2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 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. The Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

The site is partially within the functional floodplain due to risk from Blockley Brook, which borders the southeastern boundary of the site. The majority of the site is within Flood Zone 1 and therefore at low risk from rivers and the sea. The functional floodplain in this location is based on the EA's New National Model (NNM) dataset 'Rivers and Sea 3.3% defended flood risk extents - present day'.

Table 2-1: Present day 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)
95	2	1	2

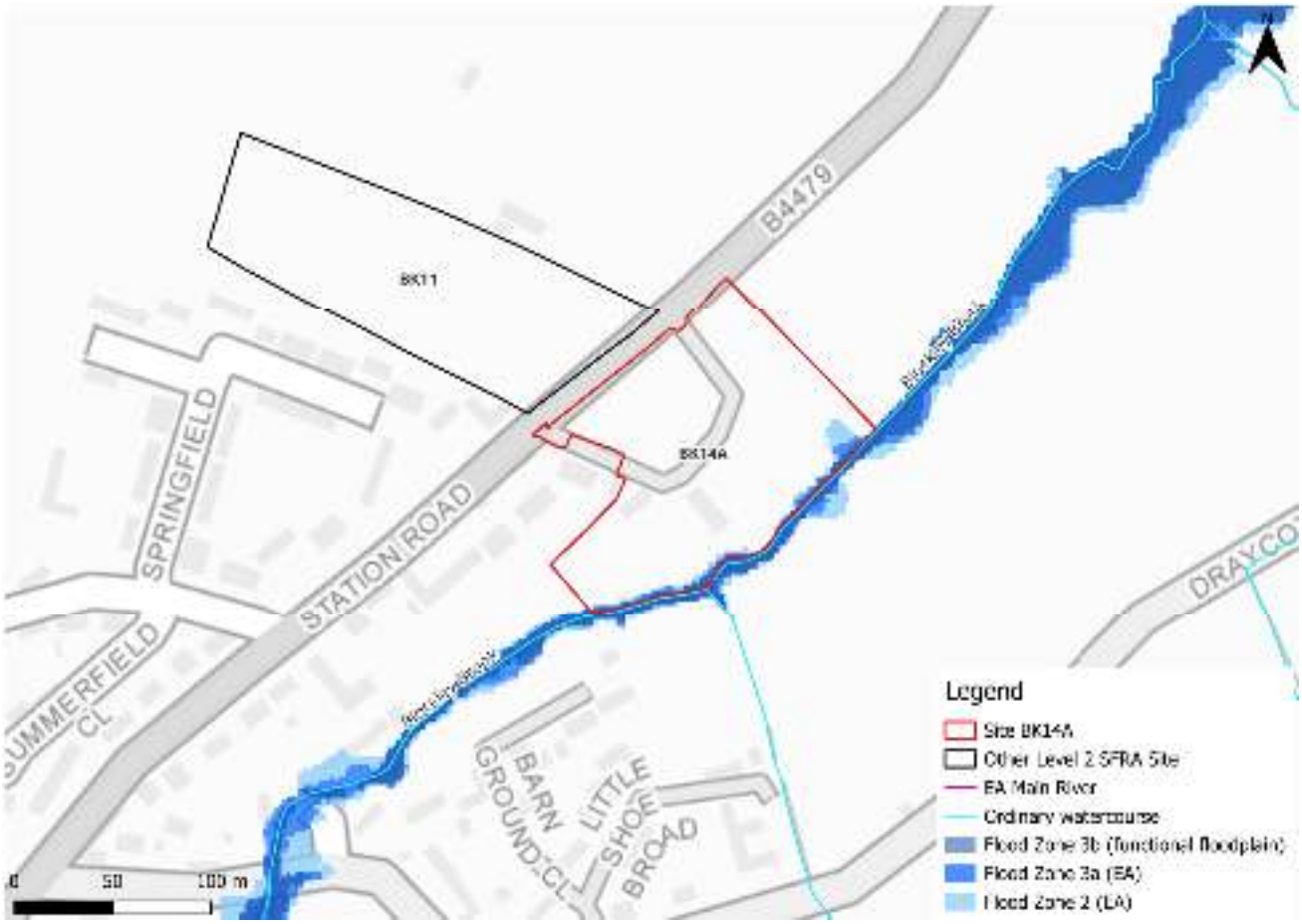

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Avon Warwickshire Management Catchment. The central allowance within this catchment is 21% on peak flows (Table 2-2). There is no local detailed model for Blockley Brook therefore the required event cannot be assessed.

Table 2-2: Modelled climate change allowances for peak river flows within the Avon Warwickshire Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	7	12	22
2050s	8	14	31
2080s	21	32	59

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of climate change on Flood Zone 3a and Flood Zone 2 combined.

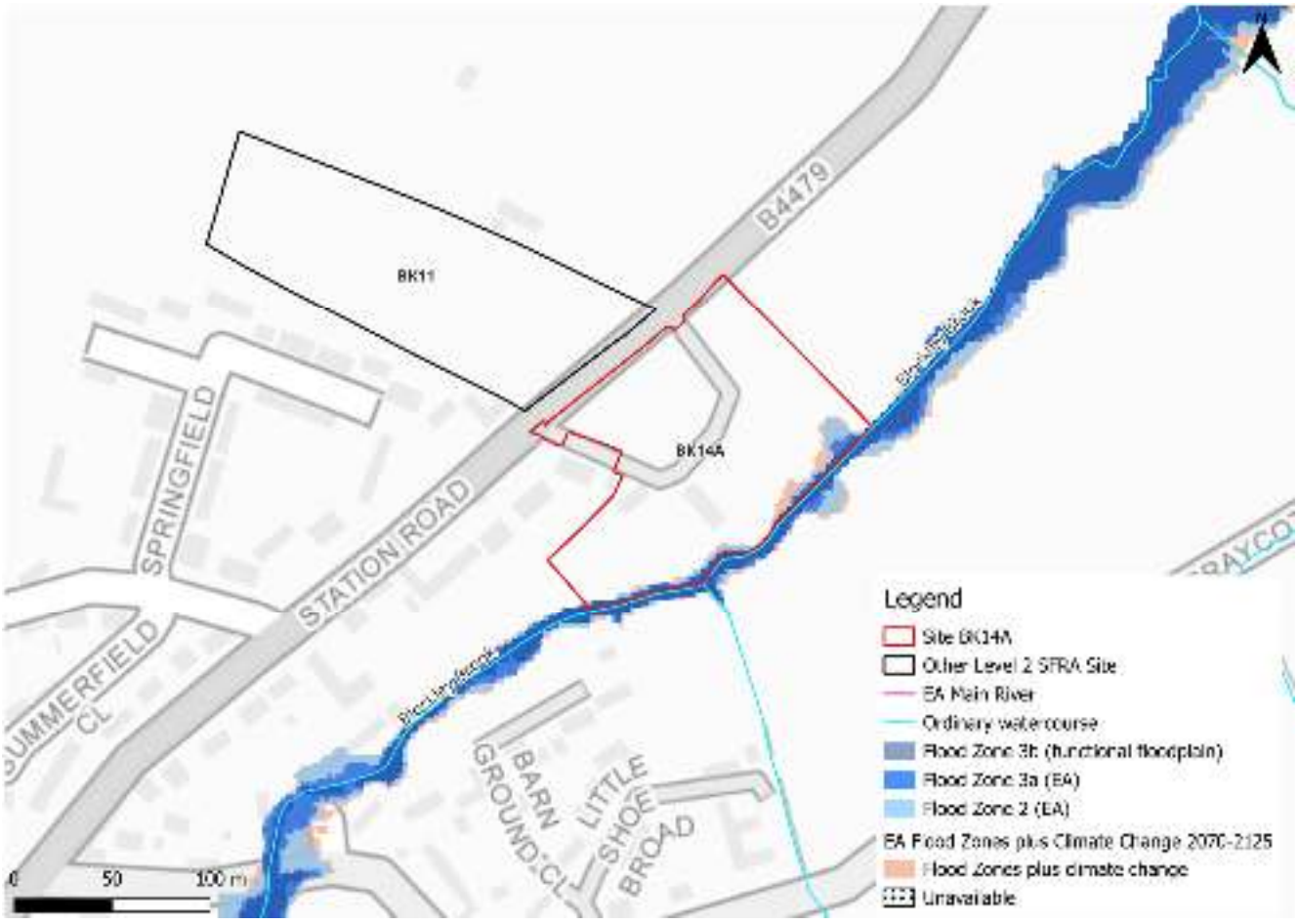

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There are no recorded flooding incidents within the Blockley Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-3 shows that the site and wider area could benefit from riparian and floodplain tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

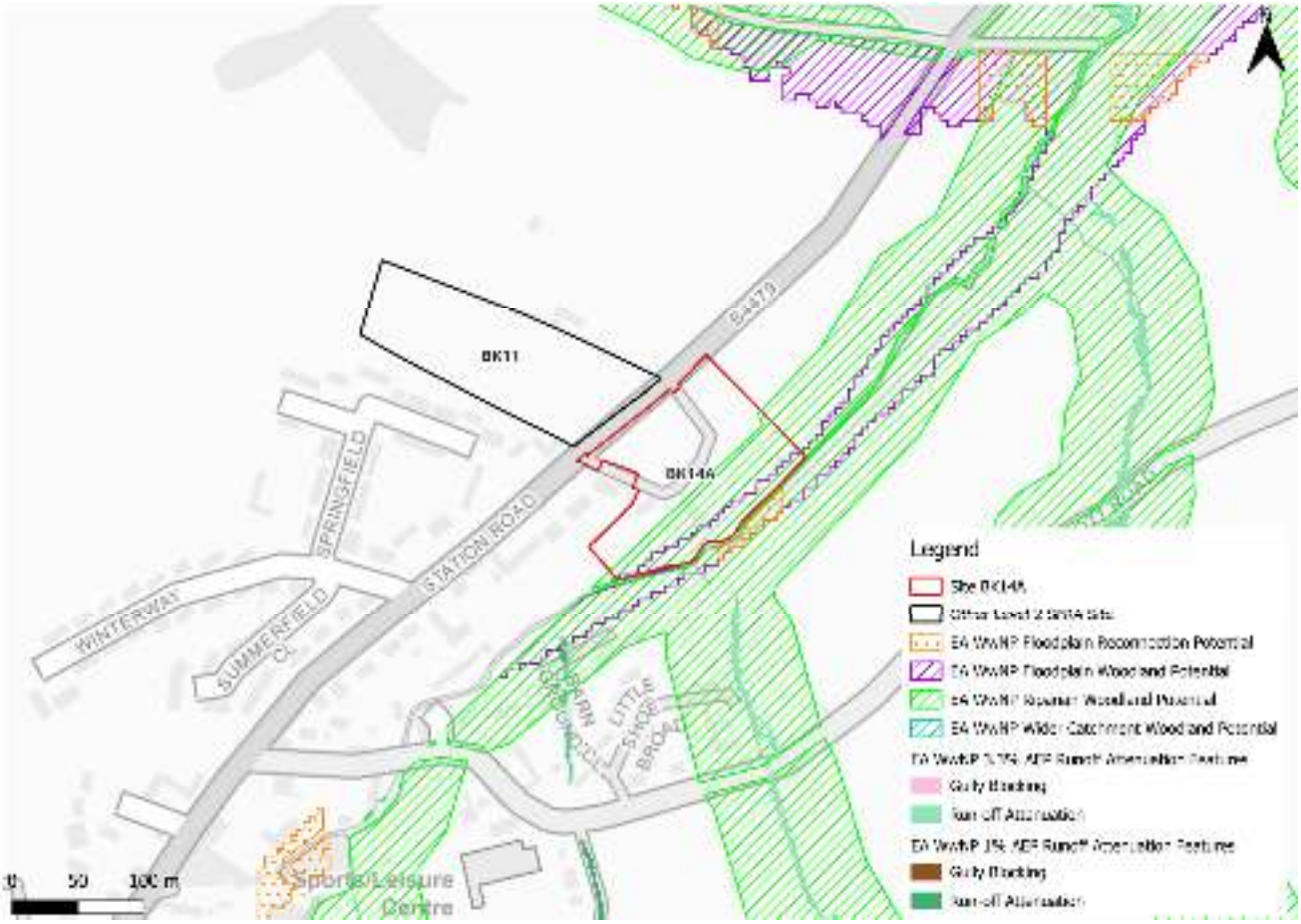

Figure 2-3: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warnings and alerts

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 floodplain of Blockley Brook is located within a FAA, namely the 'River Stour in South Warwickshire' FAA.

