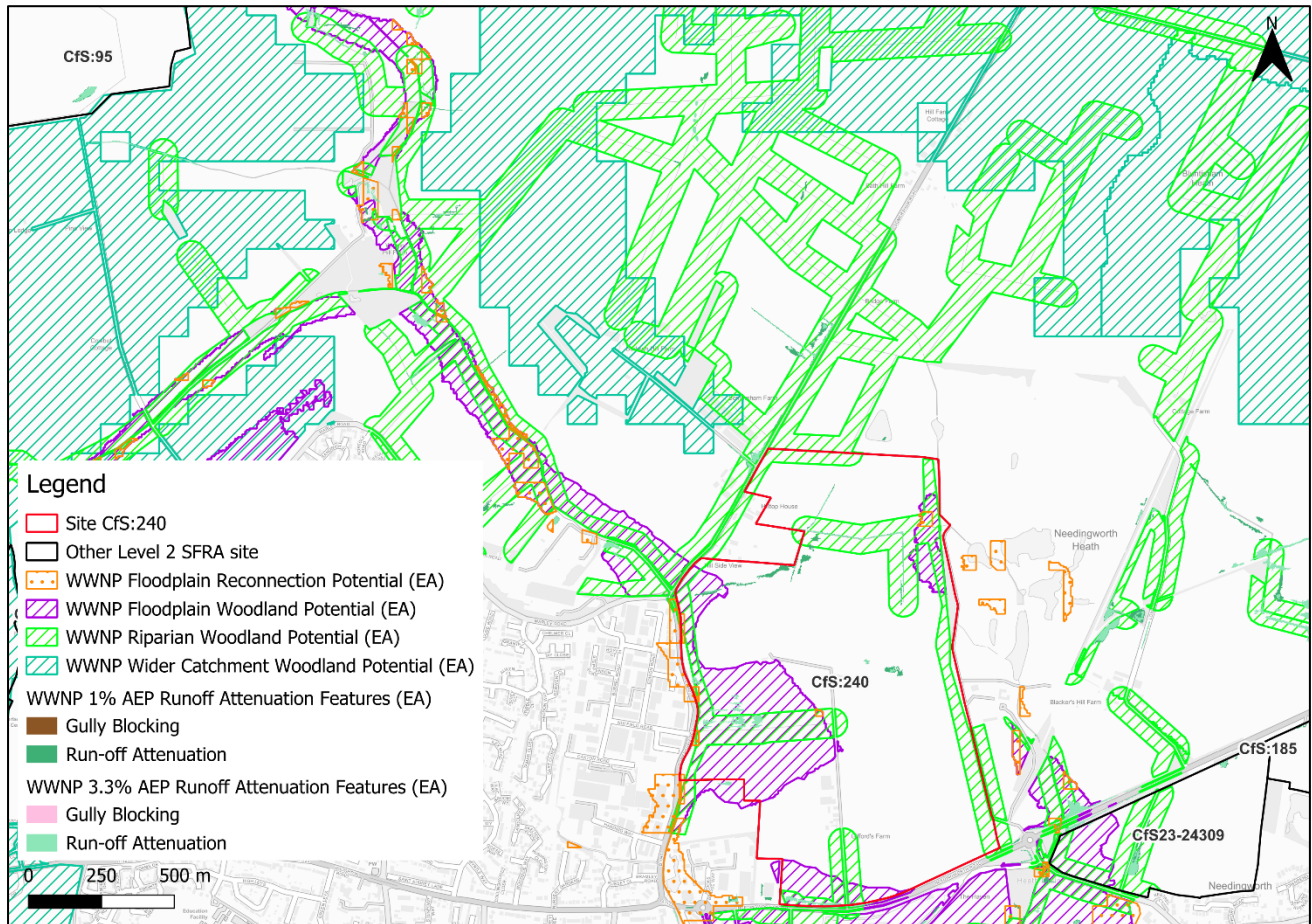


Figure 2-8: Natural Flood Management (NFM) potential mapping

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.

Table 2-2: Modelled climate change allowances for peak river flows for the Upper and Bedford Ouse management catchment (Lower Ouse - Downstream, 2015)

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	

Table 2-3: Modelled climate change allowances for peak river flows for the Upper and Bedford Ouse management catchment (Lower Ouse - Non Main Rivers 2015 (St Ives))

Return period (AEP event)	Central allowance 2080s (% increase)	Higher central allowance 2080s (% increase)
3.3%	Not available	
1%	19	30
0.1%	19	30

There is little to no change in risk to the site between the 1% AEP event present day and climate change scenarios in the Lower Ouse - Downstream (2015) detailed model.

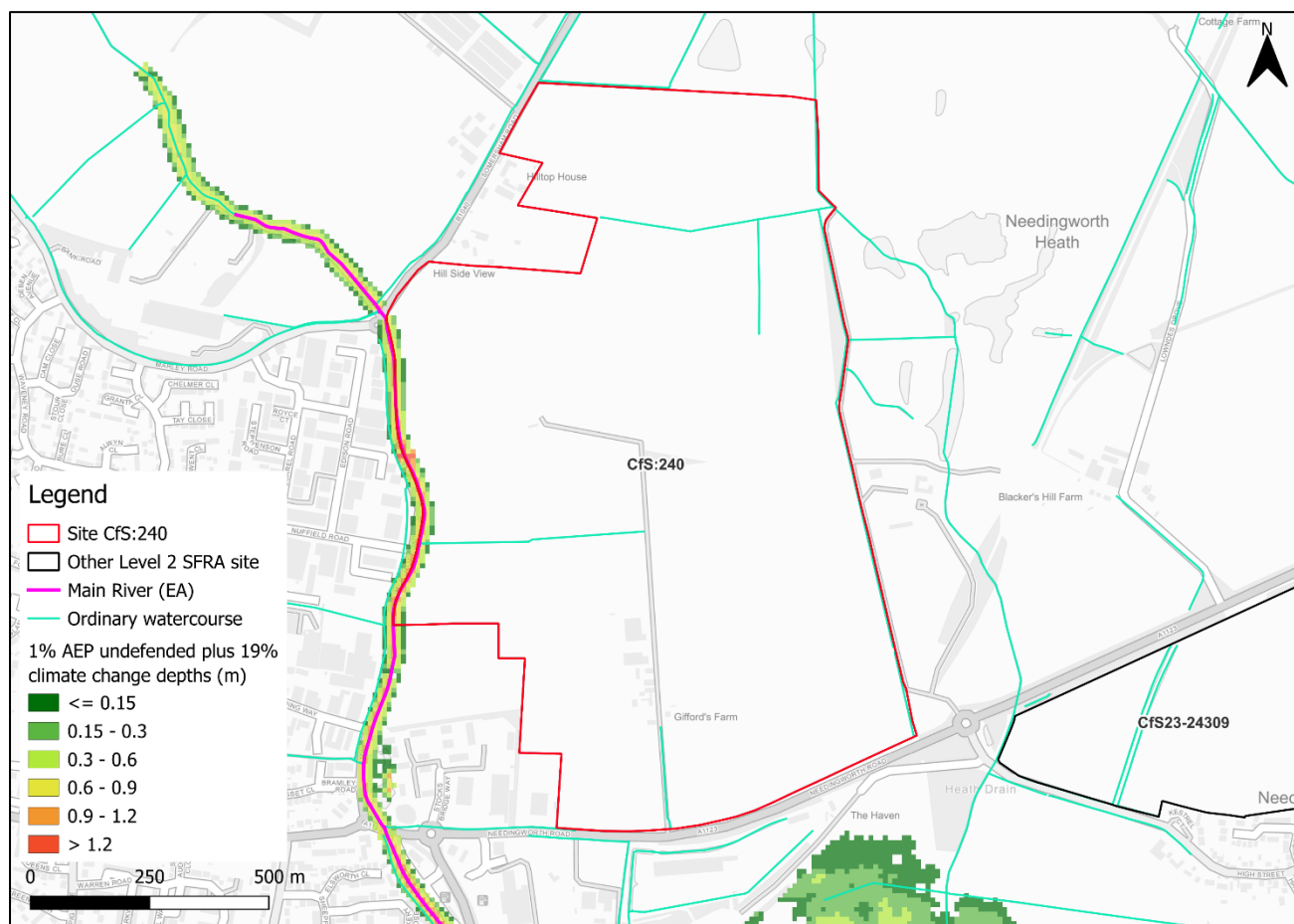


Figure 2-9: Flood depths for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)

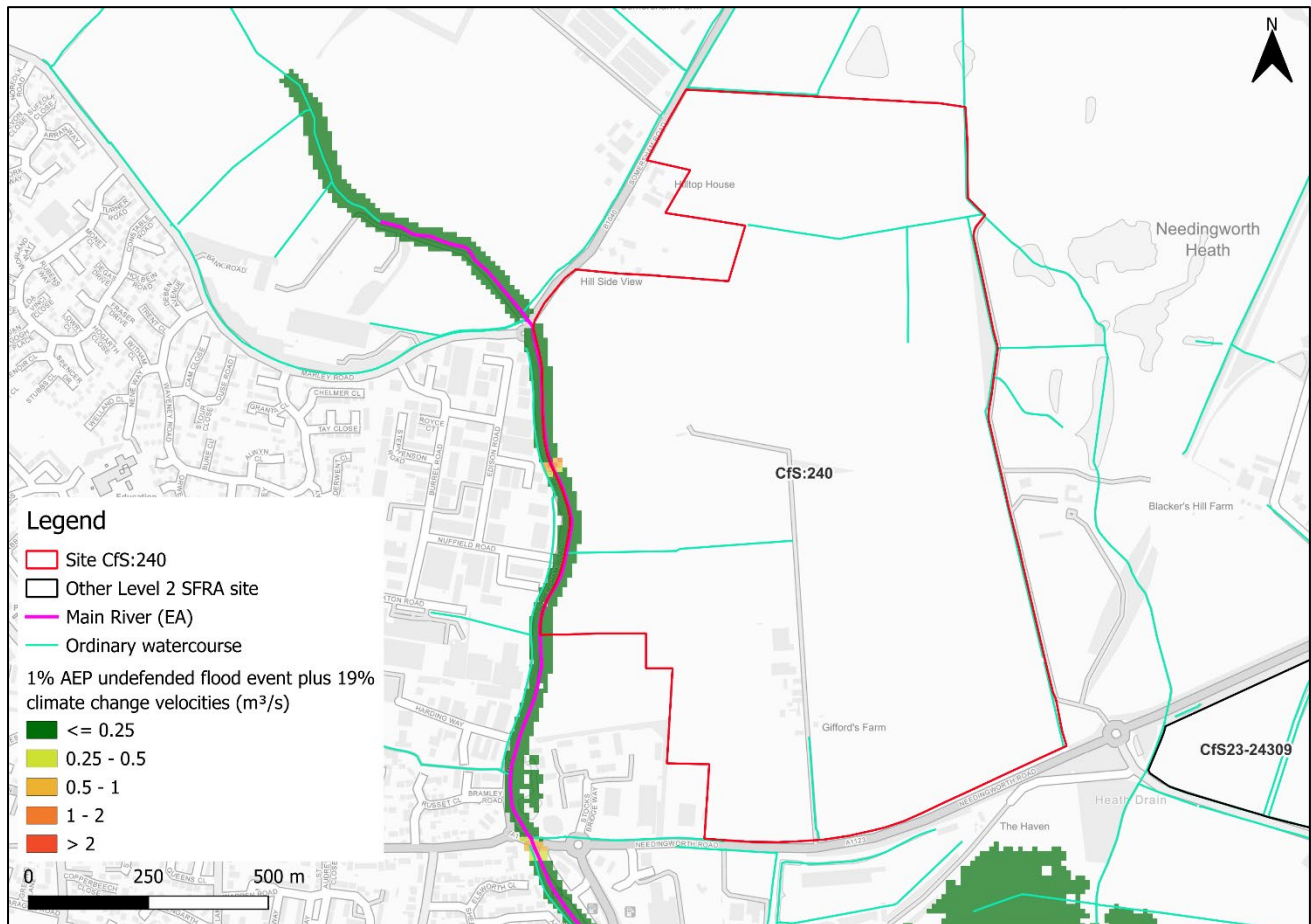


Figure 2-10: Flood velocities for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)