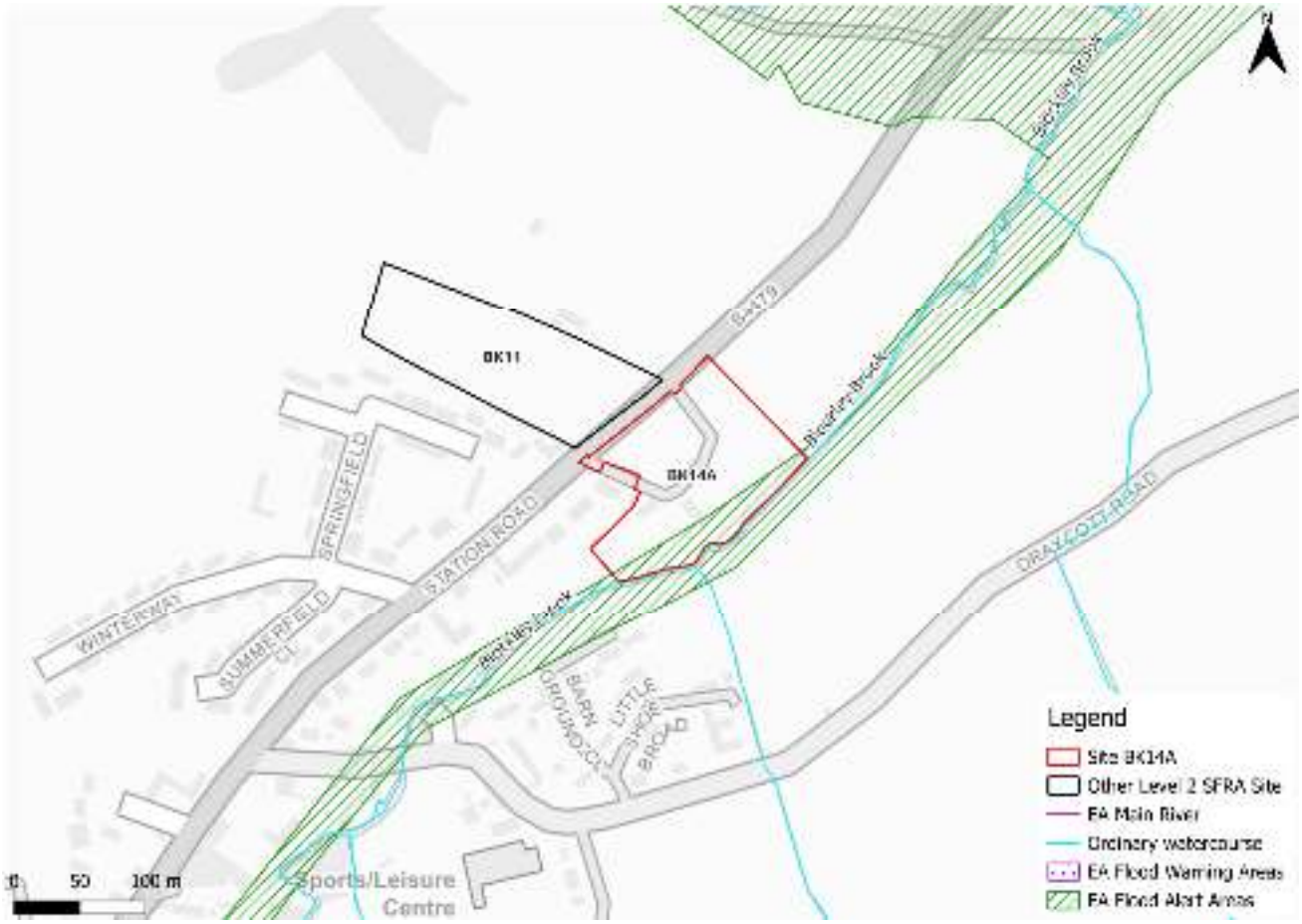

Figure 2-4: Flood warnings and alerts

2.5.2 Access and escape routes

Based on the Flood Map for Planning, safe access and escape routes are available during a flood event via existing routes to Station Road (Figure 2-5).

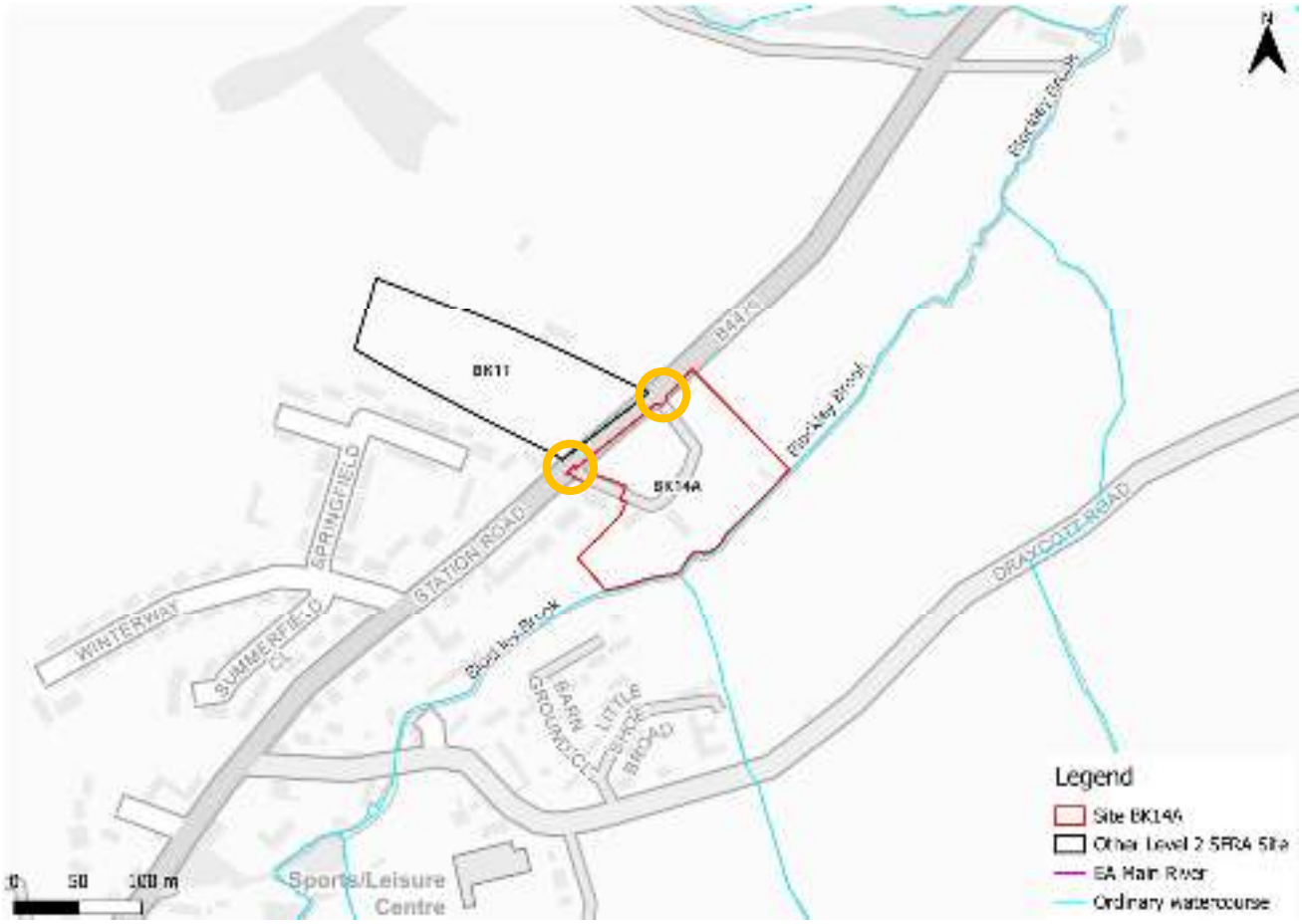

Figure 2-5: Potential access and escape routes

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

- Observations:
  - The site borders Blockley Brook ordinary watercourse. However, most of the site is located within Flood Zone 1 and outside of the Flood Map for Planning climate change extent and therefore mainly at low risk from rivers.
  - The risk from Blockley Brook is based on the EA's NNM and not detailed modelling which is considered to be the most up to date information on fluvial risk to the site and surrounding area. However, the NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
- Mitigation:
  - A no development buffer should be in place along the floodplain of Blockley Brook in the form of a blue green corridor, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits. All development should be directed to Flood Zone 1 outside of the climate change risk area.

- The EA may expect detailed modelling of Blockley Brook to be carried out at the site-specific FRA stage to robustly inform on present day and future risk to the site.
- EA flood warnings and alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.

- Access and escape:
  - Based on current information, safe access and escape routes are available.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extent map (May 2026), the site is at nominal risk of surface water flooding as shown in Table 3-1 and Figure 3-1 and also the depth map in Figure 3-2.

Safe access and escape routes are achievable via Station Road.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
98	2	0	0

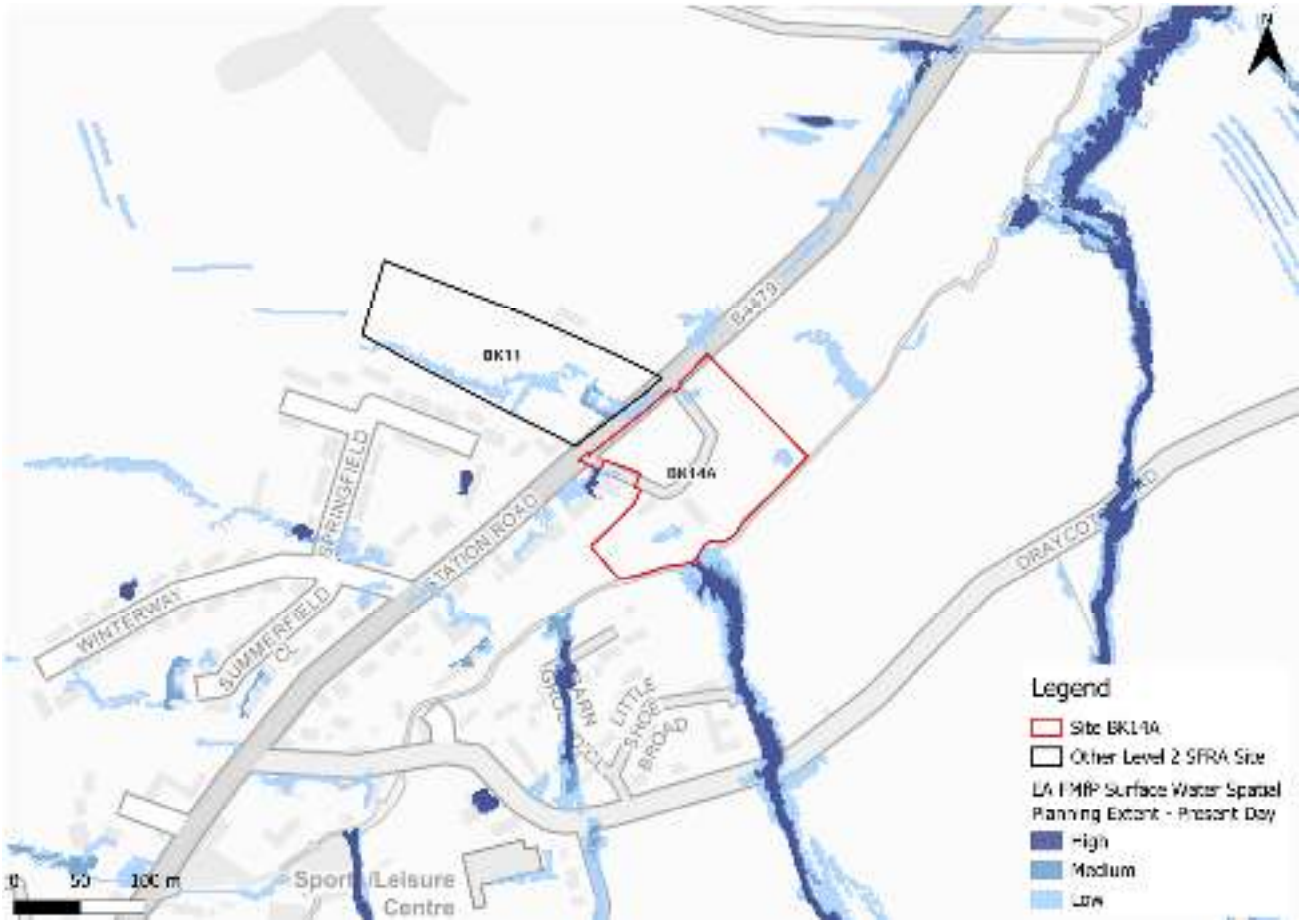

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

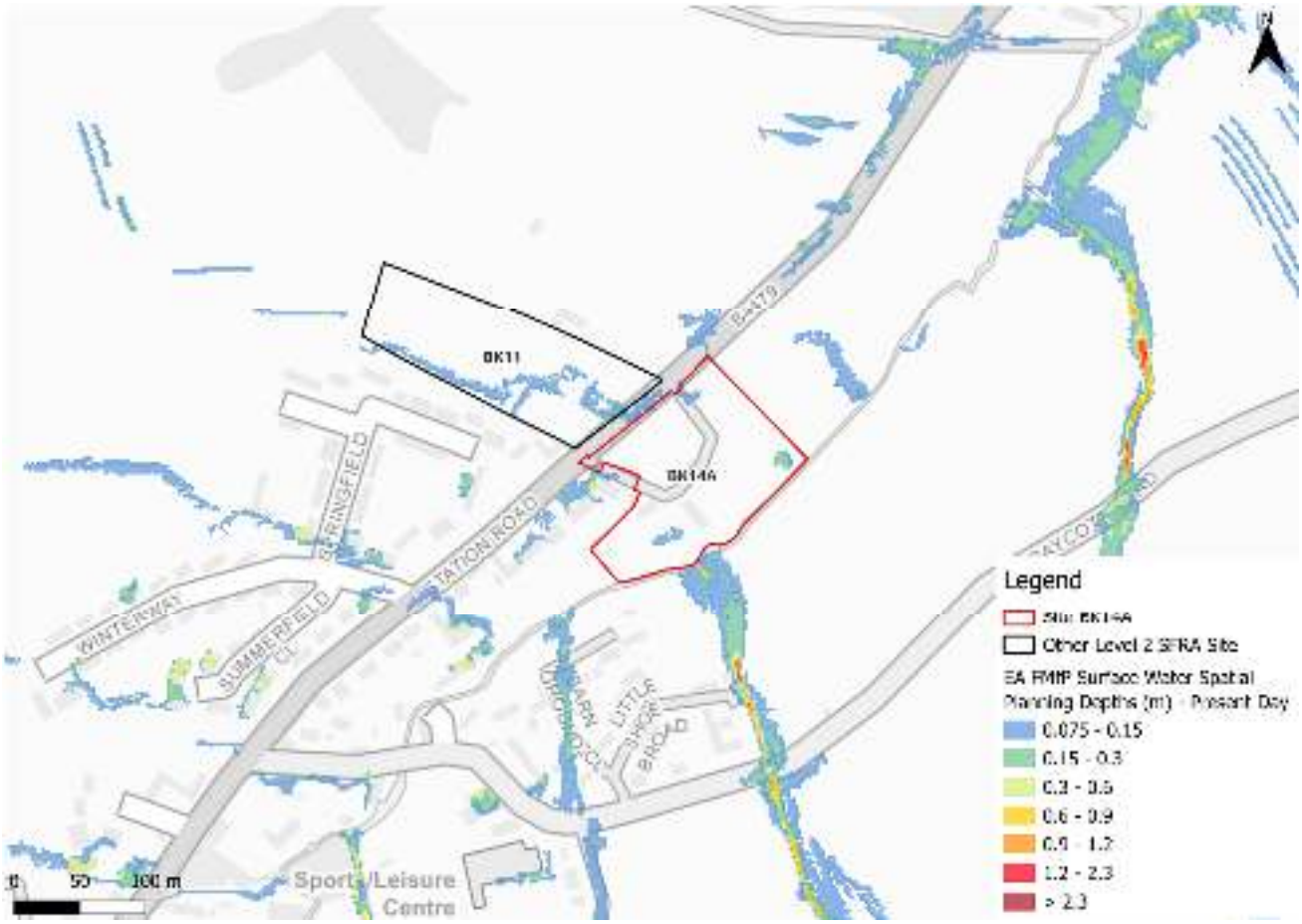

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 0.1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows there to be a extreme flood hazard along the channel of Blockley Brook which should be contained within the recommended blue green corridor. Access via Station Road is low hazard and therefore should remain a viable route (Figure 3-3). There are differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping. However, updated surface water hazard information should be confirmed at the site-specific FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