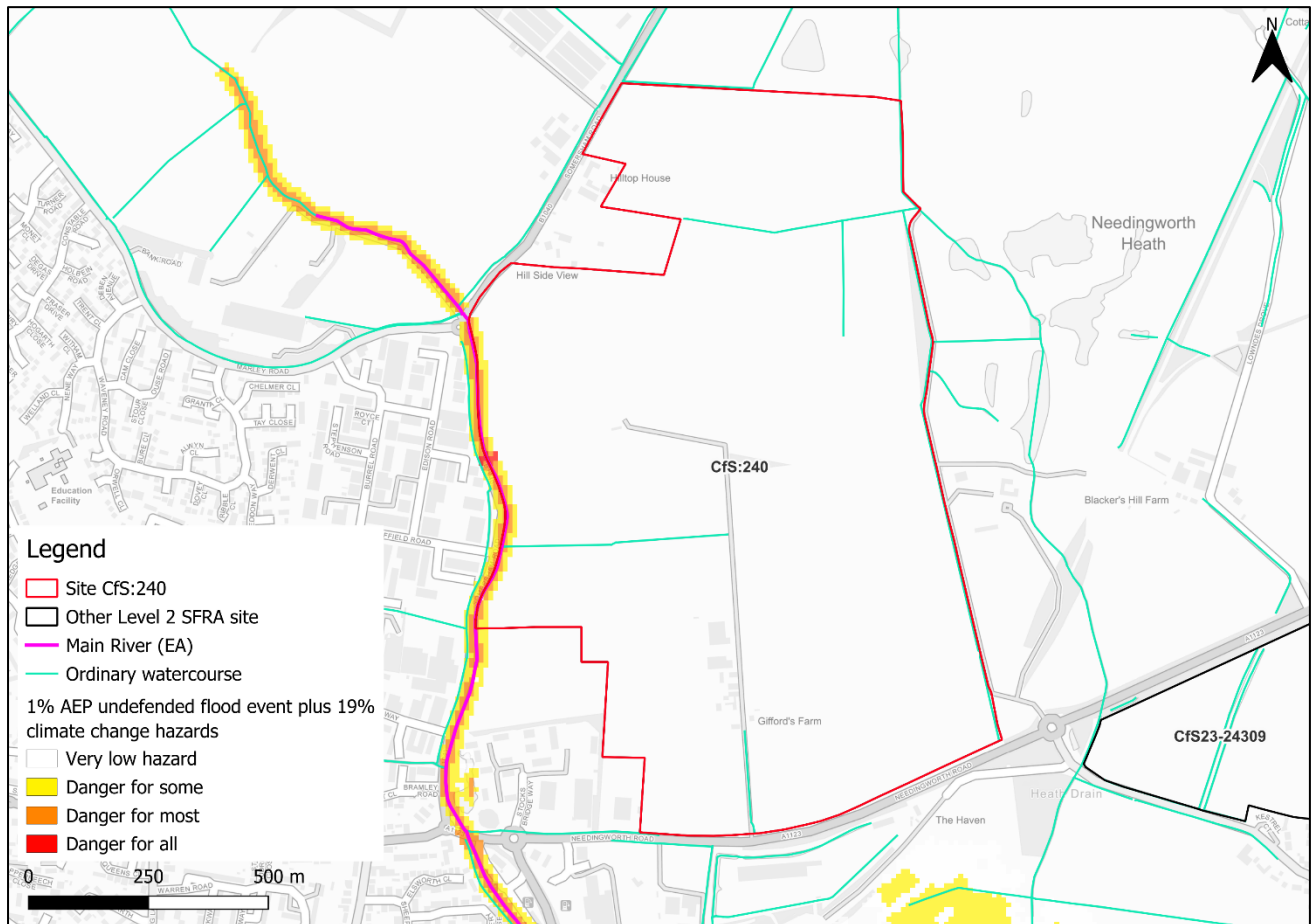


Figure 2-11: Flood hazard¹ for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Downstream 2015)

The Lower Ouse - Non Main Rivers (St Ives) (2015) detailed model shows a small area of flooding in the west site extent. This flooding is modelled to remain predominantly below 0.15m in depth (Figure 2-12) and below 0.25m/s in velocity (Figure 2-13). The flooding is modelled to be a very low hazard (Figure 2-14).

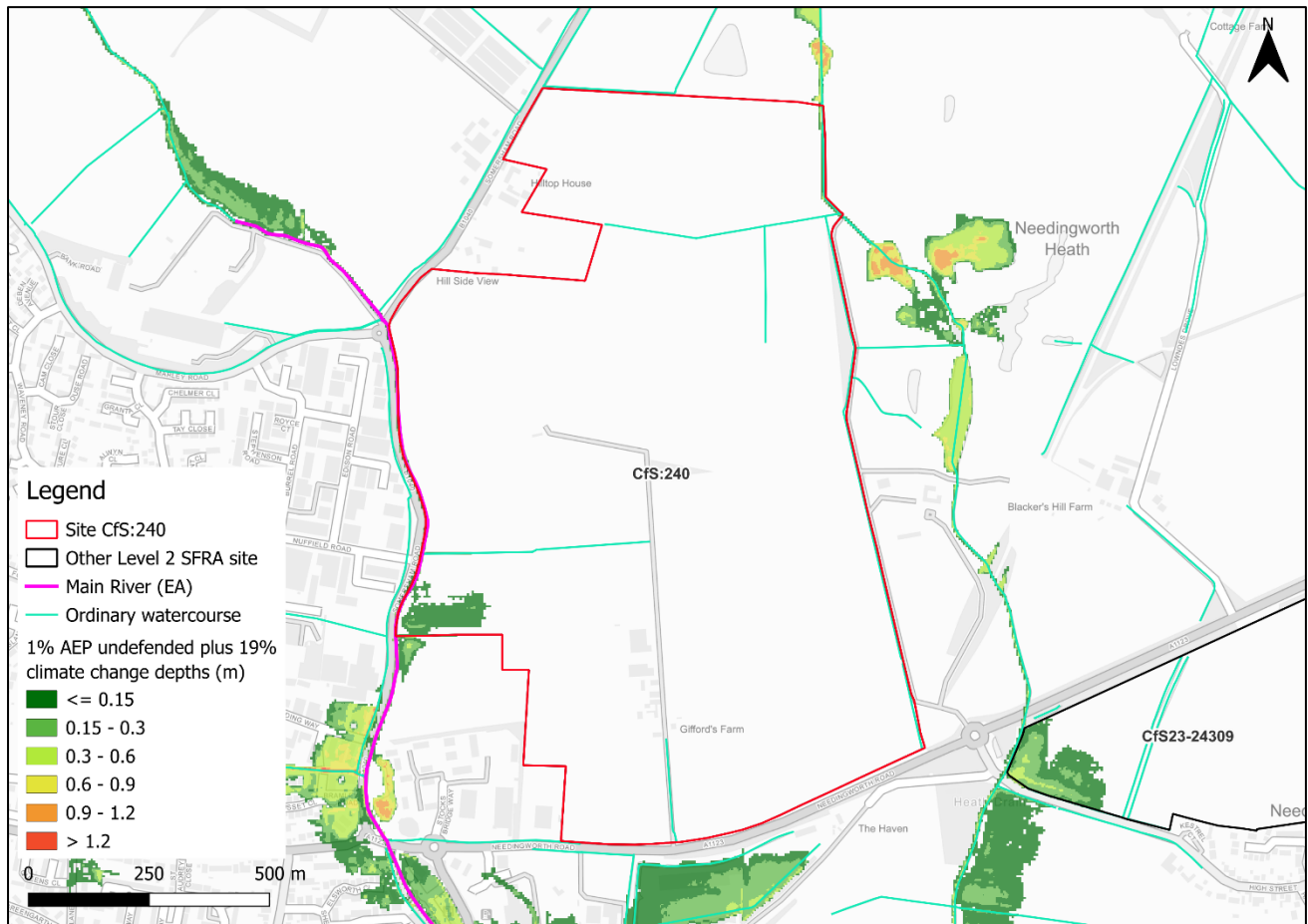


Figure 2-12: Flood depths for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)