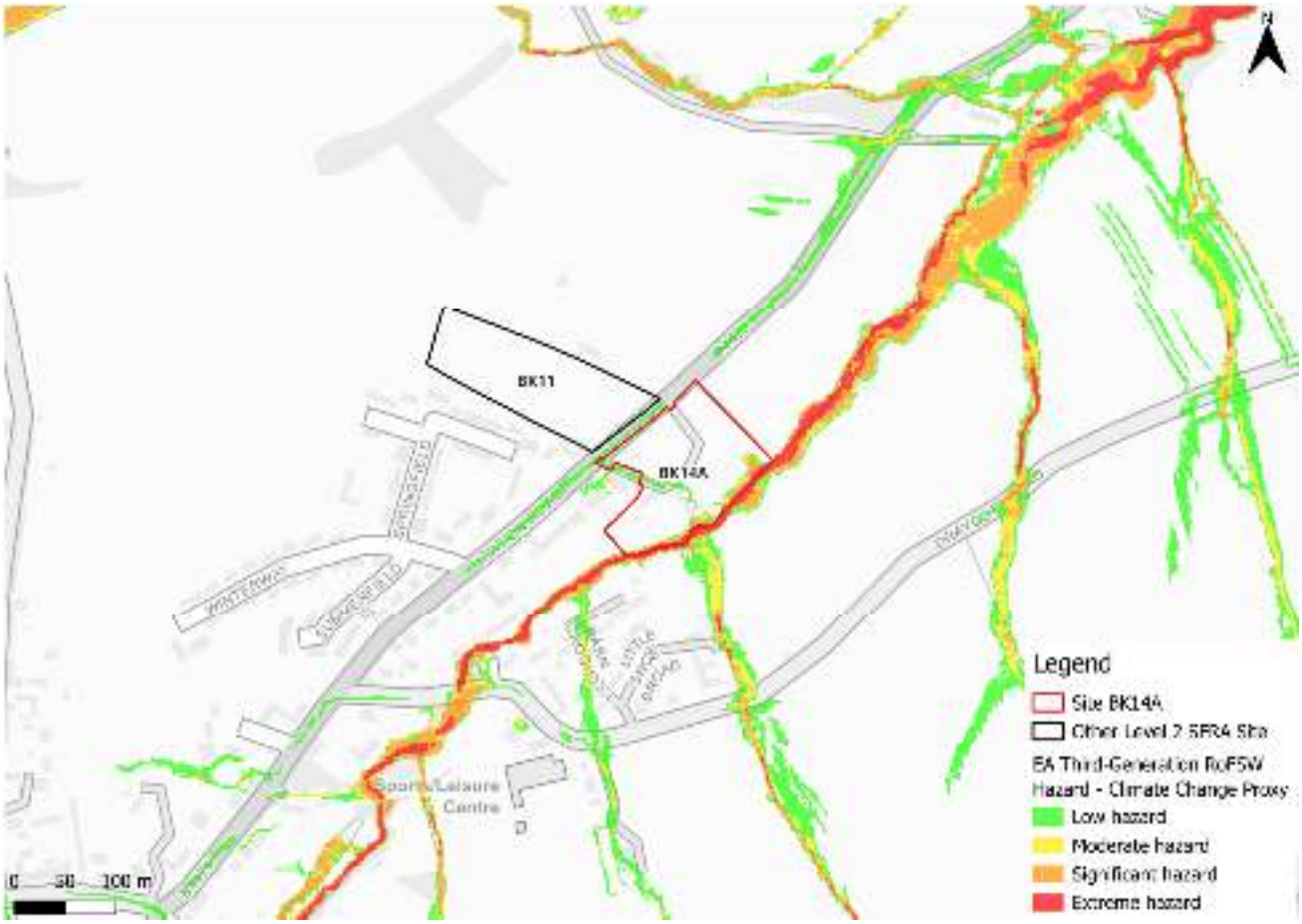

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day low risk surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRAs should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is now included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Avon Warwickshire management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Avon Warwickshire Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. The site is not shown to be at significant additional risk from surface water climate change.

Flood depths are shallow, not exceeding 0.3m (Figure 3-5).

Safe access and escape routes would likely remain achievable via Station Road.

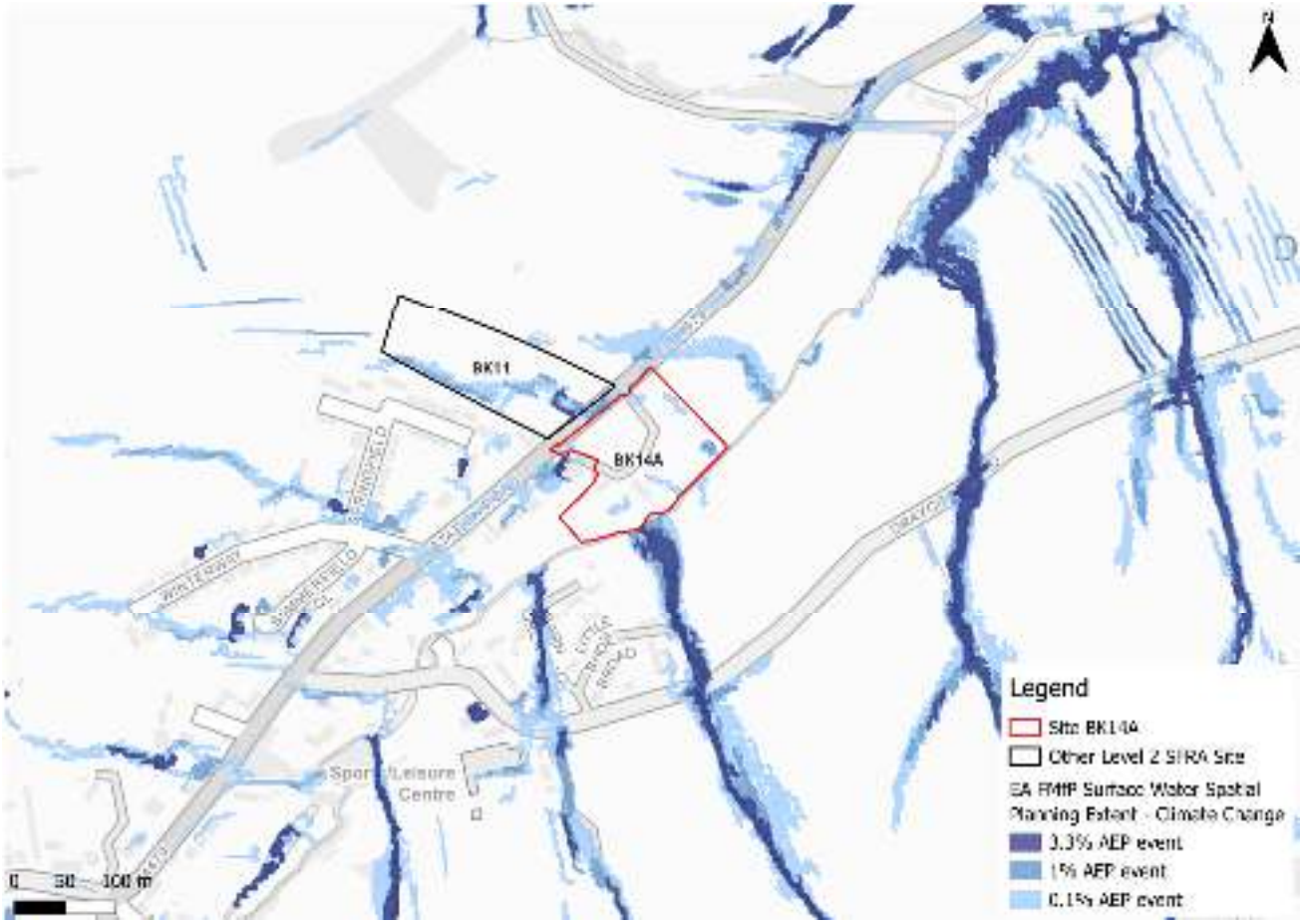

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

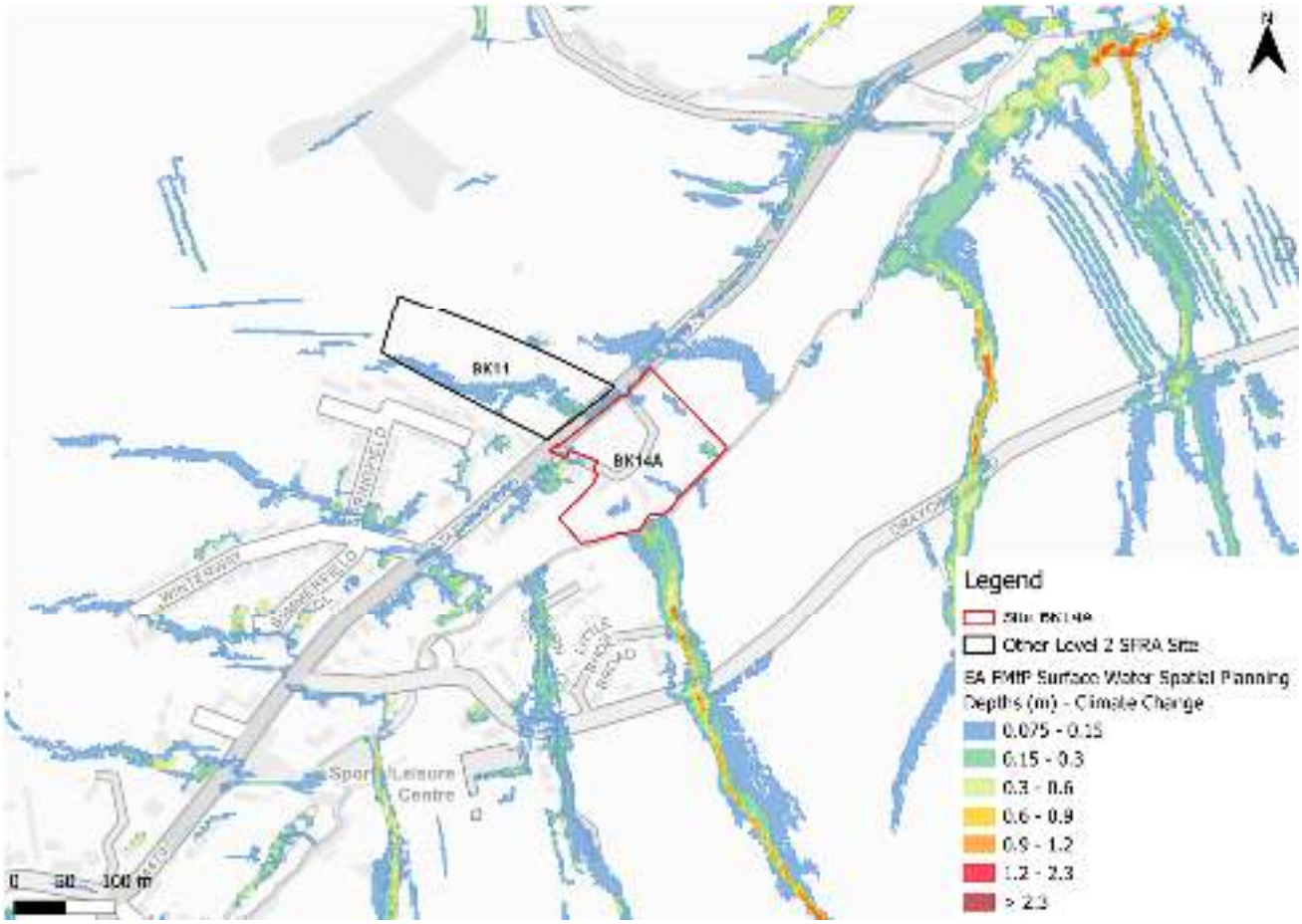

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 0.1% AEP event flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is mainly categorised as low, assuming the fluvial and surface water risk areas along Blockley Brook are included within the recommended blue green corridor (Figure 3-3).

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There is one recorded sewer flooding incidents within the Blockley Ward.