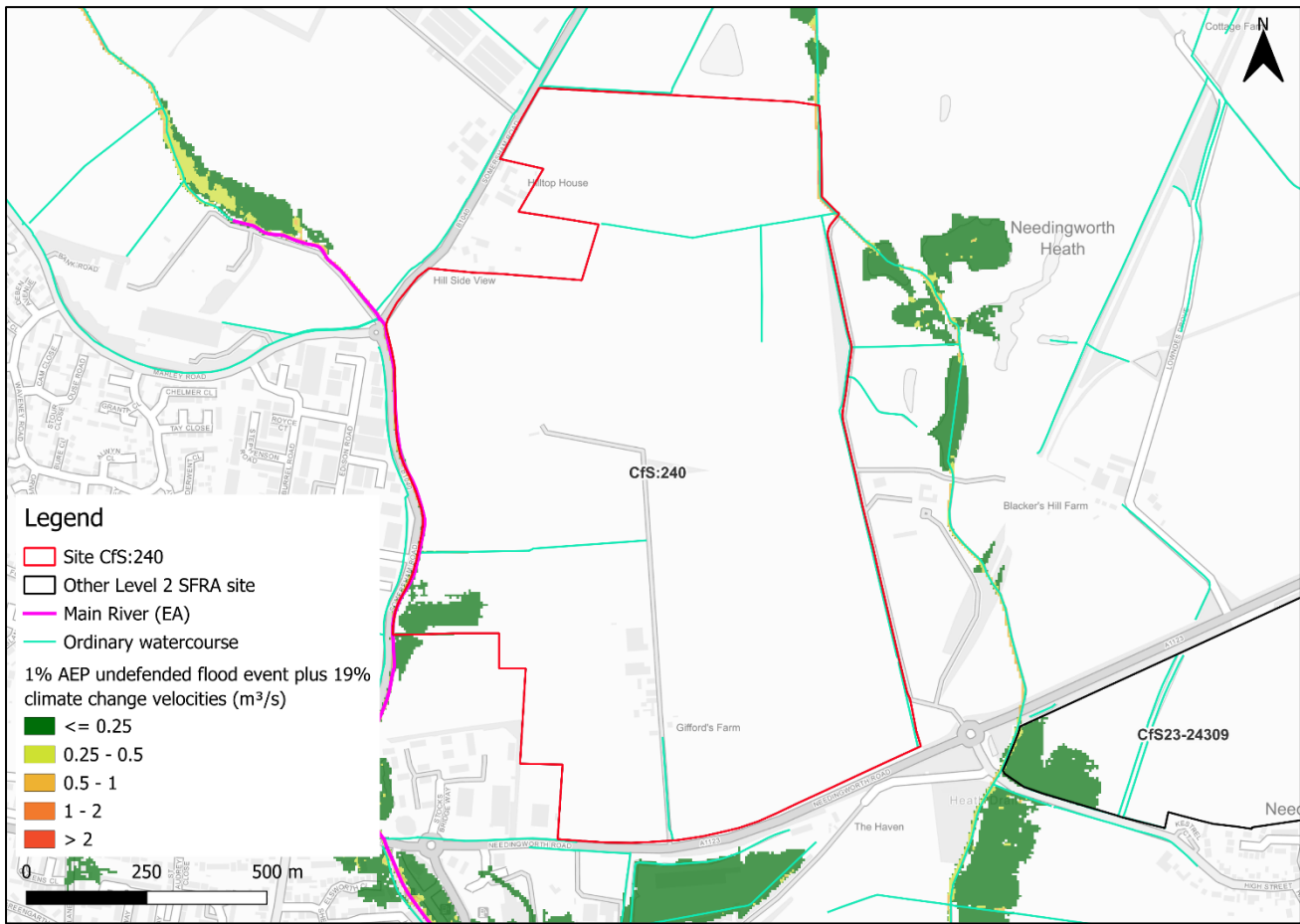


Figure 2-13: Flood velocities for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)

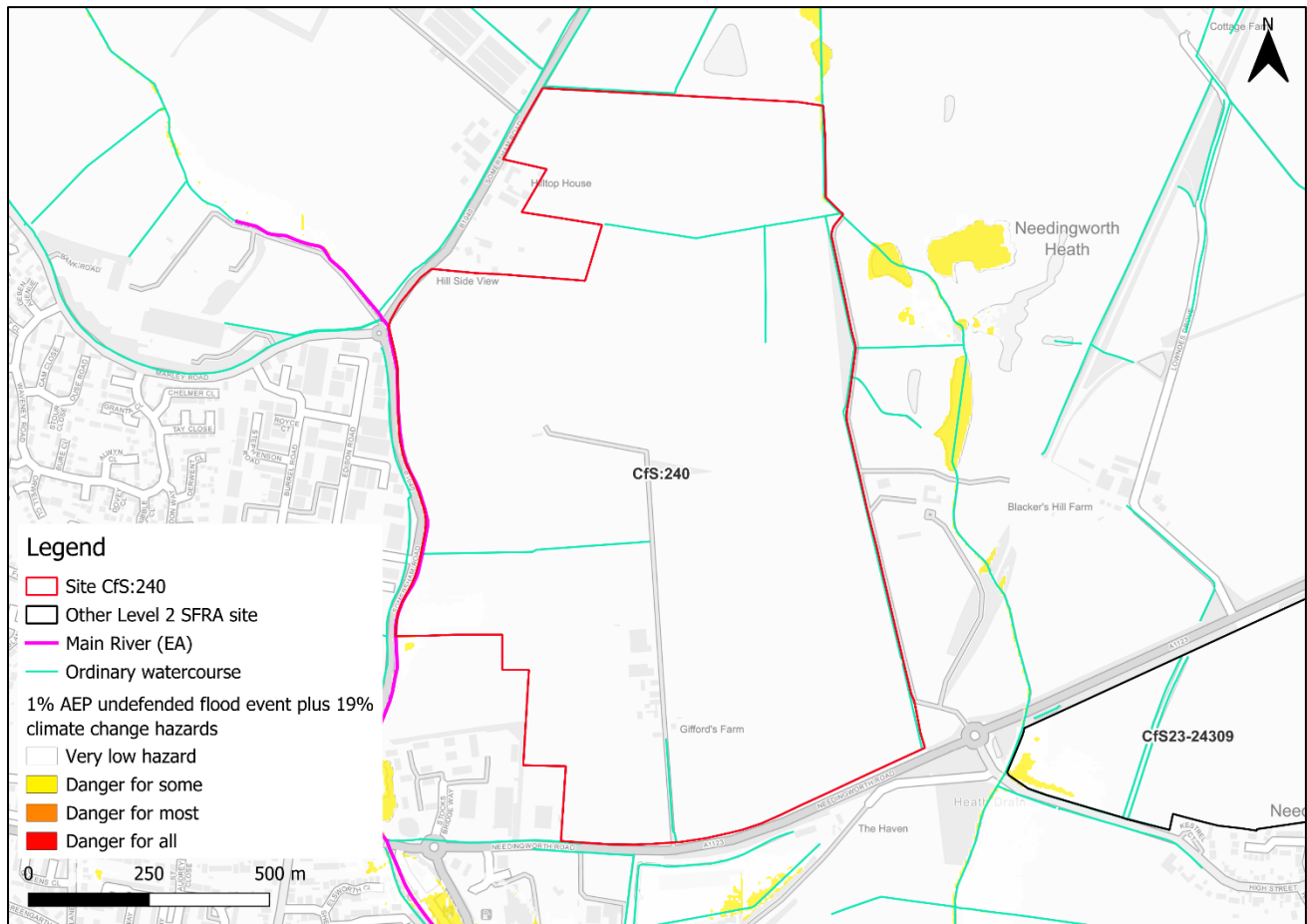


Figure 2-14: Flood hazard¹ for 1% AEP undefended flood event +19% (central climate change allowance) (Lower Ouse - Non Main Rivers (St Ives) 2015)

The impacts of climate change on flood risk from Heath Drain have been modelled by the EA through the New National Model which models the central allowance (+19% on peak river flows for the Upper and Bedford Ouse EA management catchment) for the 3.3% AEP defended, 1% AEP defended and undefended, and 0.1% AEP defended and undefended fluvial events. Fluvial flood risk is not expected to significantly increase due to climate change (Figure 2-15).

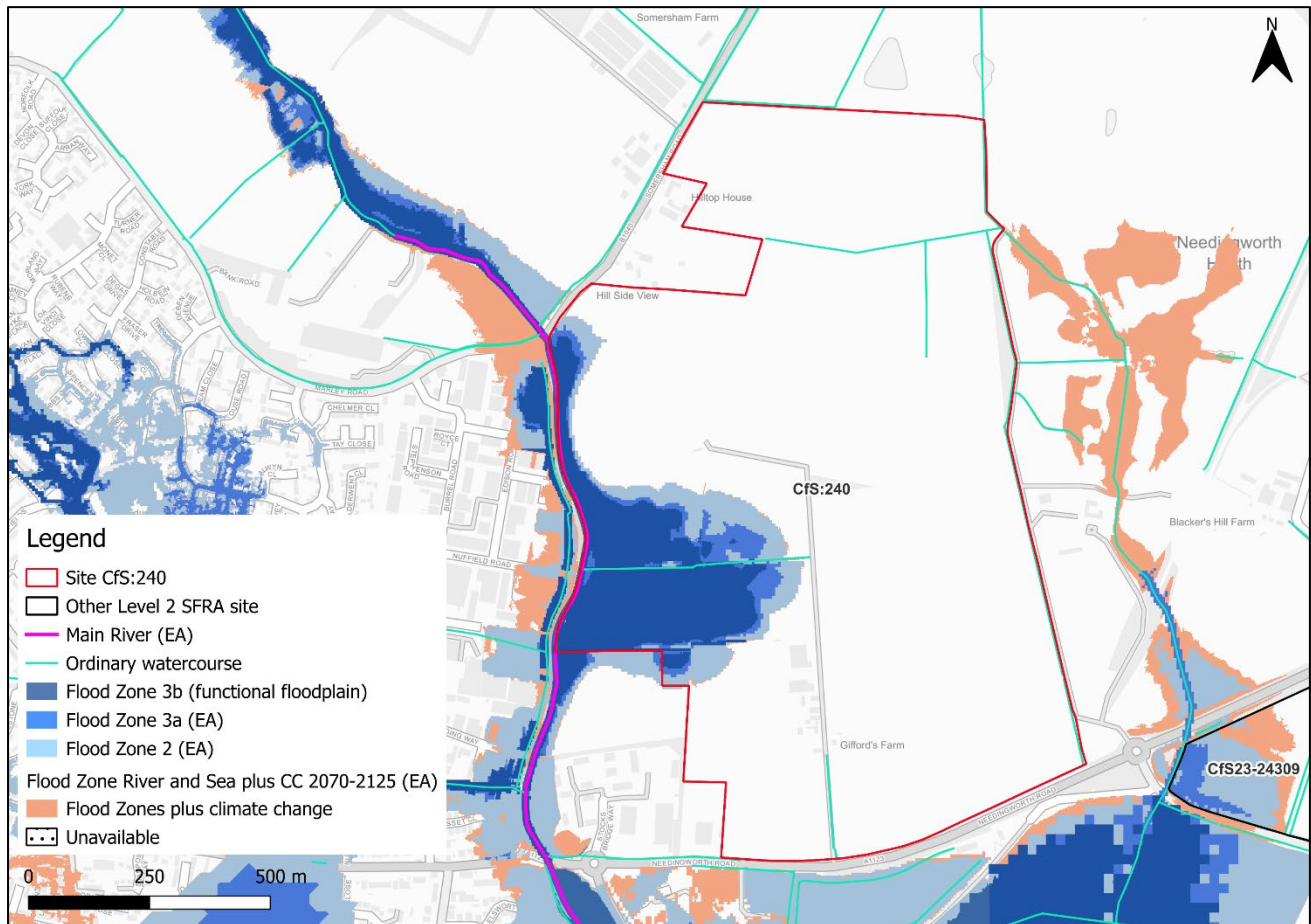


Figure 2-15 Flood Map for Planning 1% and 0.1% AEP undefended flood events +6% (central climate change allowance)

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 and mapped in Figure 2-16 which shows three flood events, March 1947, October 1993 and April 1998, to the south and southwest of the site. The flood source for all events is unknown.

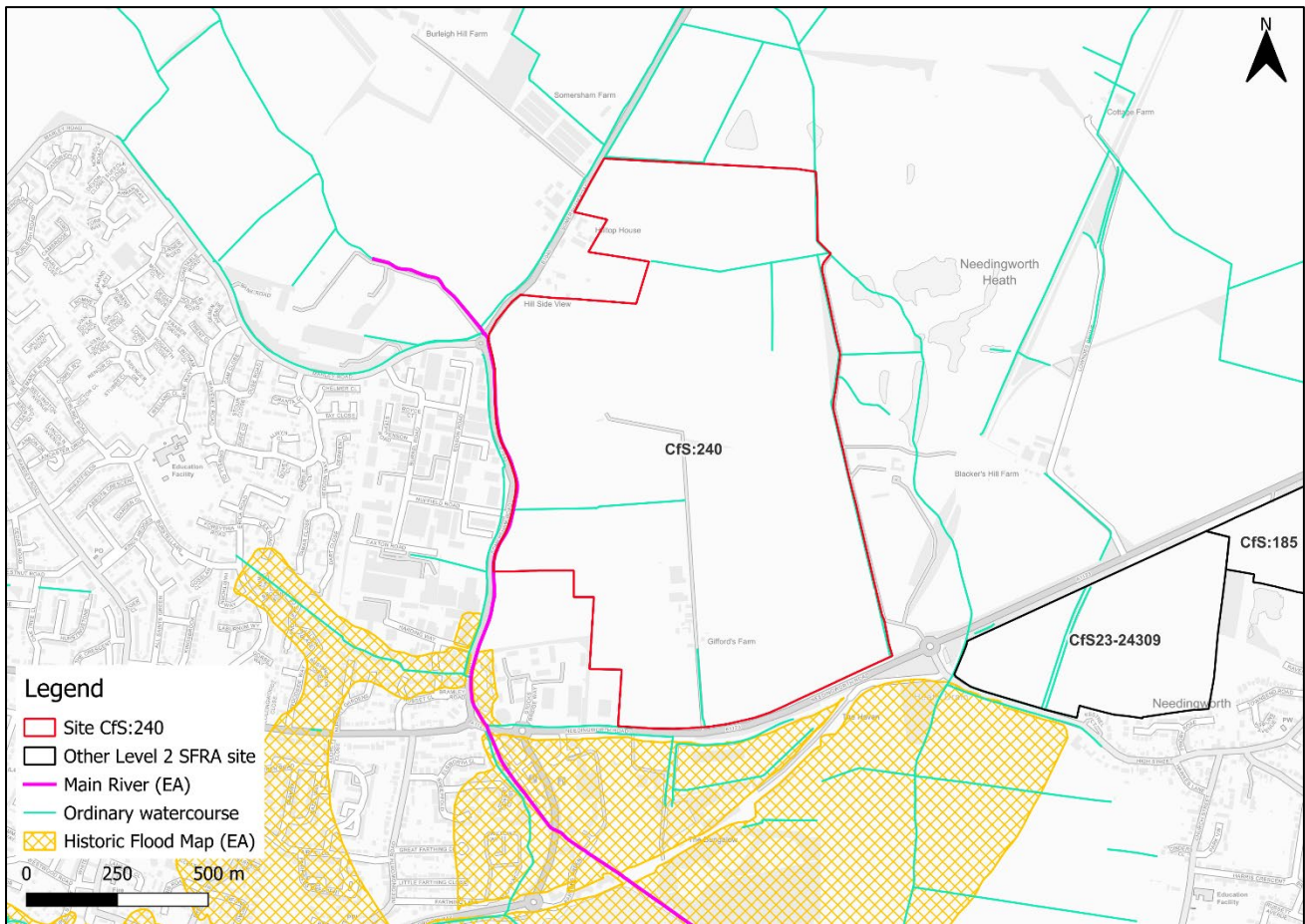


Figure 2-16: Recorded historic flood events onsite and around the site

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. As shown in Figure 2-17, this site is located within a FWA, namely Parsons Drove at St Ives.

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 2-17, this site is located within a FAA, namely River Great Ouse in Cambridgeshire from Brampton to Earith.

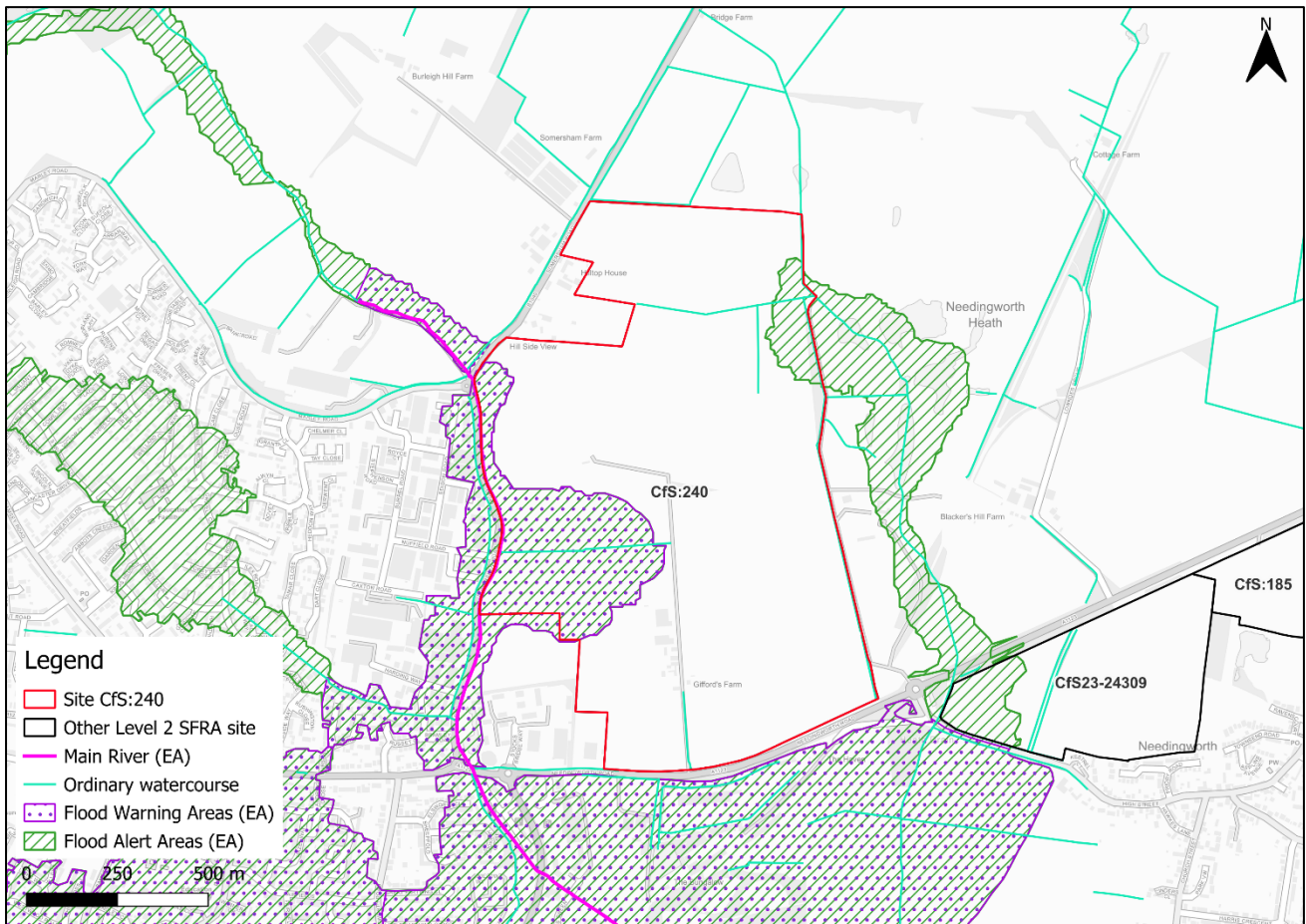


Figure 2-17: EA Flood Warning Areas and Flood Alert Areas

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 Needingworth Road to the south and Somersham Road to the northwest (Figure 2-18).

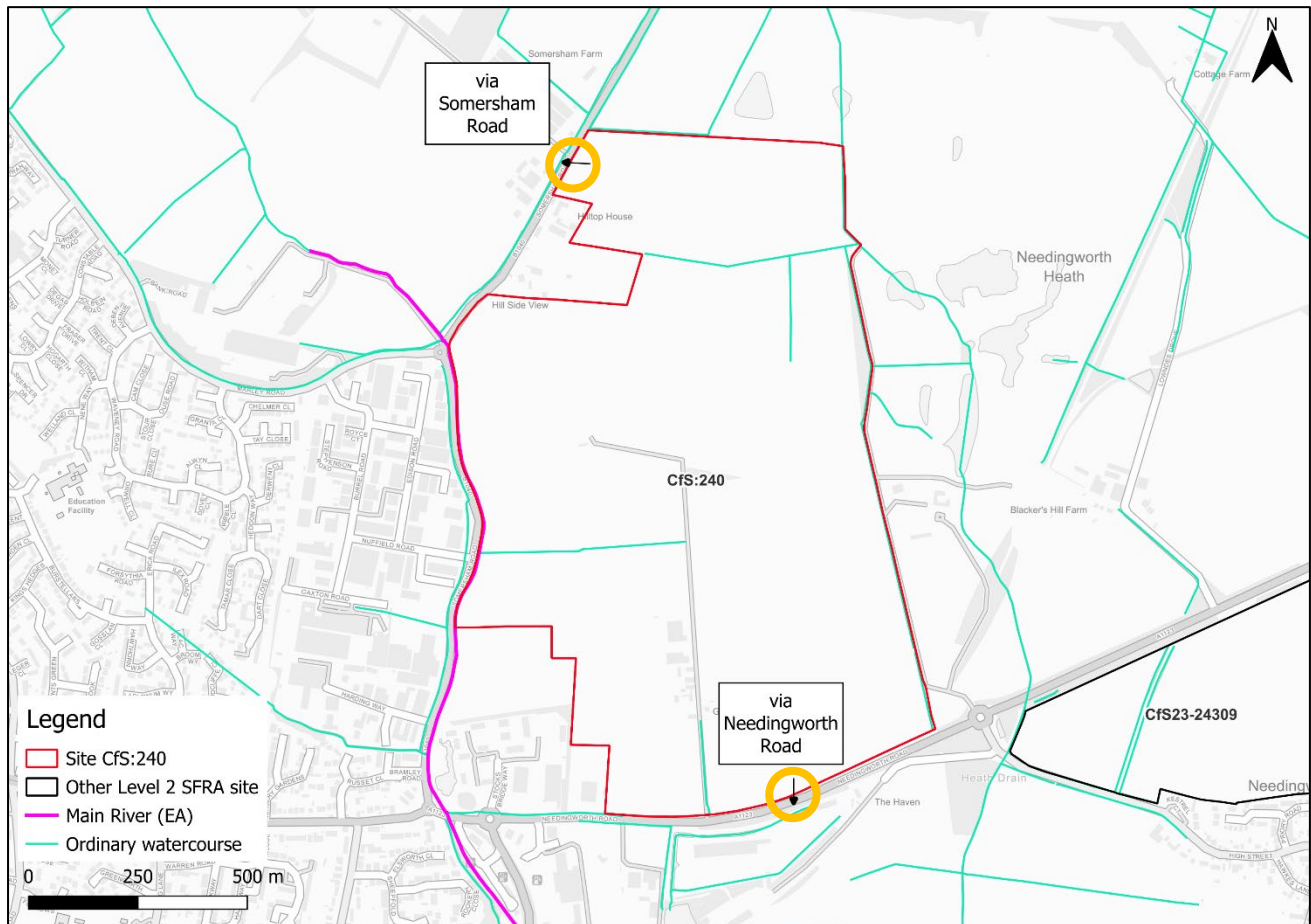


Figure 2-18: Potential access and escape routes

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

- Observations:
 - The site is partially located within fluvial Flood Zone 3a and therefore must be subject to the exception test.
 - Local detailed modelling of the Heath Drain shows that the flood risk from the Heath Drain remains fairly localised to the Heath Drain, only impacting the western site boundary. However, Flood Zones 3a and 2 are vastly different to the equivalent model outputs for reasons unknown at this stage. This risk is not modelled to increase with climate change. It is therefore recommended that all development avoids the 1% AEP event flood extent in the west. If development and access routes cannot be fully sited outside of this event extent, then the exception test cannot be passed.
 - The area of functional floodplain onsite should remain undeveloped and left as open greenspace offering multifunctional benefits.
 - The extent of fluvial risk from the unmodelled ordinary watercourses is currently unknown. Using the 0.1% AEP surface water event as a proxy, risk is modelled to remain largely confined to the areas immediately surrounding the watercourses in the north and west.