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

- Current risk to the site is predominantly low, with 98% of the site being outside of the 0.1% AEP surface water flood extent.
- Risk to the site is shown to slightly increase in extent within the site when considering the impact of climate change.
- Topographic low spots and flow paths should be considered and included in site design and ideally left in place to flood naturally when required.
- The drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.
- This site should be considered alongside site BK11 to the north and should provide access for BK11 to discharge surface water to Blockley Brook.
- Safe access and escape routes would likely be achievable via Station Road.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within one catchment, namely, the Blockley Bk - source to conf Knee Bk catchment. This catchment is ranked as a low sensitivity catchment. Planning considerations for all sites can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications. The site is at predominantly at high risk of groundwater emergence. 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.

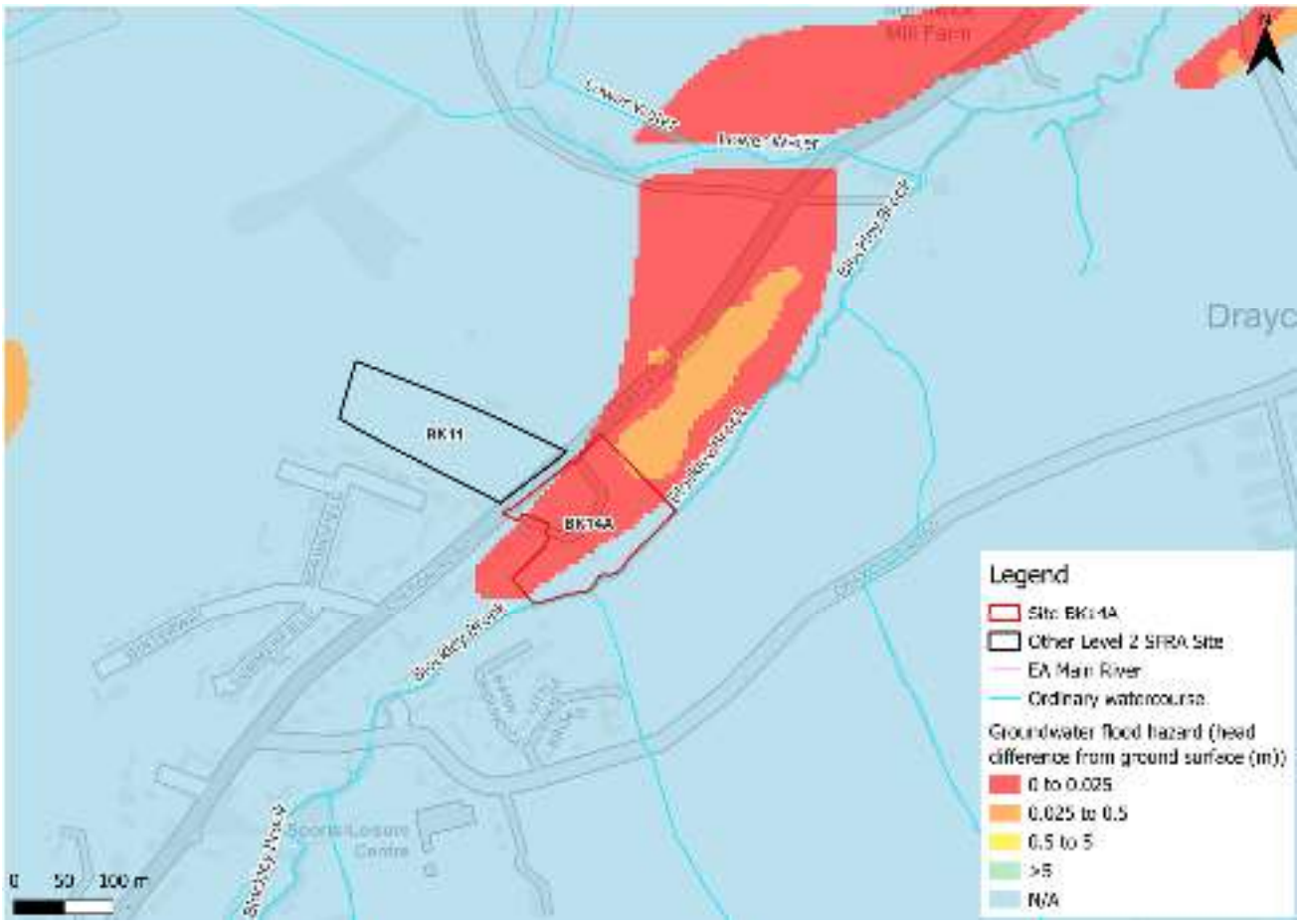

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, limestone and sandstone (Figure 5-2) which will have variable permeability and porosity. Based on the groundwater emergence map, infiltration SuDS at this site may not be an option, though the drainage strategy for the site should fully investigate water table levels through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

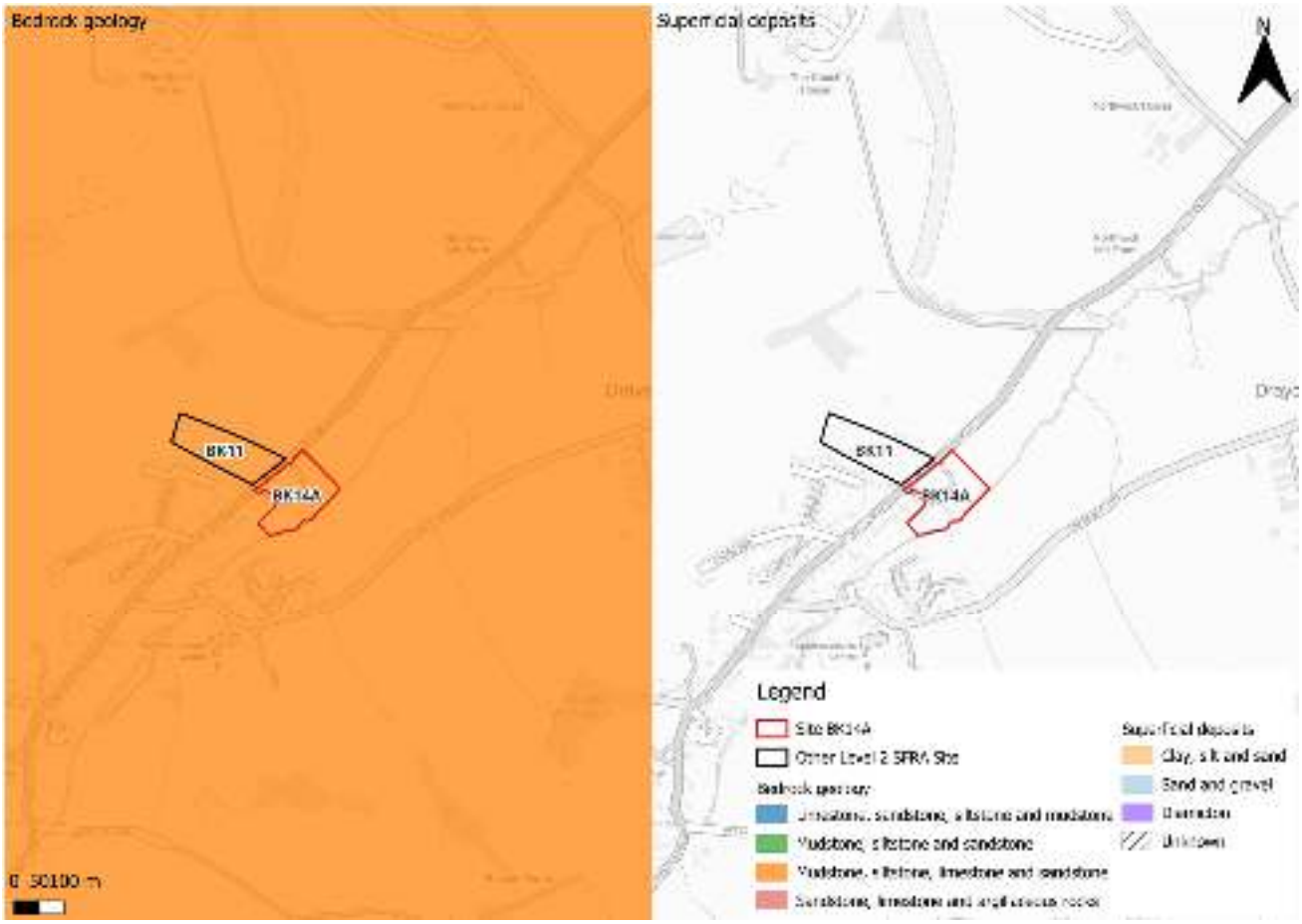

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets.

There is no potential residual risk to the 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. 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 residential development and is partially located within Flood Zone 3a. The risk is confined to the floodplain of Blockley Brook along the southeastern boundary of the site, according to the Flood Map for Planning. It should be possible for this site to pass the Exception Test, based on current information, assuming the risk area of Blockley Brook can be incorporated into site design as a blue green corridor with no development.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- A no development buffer should be in place along the floodplain of Blockley Brook in the form of a blue green corridor, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits.
- All development should be directed to Flood Zone 1 outside of the climate change risk area.
- However, the EA may expect detailed modelling of Blockley Brook to be carried out at the site-specific FRA stage to robustly inform on present day and future risk to the site.
- A drainage strategy should ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply with consideration of local and national SuDS guidance.
- This site should be considered alongside site BK11 to the north and should provide access for BK11 to discharge surface water to Blockley Brook.
- Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Strategic extension to the South and East of Moreton-in-Marsh

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Contract

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JBA Project Code	2025s1921

This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson-Jones 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 June and August 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 for their assistance with this work.

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Contents

List of Figures

List of Tables

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the strategic extension to the South and East of Moreton-in-Marsh site. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Strategic extension to the South and East of Moreton-in-Marsh

- Location: Moreton-in-Marsh (NGR 421795, 232423)
- Existing site use: Agricultural land and buildings
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential led mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 193.6
- Watercourse: River Evenlode, ordinary watercourses
- Environment Agency (EA) flood model: No detailed model available
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of fluvial flood depths, velocities and hazards (detailed modelling not available)
    - Assessment of surface water flood extents, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

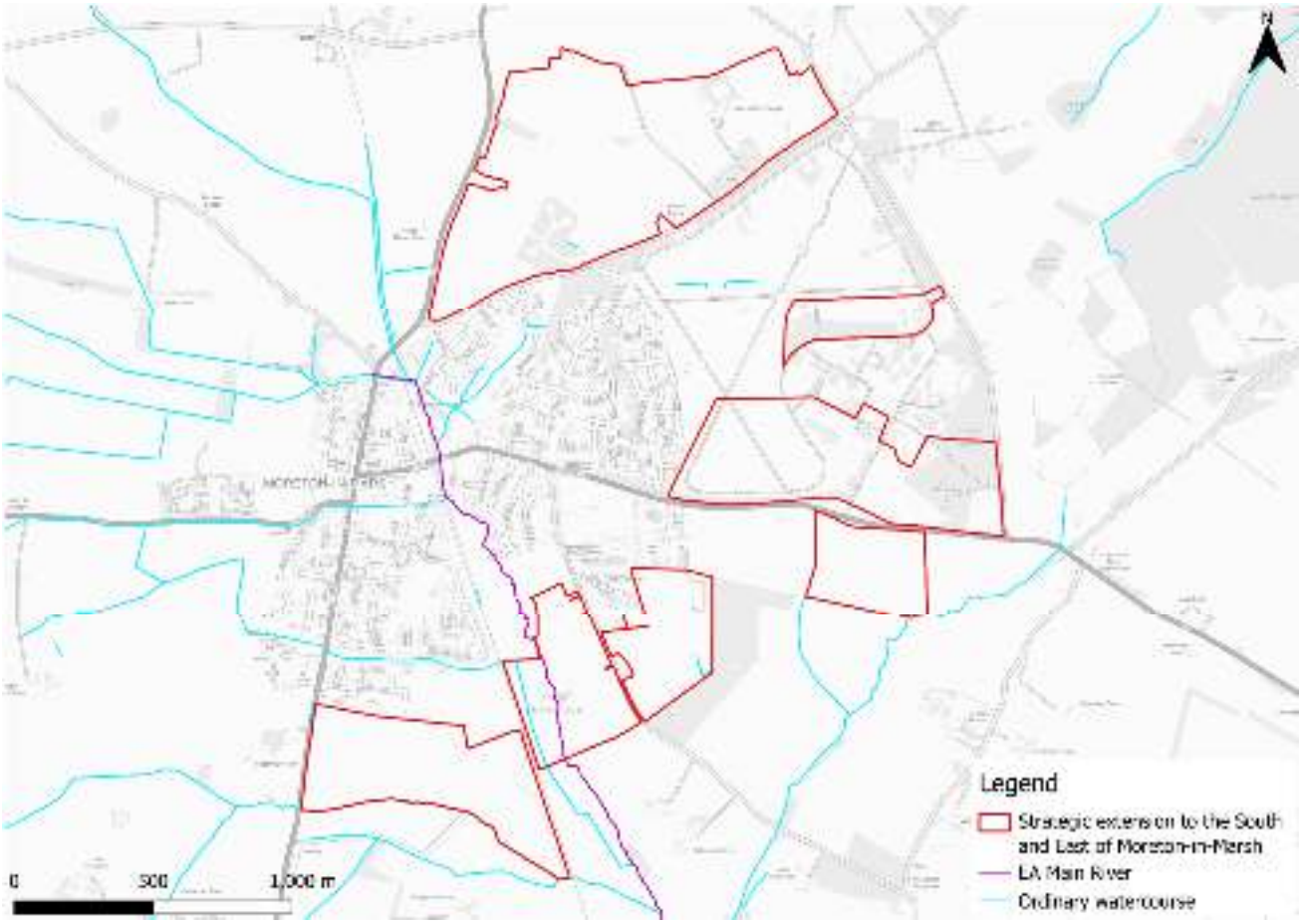

Figure 1-1: Site location boundary

There are areas of higher elevation in the northern and eastern site parcels the land slopes down to Moreton-in-Marsh and the floodplains of the River Evenlode and its ordinary watercourse tributaries (Figure 1-2).