- Mitigation:
 - All risk areas should be left as open greenspace. This should be achievable given the large size of the site.
 - The EA should be consulted on why the modelled information is not reflected in the Flood Map for Planning. It is assumed the Flood Map for Planning is based on the New National Model, therefore depth and hazard information is unavailable. This information must be sought and confirmed in the FRA.
 - The site-specific FRA should investigate risk from the unmodelled ordinary watercourses to fully understand the onsite fluvial risk
 - Were development of this site to proceed, given the proximity of this site to neighbouring sites CfS23-24309 and CfS:185, 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.
 - The ordinary watercourses should be included within the site design and layout. Infilling of drainage ditches should be avoided.
 - If works are proposed on or near a river or flood defence, a separate permission may be required. The type of permission needed and whether it must be sought from the Environment Agency, Lead Local Flood Authority or Internal Drainage Board will depend on the activity and location proposed.
- Access and escape:
 - Safe access and escape routes must be available at times of flood and appear to be available from the south of the site via Needingworth Road and from the northwest of the site via Somersham Road. 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 surface water risk and 8% at low surface water risk.

Surface water risk is predominantly located in the north, west and 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	8	4	8

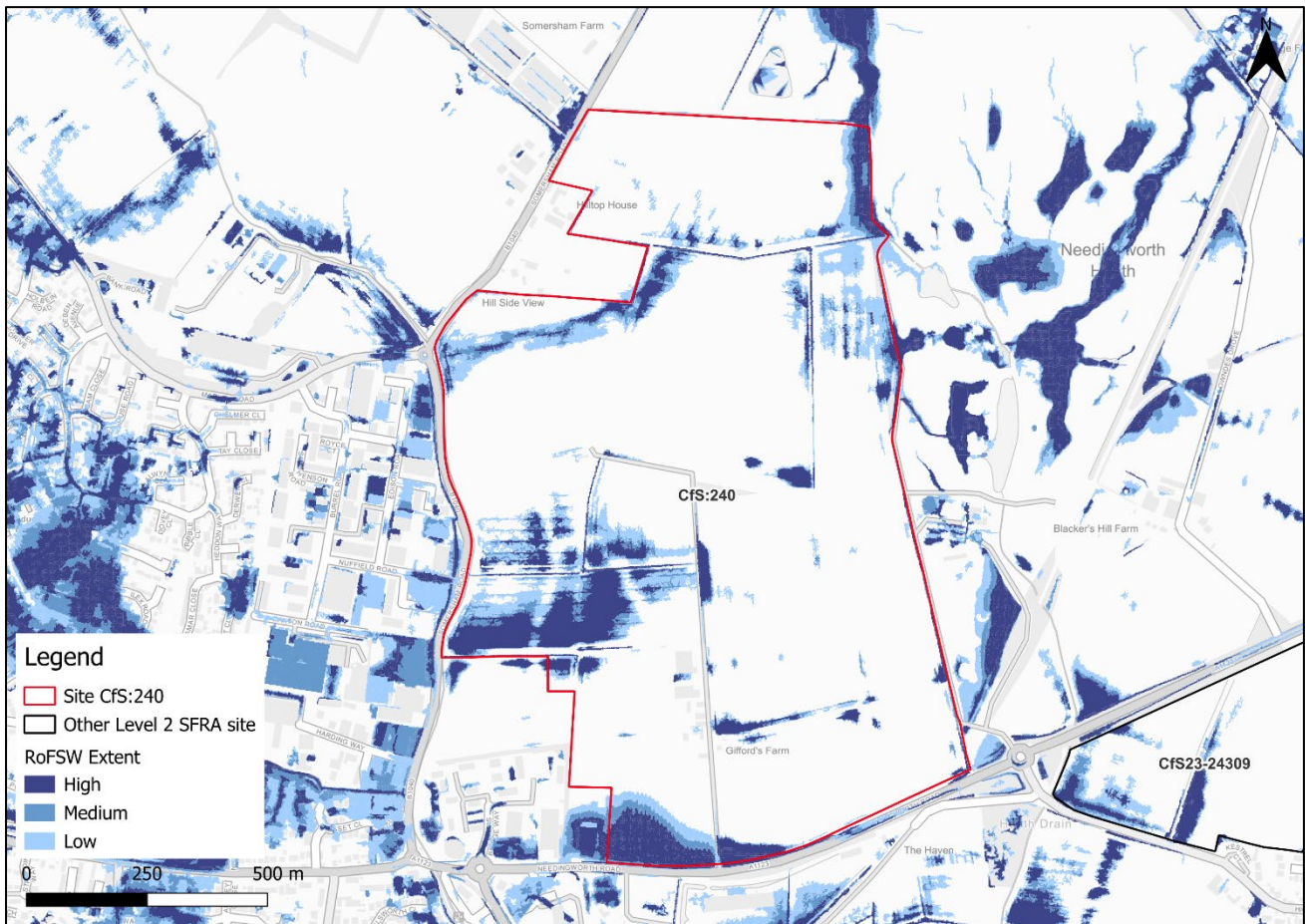


Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

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, flood depths are predicted to remain predominantly below 0.6m, with normal areas in the southwest predicted to reach up to 0.9m in depth (Figure 3-2). Flooding is predicted to be mostly a moderate or significant hazard (Figure 3-3).

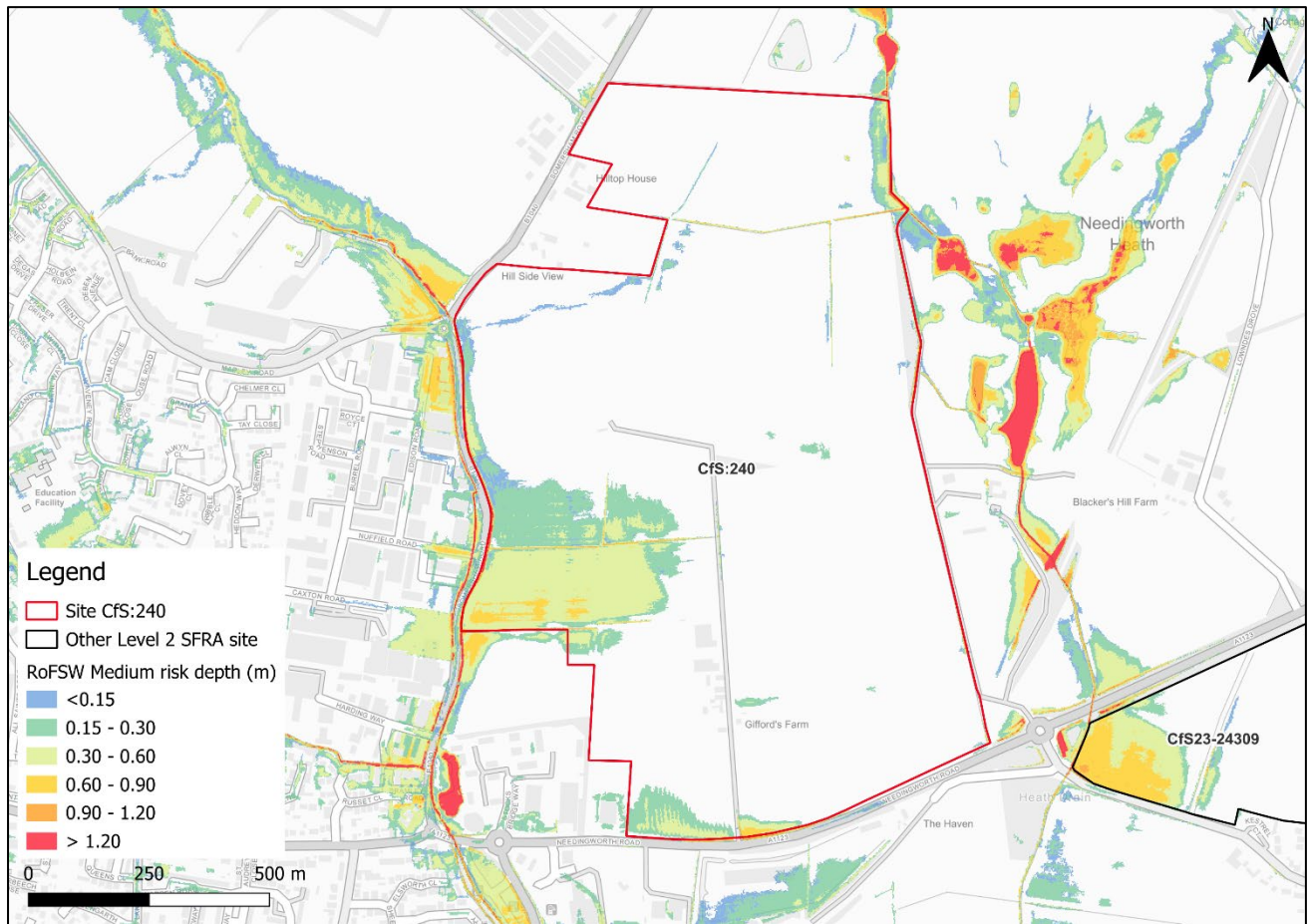


Figure 3-2: Medium risk event surface water flood depths (Third generation - Risk of Flooding from Surface Water map)

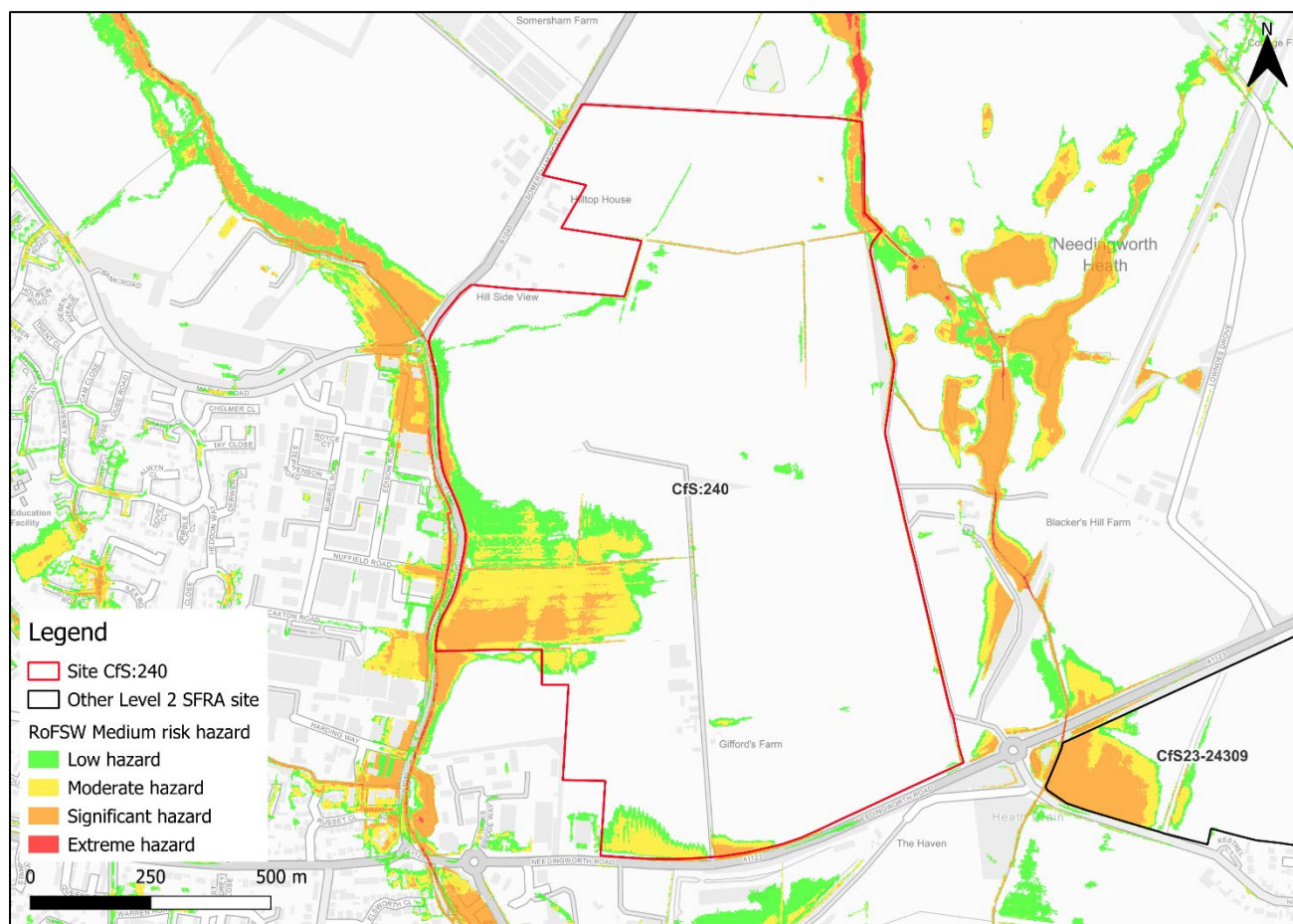


Figure 3-3: Medium risk event surface water flood hazard³ (Third generation - Risk of Flooding from Surface Water map)

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, flooding is predicted to remain similar to the medium risk event, with larger areas of flooding predicted in the north, west and south of the site (Figure 3-4). Flooding is now predicted to reach up to 1.2m in depth (Figure 3-5) in the west of the site and pose predominantly a significant hazard throughout (Figure 3-6). Flooding is also predicted to pose an extreme hazard in the northeast and west of the site in small areas.

³ 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

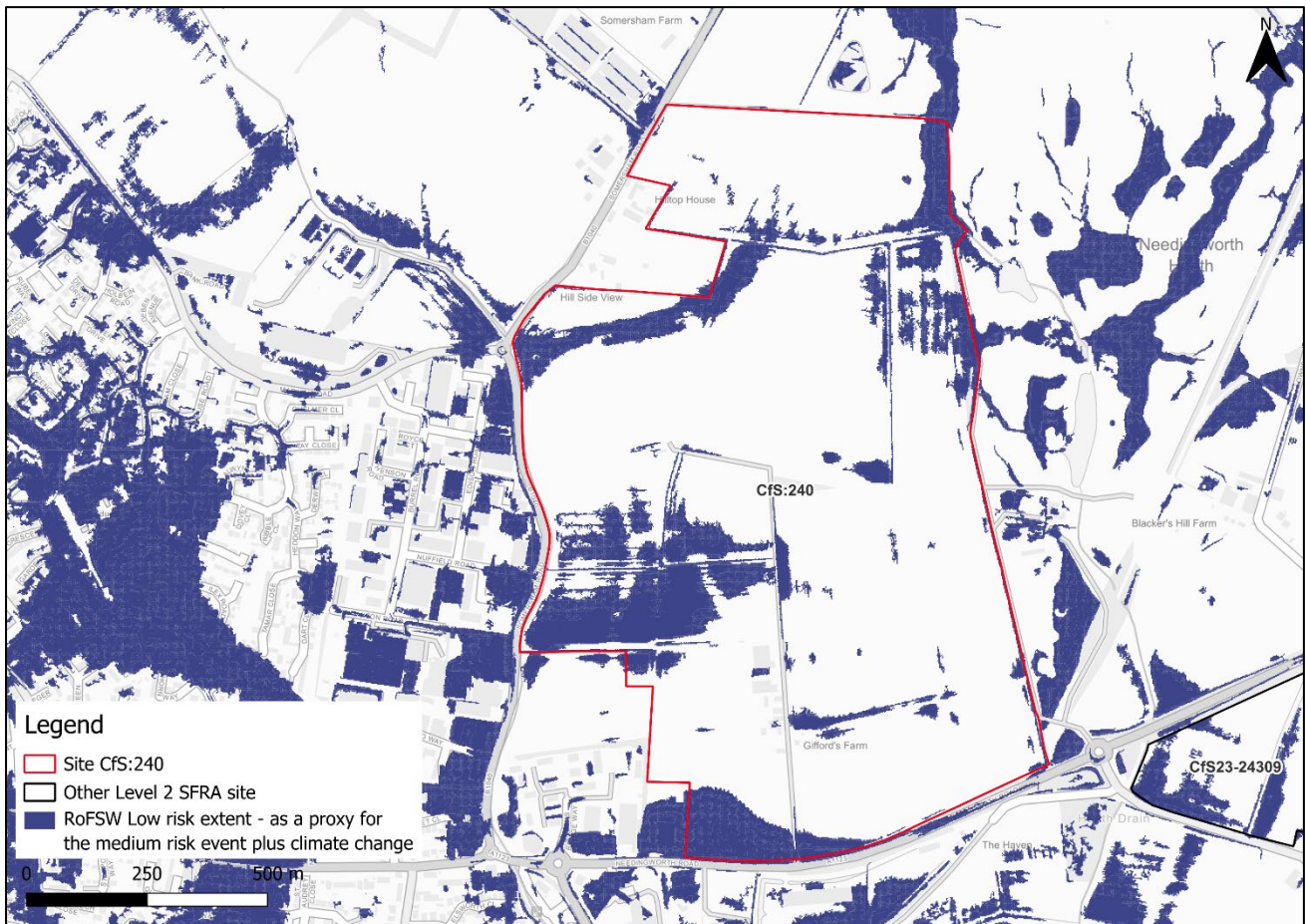


Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

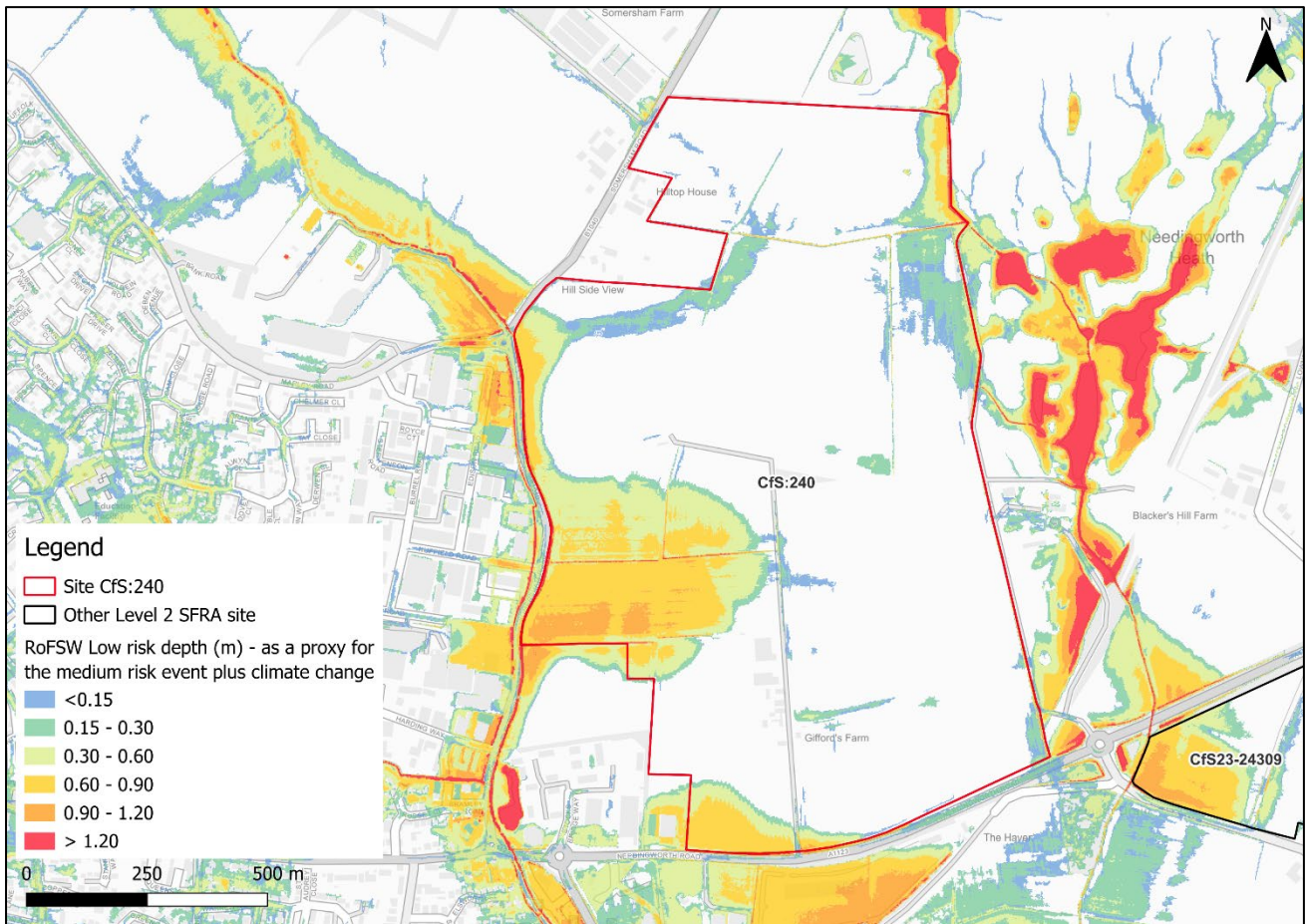


Figure 3-5: Low risk event surface water flood depths, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