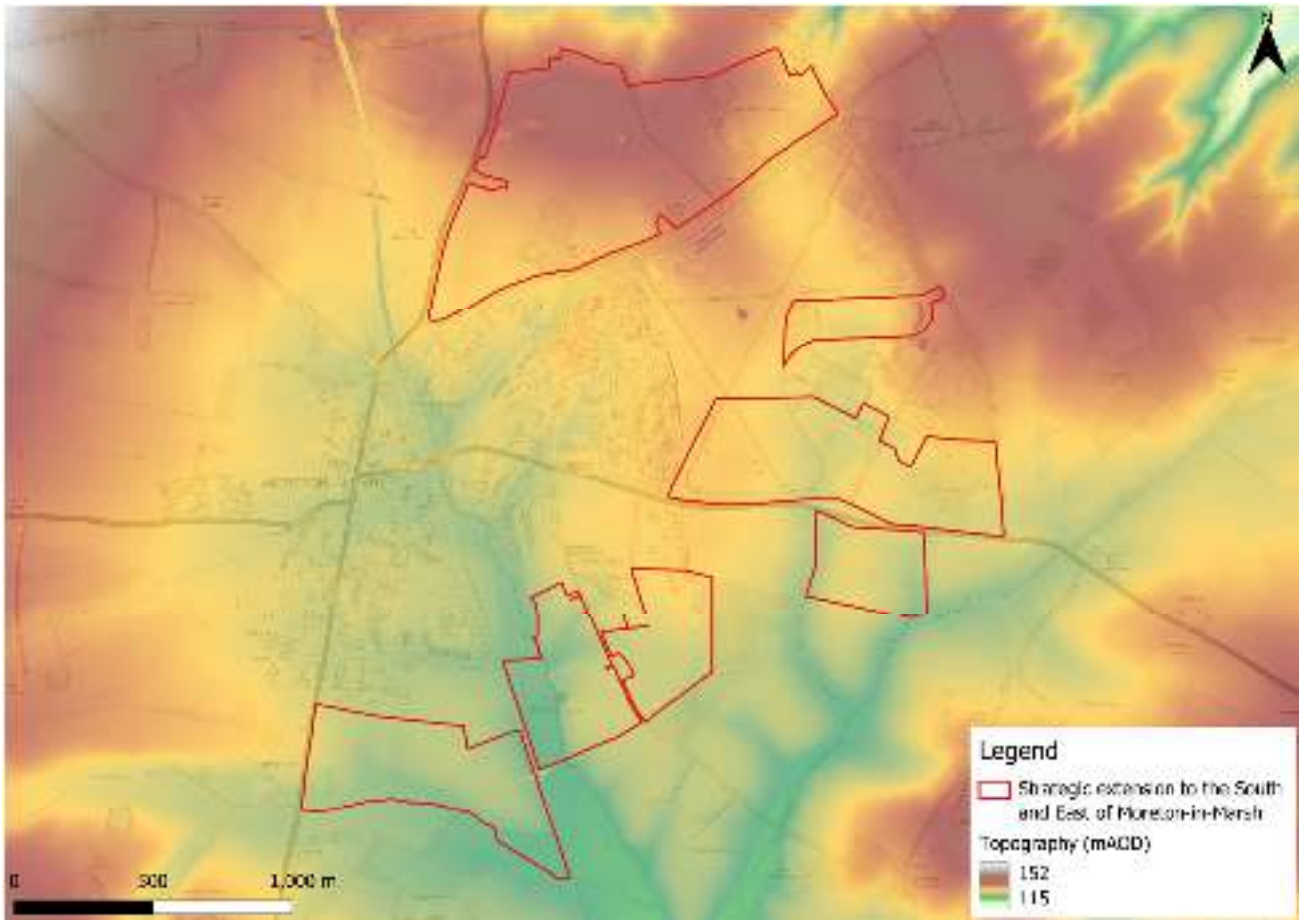

Figure 1-2: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 SFRA, three of the seven parcels are shown to be at flood risk from rivers and can be viewed on Figure 2-1. As shown in Figure 2-1, one parcel has the River Evenlode flowing through it from north to south. The other two parcels at risk are at risk from unnamed tributaries to the Evenlode, one to the west and one to the east. Please note, the Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

All three at risk parcels have functional floodplain within them. The functional floodplain in this location for each watercourse is based on the EA's New National Model (NNM) dataset 'Rivers and Sea 3.3% defended flood risk extents - present day'. There should be no development within the functional floodplain.

The other site parcels are located wholly within Flood Zone 1 and therefore at low risk of flooding from rivers.

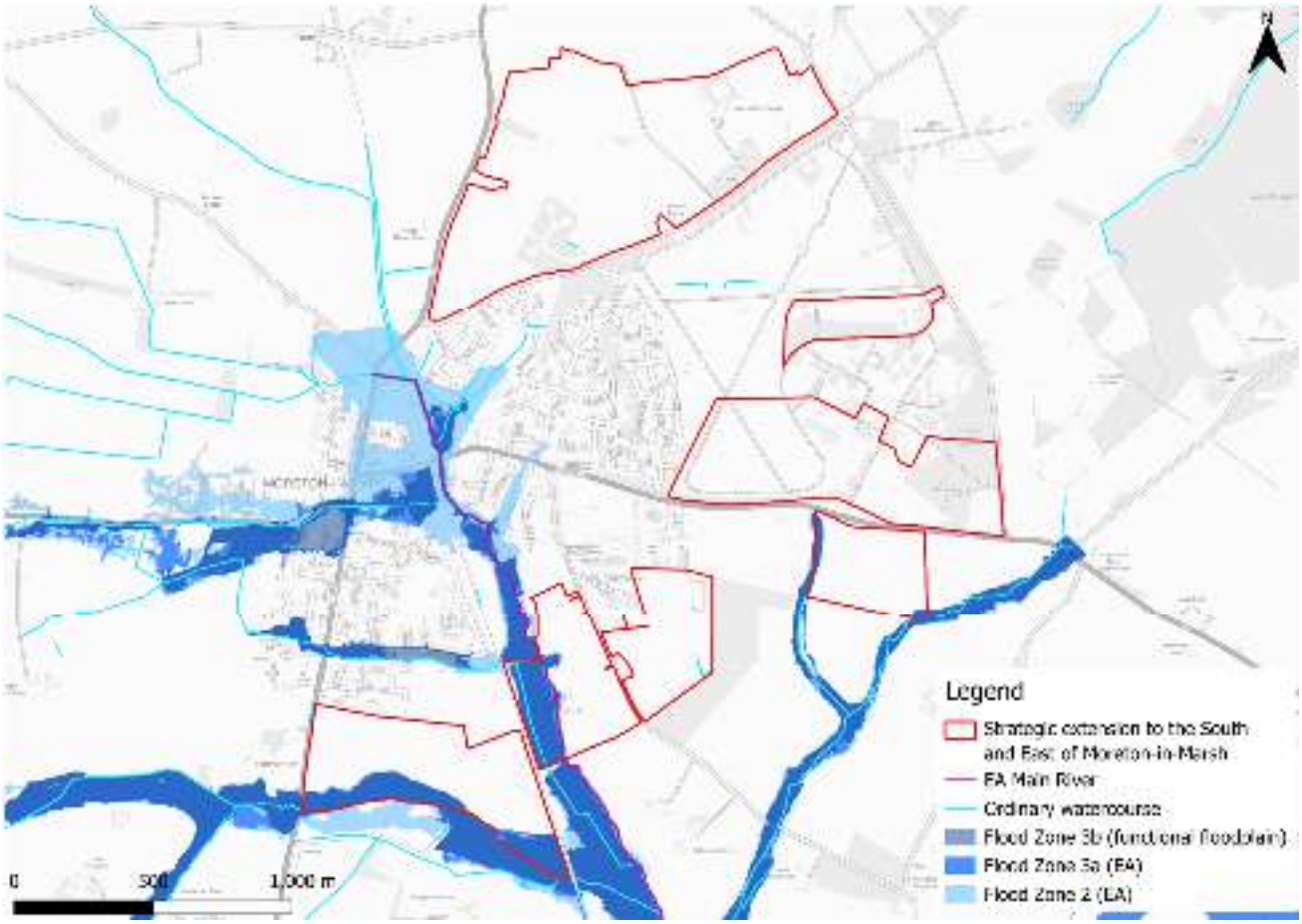

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Cotswold Management Catchment. The central allowance within this catchment is 26% on peak flows (Table 2-1). There is no local detailed model for the River Evenlode or its tributaries, therefore the required event cannot be assessed.

Table 2-1: Modelled climate change allowances for peak river flows within the Cotswold Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	11	17	31
2050s	13	21	43
2080s	30	43	82

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of climate change on Flood Zone 3a and Flood Zone 2 combined. This shows a slight increase in risk compared to present day though nothing significant.

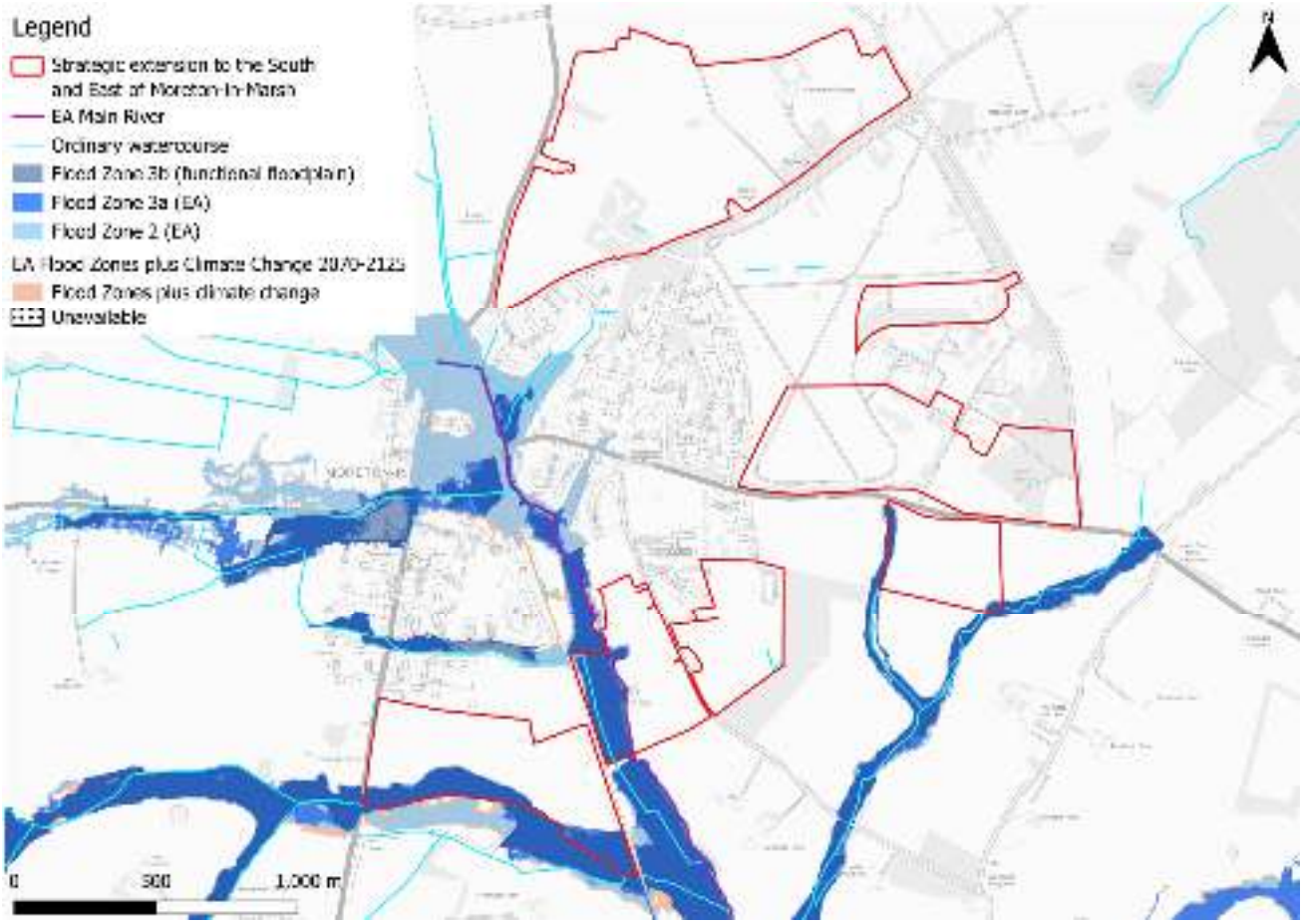

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. A large area of the centre of Morton-in-Marsh was flooded in 2007 due to channel exceedance of the River Evenlode and its tributaries (Figure 2-3).

The LLFA provided its historic floods register. There have been nine recorded flooding incidents within the Moreton West and East Wards within which the site parcels are located.