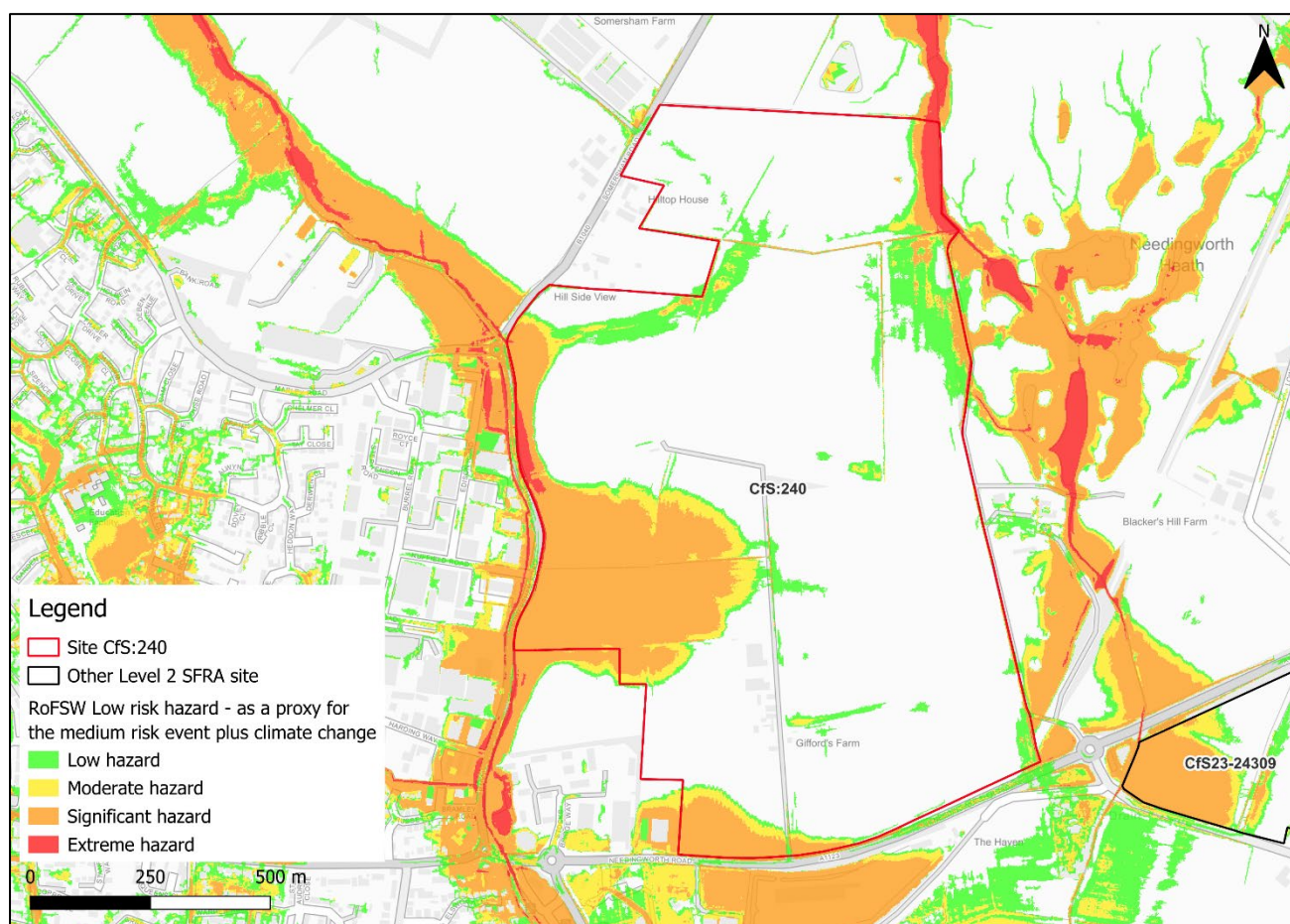


Figure 3-6: Low risk event surface water flood hazard, as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

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 mostly confined to the north, west and south 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 largely similar to the medium risk event, with a greater extent of ponding.
- 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 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 main areas of risk along the ordinary watercourses in the west, northeast and south should be left free of development and used as blue green corridors which can provide multiple benefits alongside flood risk, including ecological, social and amenity benefits.
- Topographic low spots and flow paths should be incorporated into site design and layout.
- 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.
- The LLFA agree with these recommendations and would add that safe access and escape should be considered carefully given the higher risk of surface water flooding on the north west and south boundaries of the site.

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 Marley Gap Brook 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 Guide⁴. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

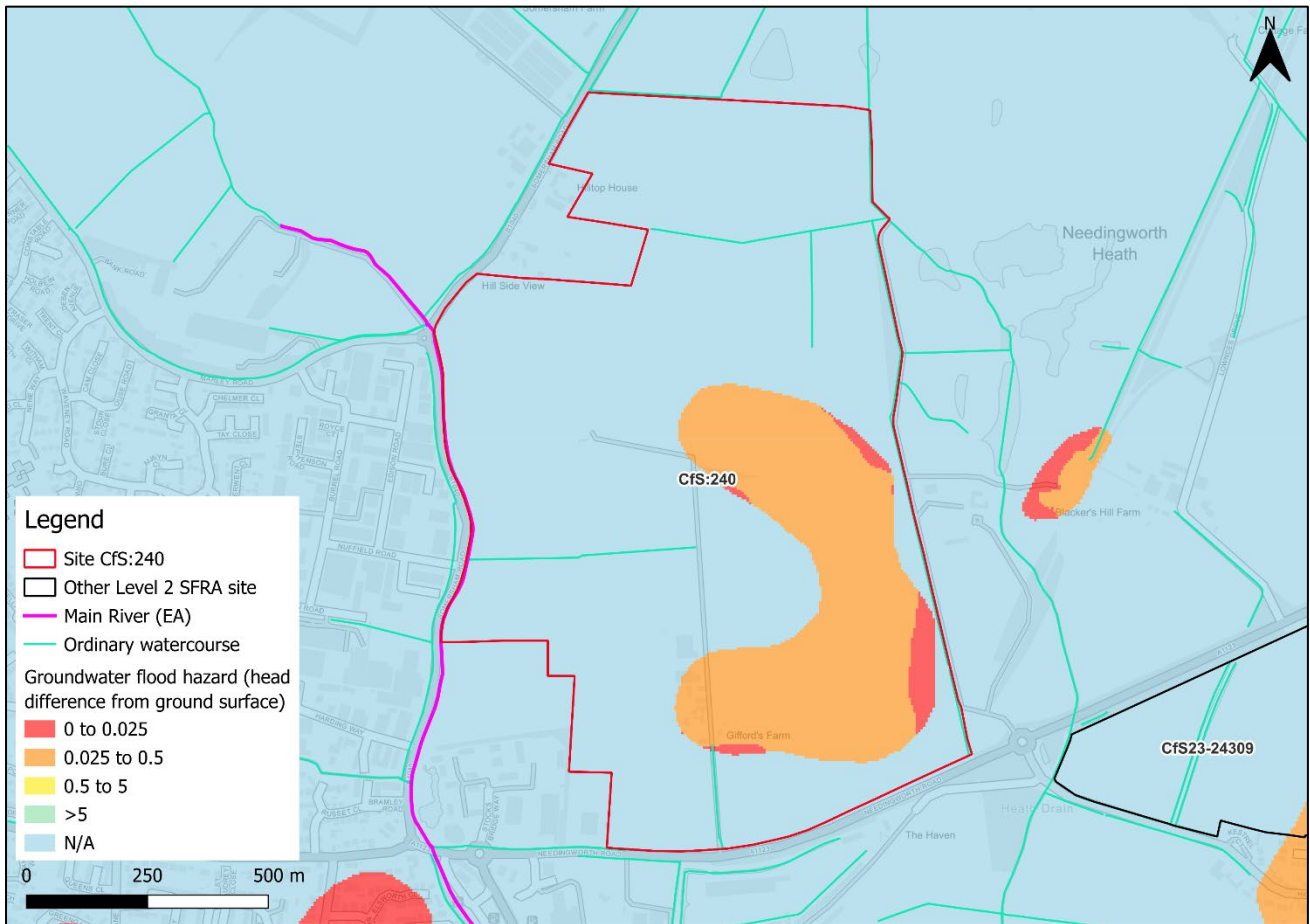


Figure 5-1: JBA 5m Groundwater Emergence Map

The majority of the site is classified as no risk. Any infiltration SuDS should therefore be suitable for the majority of this site. However, within the southeast of the site, groundwater levels are within 0.025m and 0.5m of the ground surface in the 100-year return period flood event. 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. Infiltration SuDS in these areas are therefore unlikely to be appropriate. Ground survey and percolation testing in wet and dry weather conditions may be required in this area to confirm conditions.

4 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.	