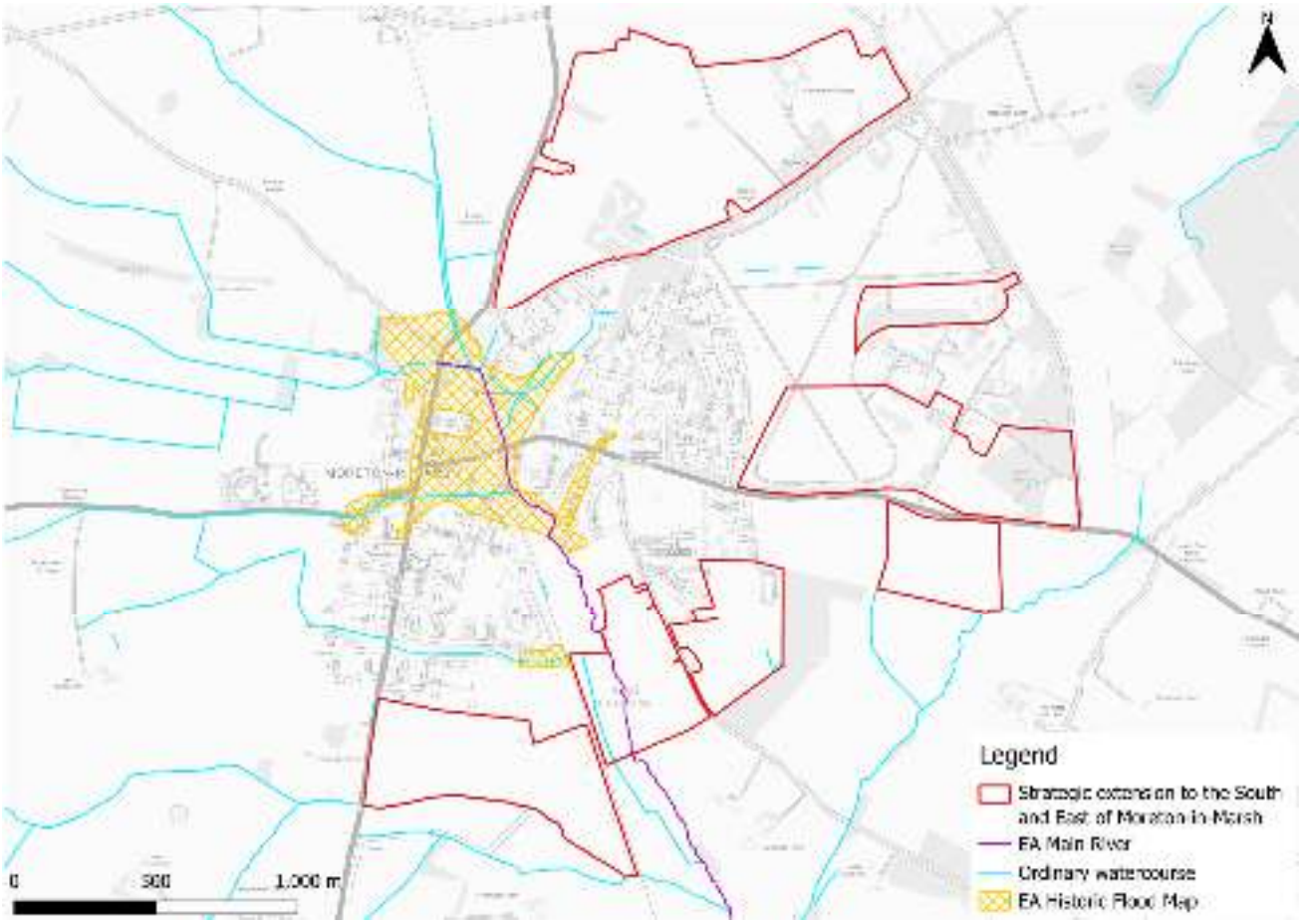

Figure 2-3: Historic flood events

2.4 Flood risk management

2.4.1 Flood defences

The site parcels do not benefit from any formal engineered flood defences, according to the EA's spatial flood defences dataset.

2.4.2 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. Figure 2-4 shows that several site parcels and the surrounding watercourses in the wider area could benefit from riparian, floodplain, and wider catchment tree planting. Tree planting can help to slow the flow to benefit areas downstream. There is also potential for runoff attenuation features where it may be possible to temporarily store water and attenuate flooding during high flows, and floodplain reconnection. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

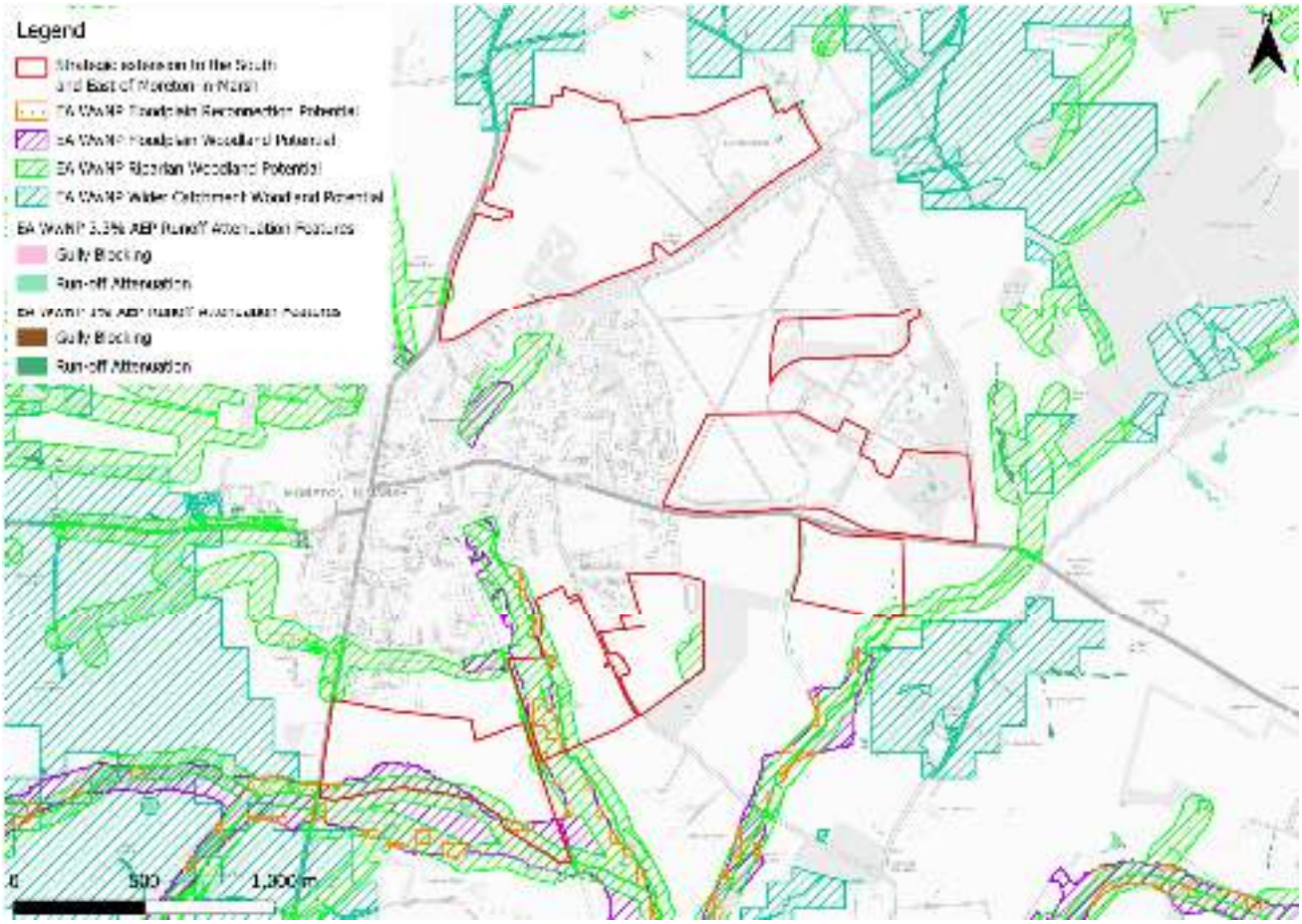

Figure 2-4: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warning and alerts

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 floodplain of the River Evenlode in Moreton-in-Marsh is within a FWA, namely the 'River Evenlode at Moreton in Marsh' FWA, as shown in Figure 2-5.

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 floodplain of the River Evenlode in Moreton-in-Marsh and the watercourses to the south of the town are located within a FAA, namely the 'River Evenlode from Moreton in Marsh to Cassington and also the River Glyme at Wootton and Woodstock' FAA, as shown in Figure 2-5.

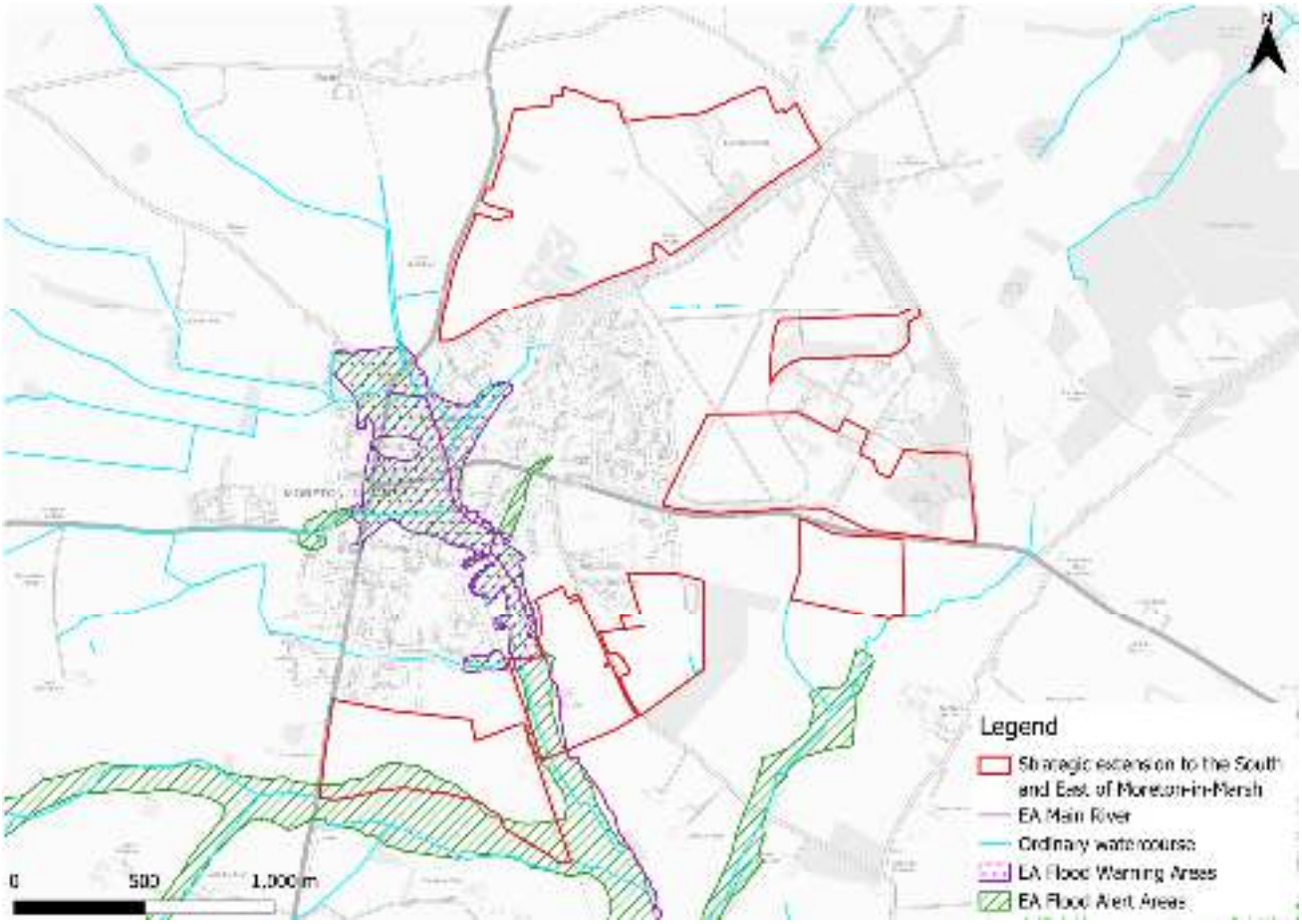

Figure 2-5: Flood warnings and alerts

2.5.2 Access and escape routes

Figure 2-6 shows the potential safe access and escape routes (orange circles) to and from the parcels at fluvial flood risk, based on the Flood Map for Planning.