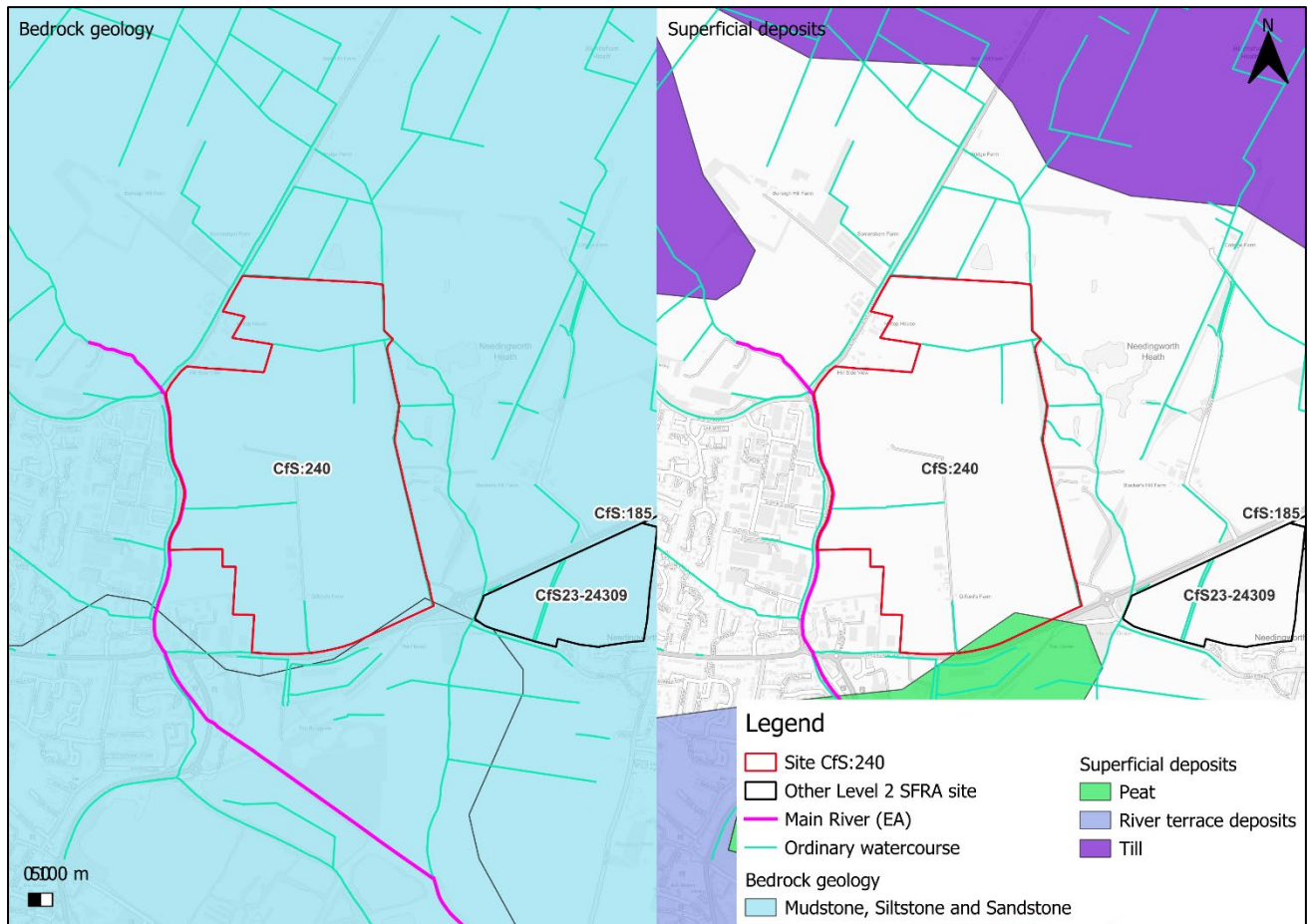


Figure 5-2: Soils and geology

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.

Residual risk at this site comes from the potential blockage of the structure beneath Needingworth Road to the southeast of the site.

6.1 Potential blockage

A blockage of the culverts beneath Needingworth Road to the southeast of the site may cause flooding to the site, depending on the severity of the blockage and the magnitude of the flood event. Such a scenario should be investigated at the FRA stage. Culvert course and condition surveys may be required, including for consultation with the culvert owner.

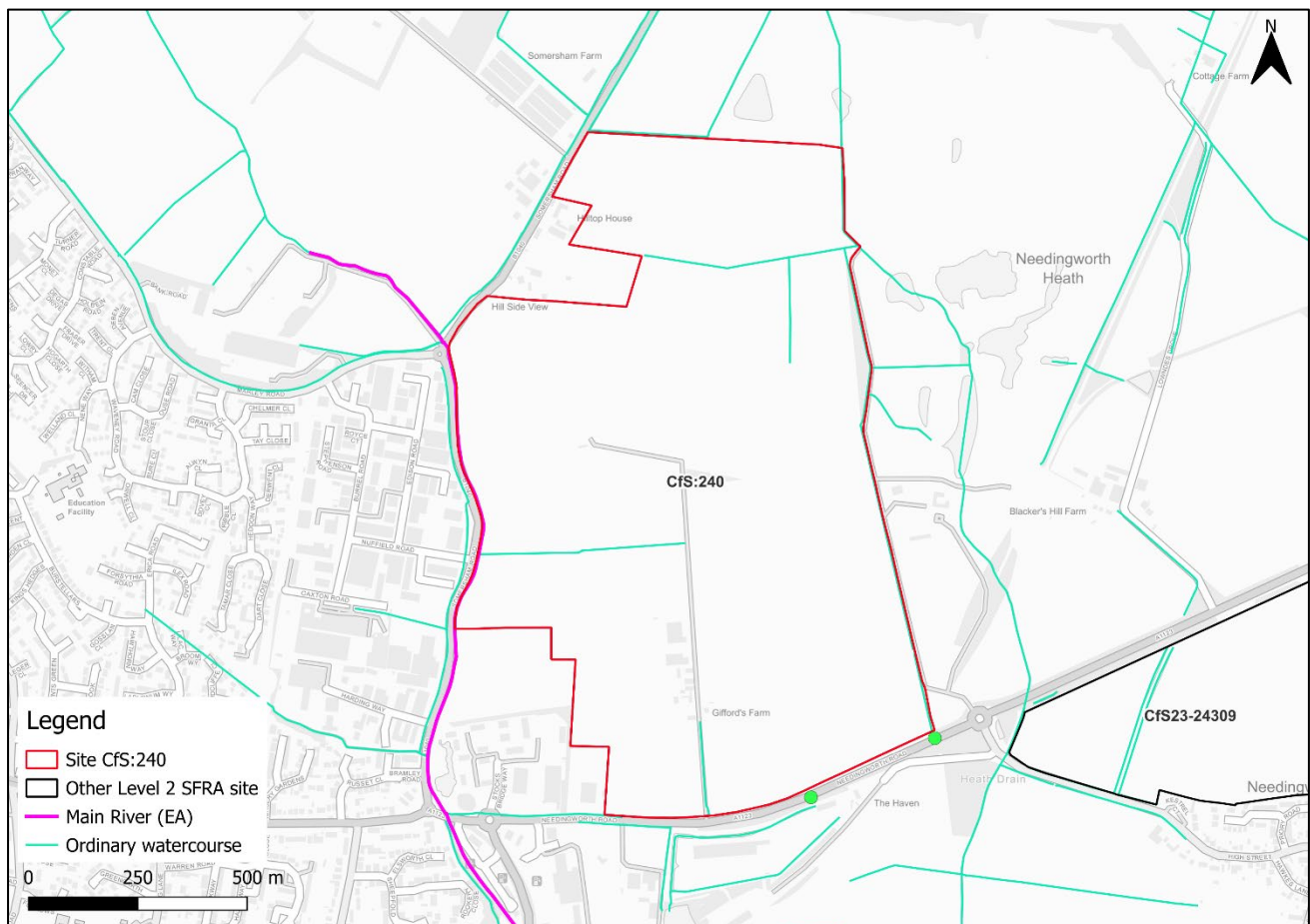


Figure 6-1: Potential blockage

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 6-2 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.

A small proportion of the site is potentially at risk from flooding from Grafham Water reservoir during the 'wet day' scenario which is situated within the Cambridgeshire LLFA. Anglian Water Services Ltd is the undertaker for this reservoir.

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.

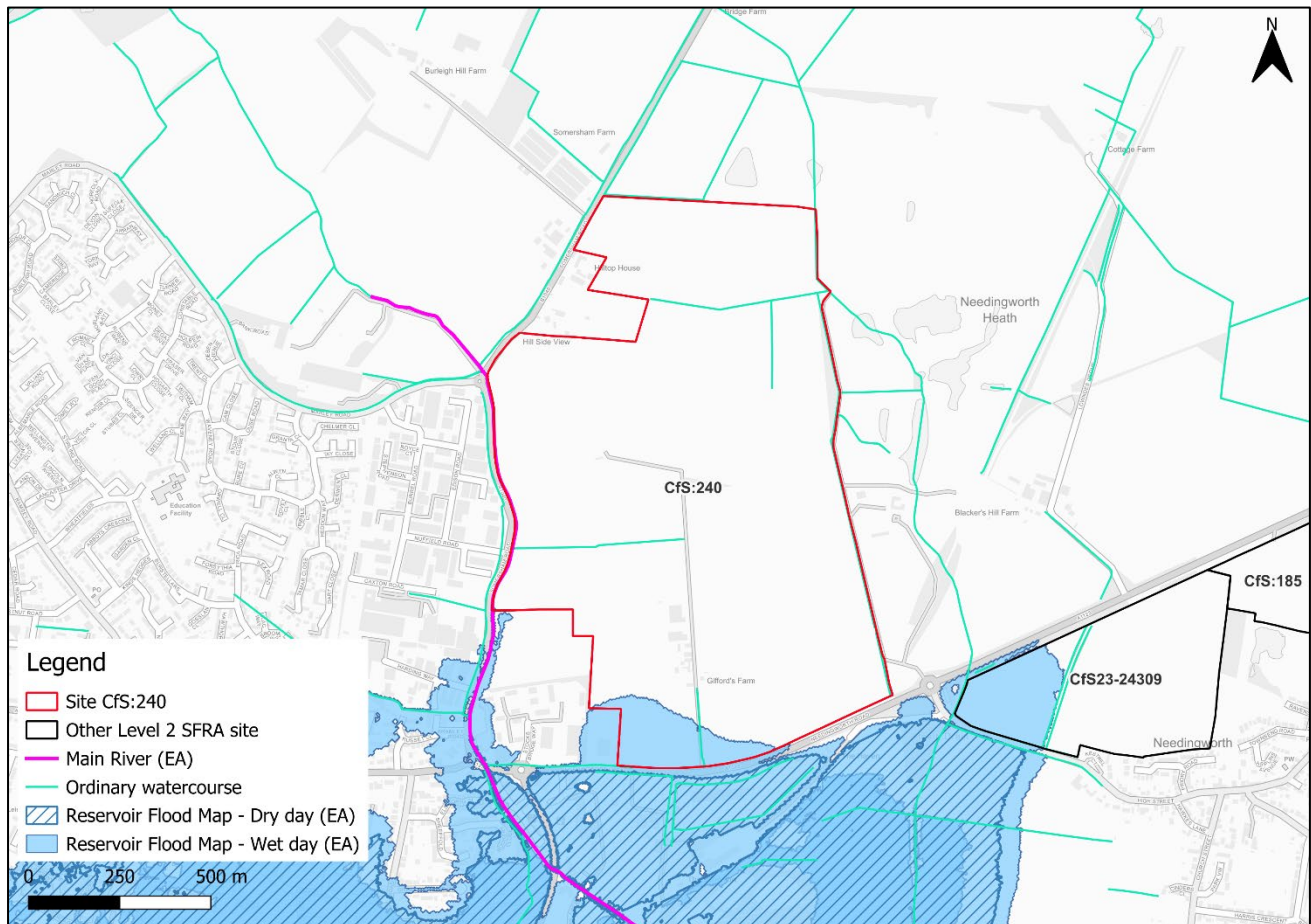


Figure 6-2: EA Reservoir Flood Map

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 fluvial risk areas remain as open greenspace and safe access routes can be established. 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:

- The fluvial risk area should be left undeveloped and remain as open greenspace.
- Modelled risk from Heath Drain should be confirmed. Consultation with the EA is required.
- Risk from the ordinary watercourses should be investigated at the FRA stage. Modelling may be required.
- 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.
- 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 ordinary watercourses should be included within the site design and layout. Infilling of drainage ditches should be avoided.
- There is potential residual risk to the site from a blockage of the culverts beneath Needingworth Road to the southeast of the site. The reservoir owner should also be consulted on any new development.
- 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 during a flood event.
- Were development of this site to proceed, given the proximity of this site to neighbouring sites CfS23-24309 and CfS:185, 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:

- Modelled risk from Heath Drain should be confirmed. Consultation with the EA is required.
- Risk from the ordinary watercourses should be investigated at the FRA stage. Modelling may be required.
- 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.
- Condition assessments of the drain adjacent to the western site boundary and investigate the impact of a potential blockage of the structures.
- 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