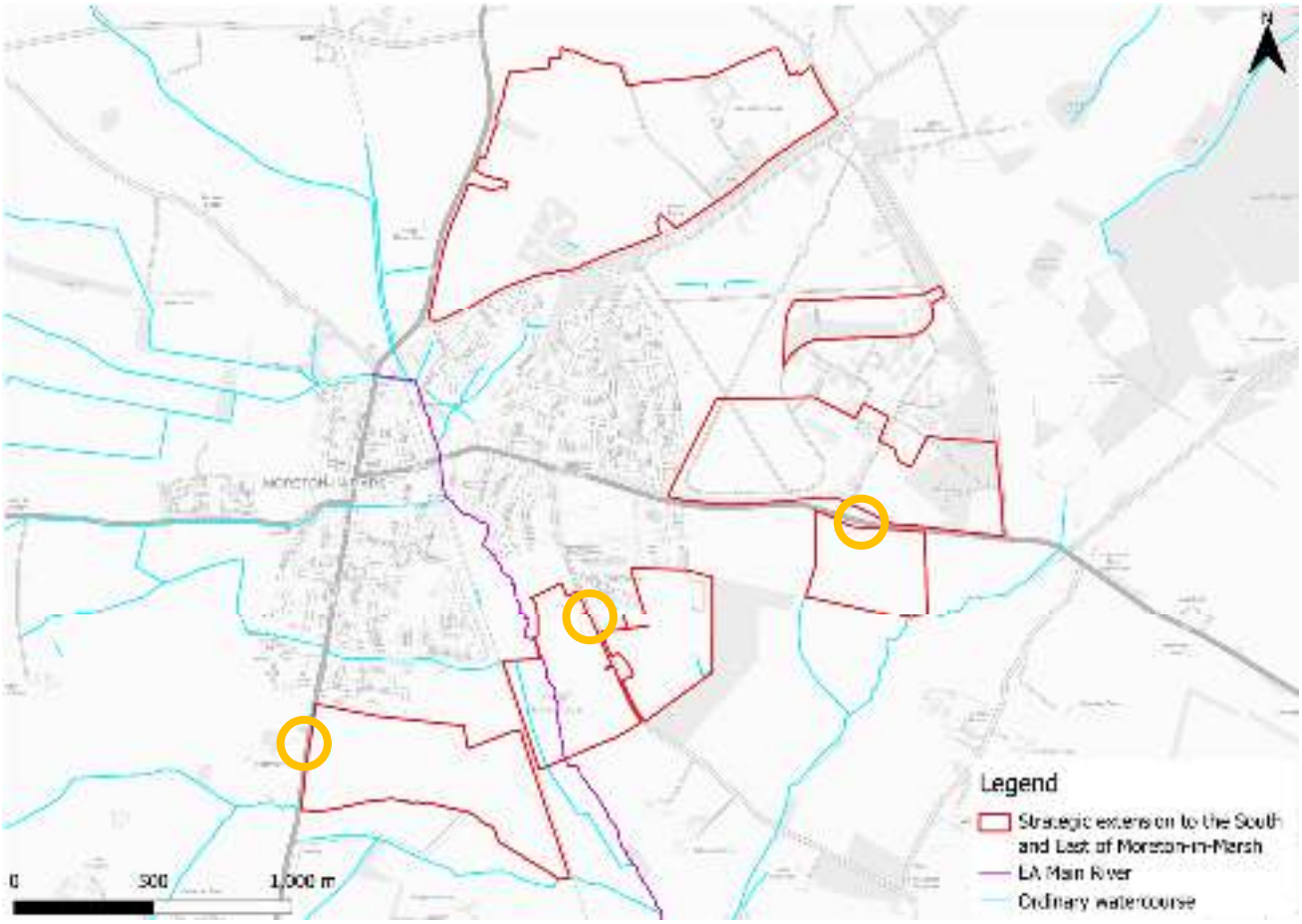

Figure 2-6: Potential access and escape routes

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

- Observations:
  - Four site parcels are wholly in Flood Zone 1 and not shown to be at additional risk from climate change. The areas of the site parcels within the functional floodplain should not be developed and should remain as open greenspace. Ideally, all built development would be directed to Flood Zone 1 whilst also accounting for the impacts of climate change. This means there should be no development to the west of the River Evenlode in the parcel through which the Evenlode flows.
  - There is no current detailed model available for this reach of the River Evenlode and its tributaries. The EA's NNM is therefore considered to be the most up to date information on fluvial risk to the site parcels and surrounding areas. The NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
- Mitigation:

- All risk areas should remain as open green space, providing a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits.
- The EA may request for the development of a detailed flood model of the River Evenlode and its tributaries at the FRA stage to robustly define risk to the site parcels and the surrounding areas.
- EA flood warnings and alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.

- Access and escape:
  - Based on current information, safe access and escape routes appear achievable via several locations at each parcel.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths Present Day

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extents map (May 2026), the site parcels are predominantly at low risk of surface water flooding as shown in Figure 3-1. There are various flow paths and areas of ponding present throughout each site parcel. Greatest surface water flood depths in the 1% AEP event vary across each parcel (Figure 3-2).

Safe access and escape routes are achievable via multiple locations at each site parcel.

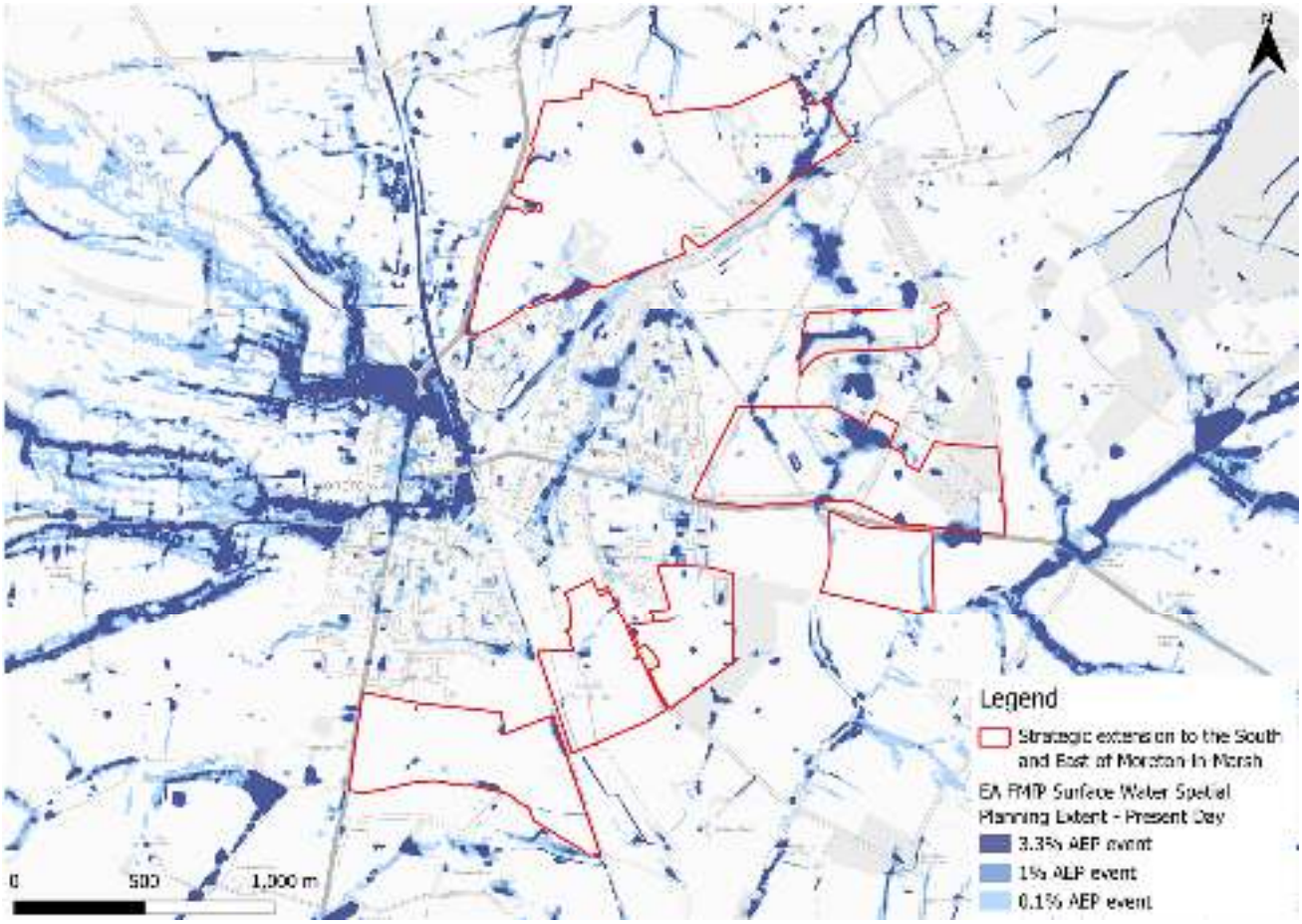

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

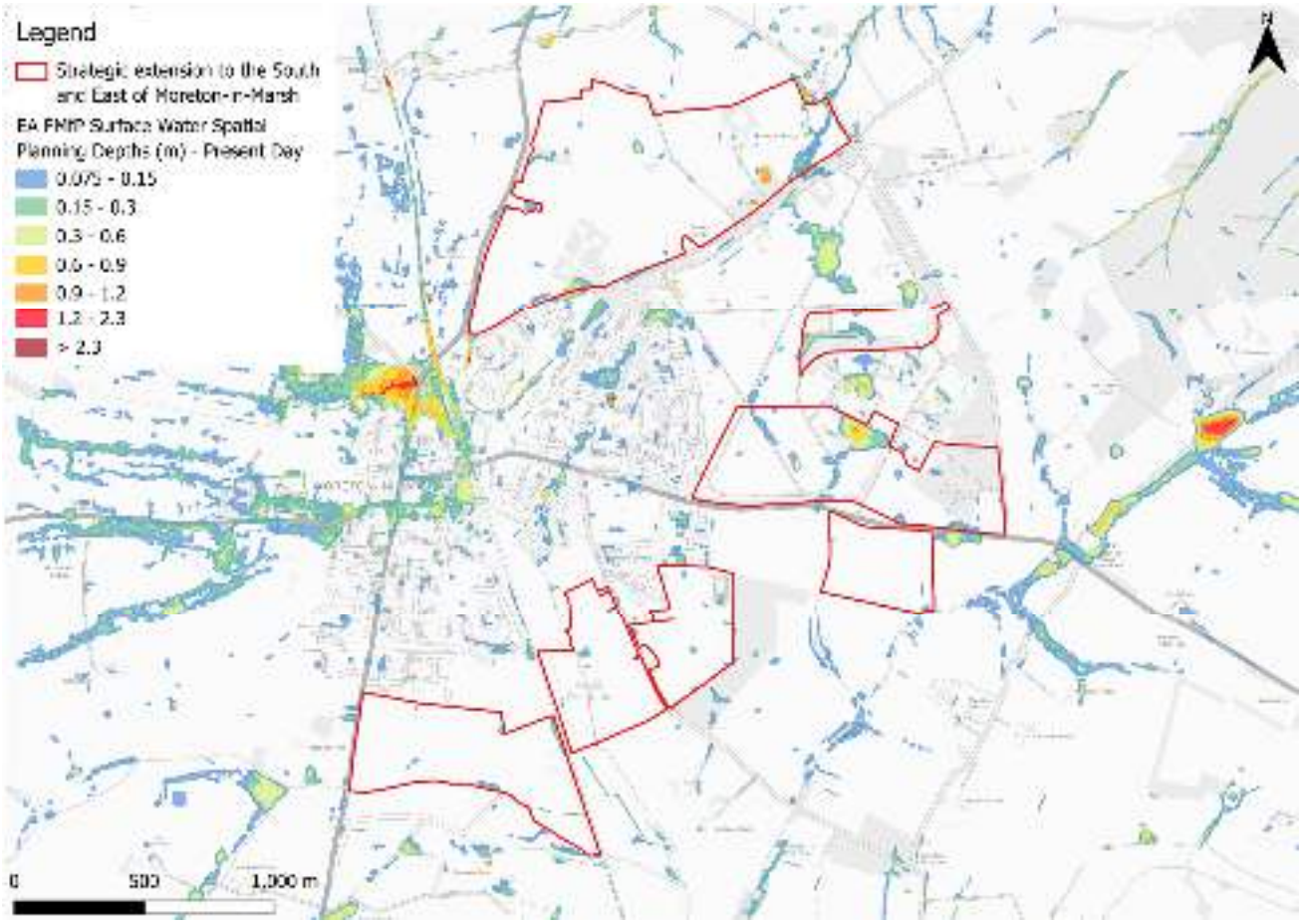

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW hazard map mainly shows 'low' to 'moderate' flood hazards across the at risk parcels (Figure 3-3). There are clearly differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping whereby the RoFSW shows a much larger area to be at risk. Given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

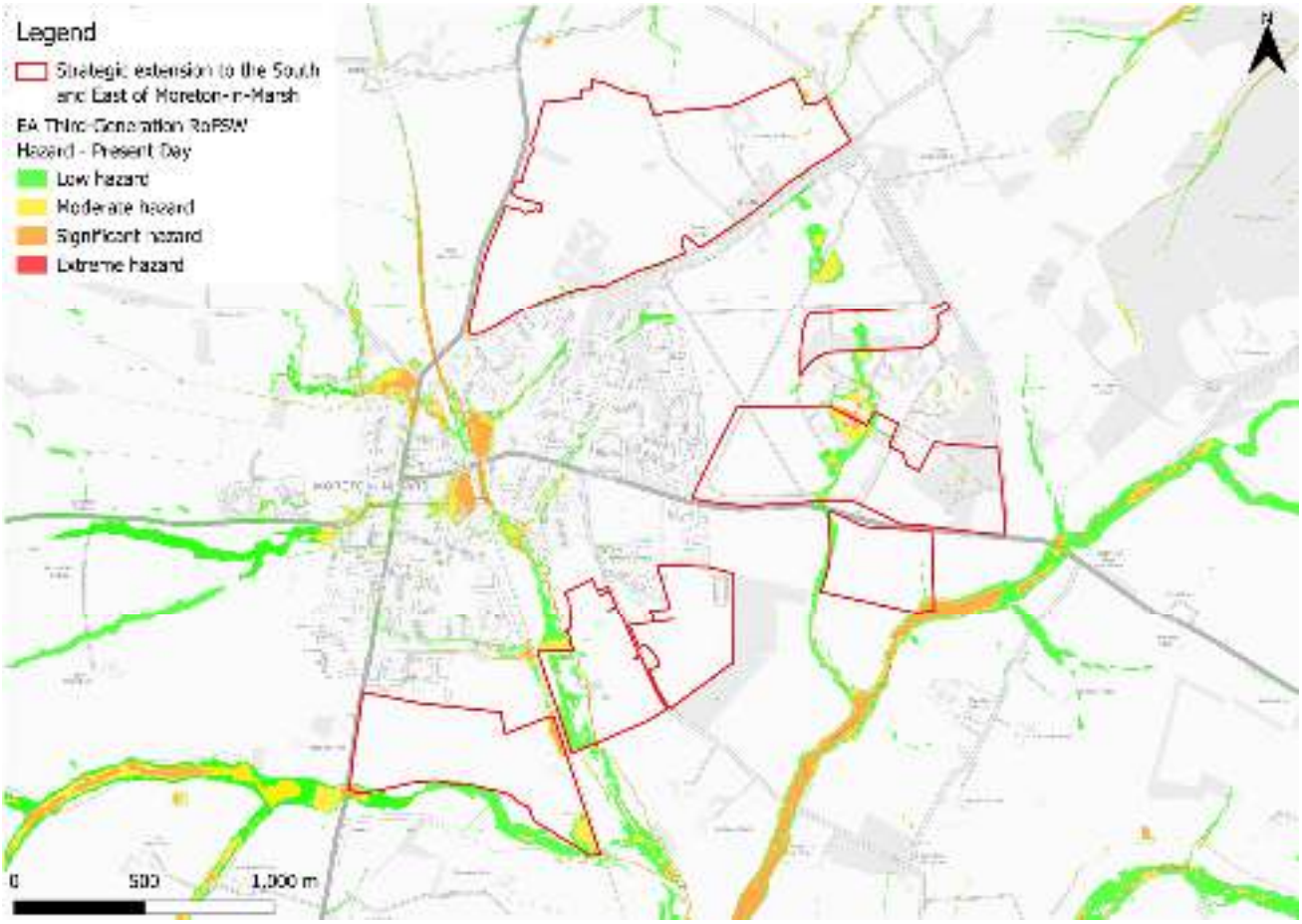

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day 1% AEP event surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRA's should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Cotswolds management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-1: Peak rainfall intensity allowances for the Cotswolds Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. Risk is not shown to be significantly greater with climate change. However, the existing town does appear to be at greater risk in the future. Flood depths are shown to increase with climate change (Figure 3-5).

Safe access and escape routes would likely remain achievable via the same locations.

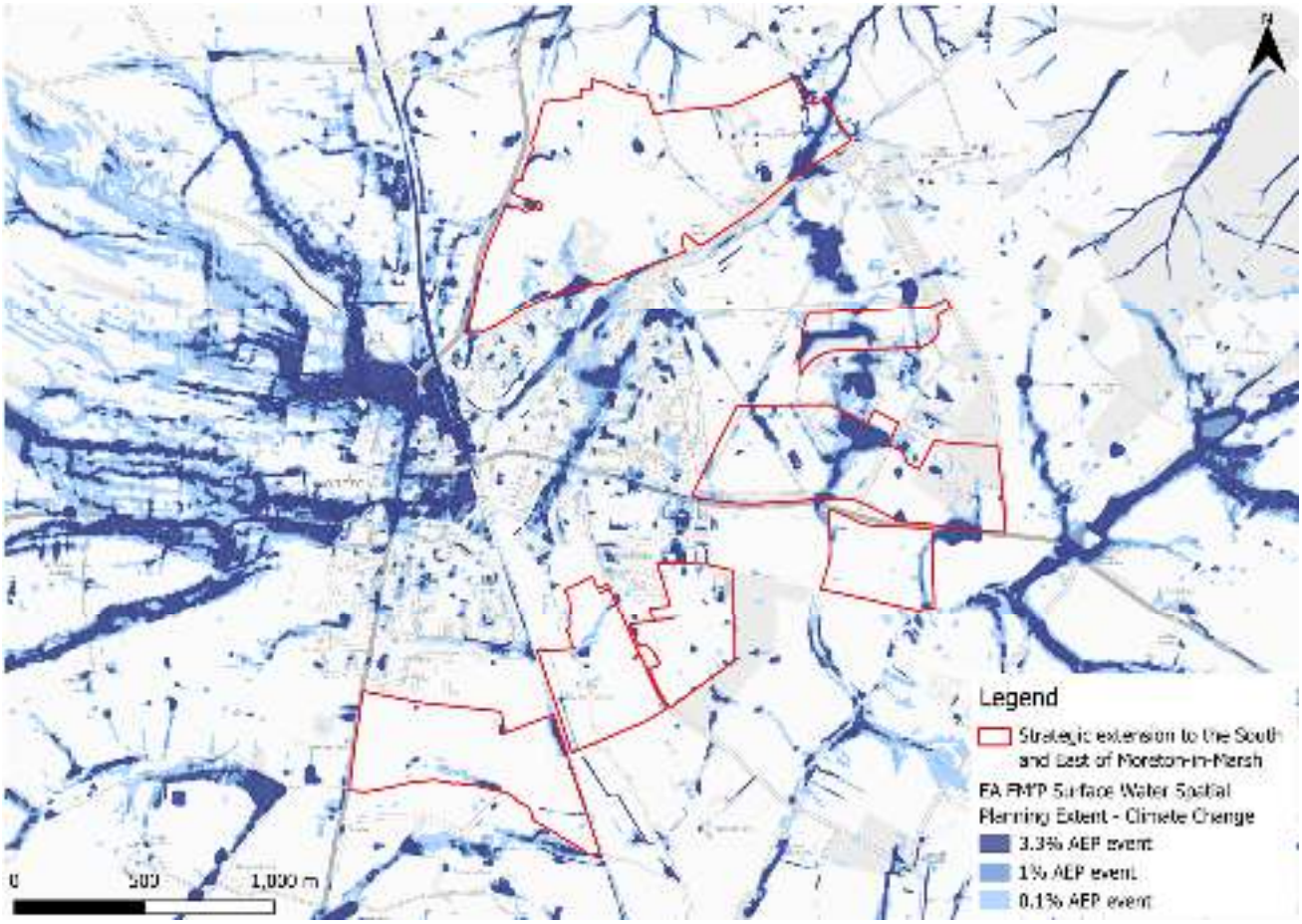

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

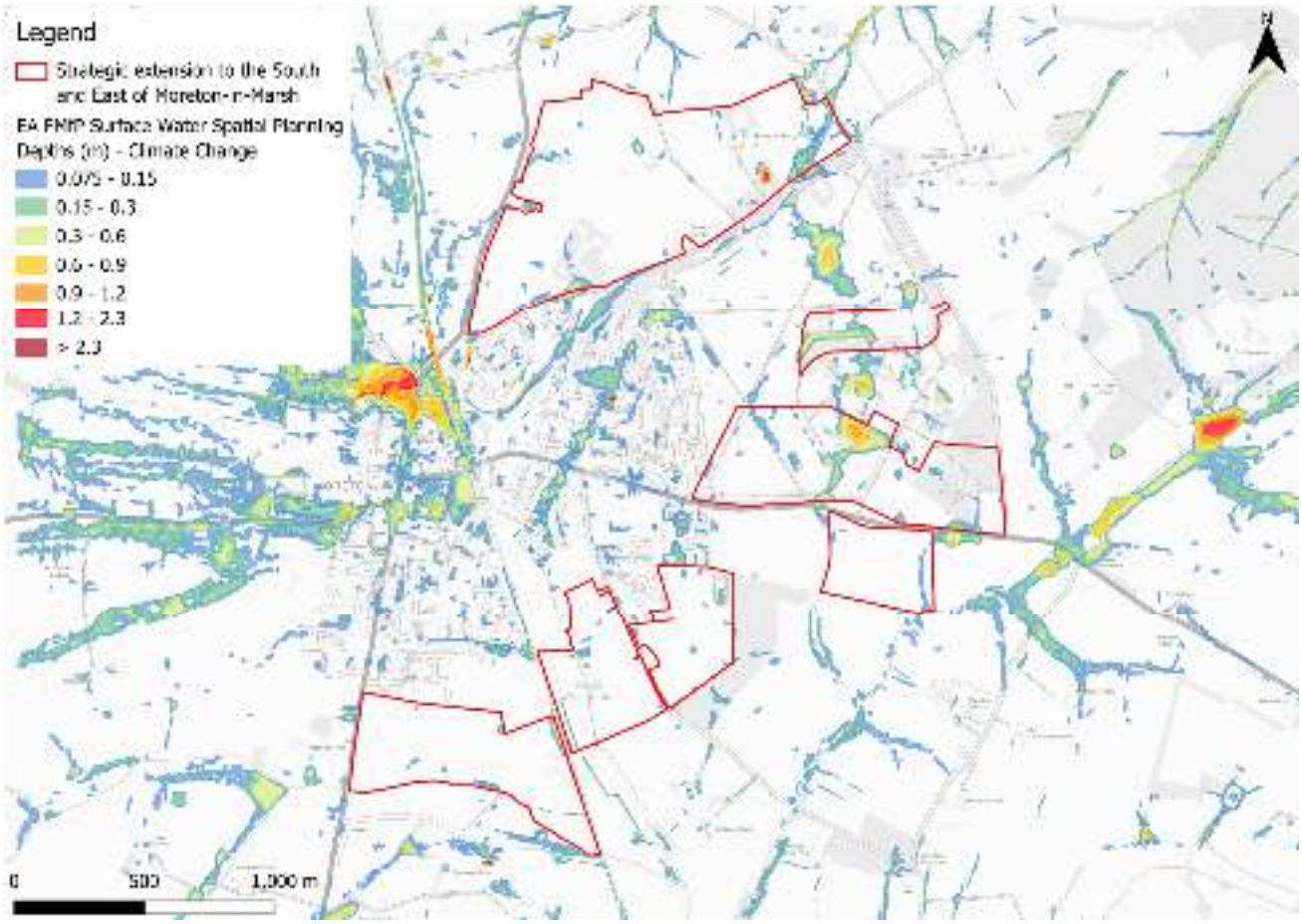

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event surface water flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning climate change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the RoFSW 0.1% AEP surface water event as a conservative proxy for the RoFSW 1% AEP event plus climate change, as the best available information to assess surface water flood hazards (Figure 3-6). However, given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

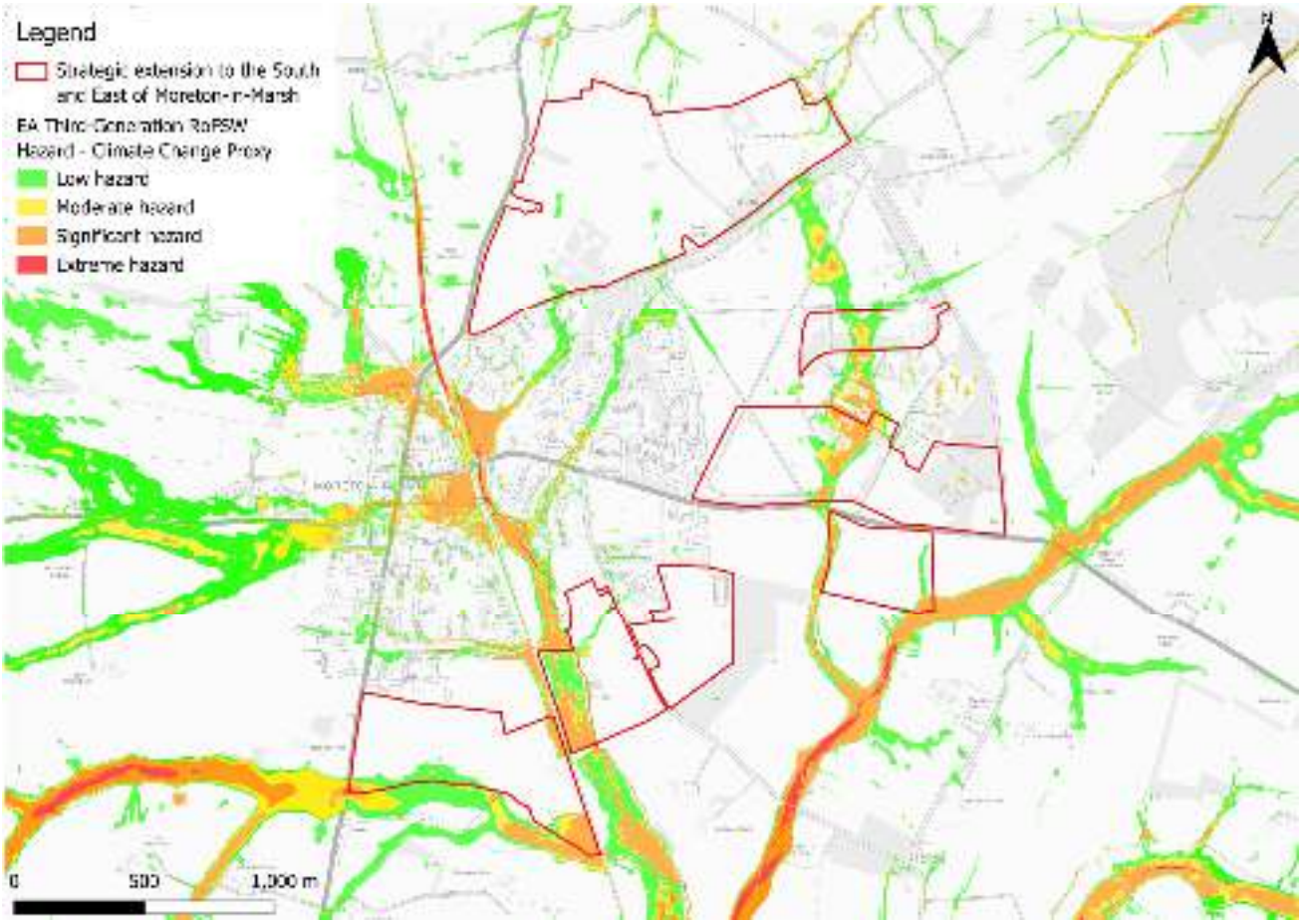

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day 0.1% AEP event surface water flood hazard as a climate change proxy

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There are 17 recorded sewer flooding incidents nearby the site nor within the Moreton West and East Wards.

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

- Current risk to the site parcels is predominantly low, with small areas of ponding and flow paths within each parcel.
- Topographic low spots and flow paths should be considered and included in site design and ideally left in place to flood naturally when required.
- The drainage strategy for each site parcel must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.
- Safe access and escape routes would likely be achievable via multiple locations when considering surface water risk.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. The site parcels to the north and south of the town are mainly located within a high sensitivity catchment, namely, the Evenlode (Source to Four Shires S) and Longborough Stream catchment. The eastern site parcels are within a low sensitivity catchment, namely the Evenlode (Compton Bk to Bledington Bk) and 4 Shires catchment. Planning considerations for sites at high and low sensitivity to the cumulative impacts of development can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The risk of groundwater emergence is significant across the site parcels and the wider area. Across the majority, there is a risk of groundwater emergence to both surface and subsurface assets. In some areas, groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.

Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

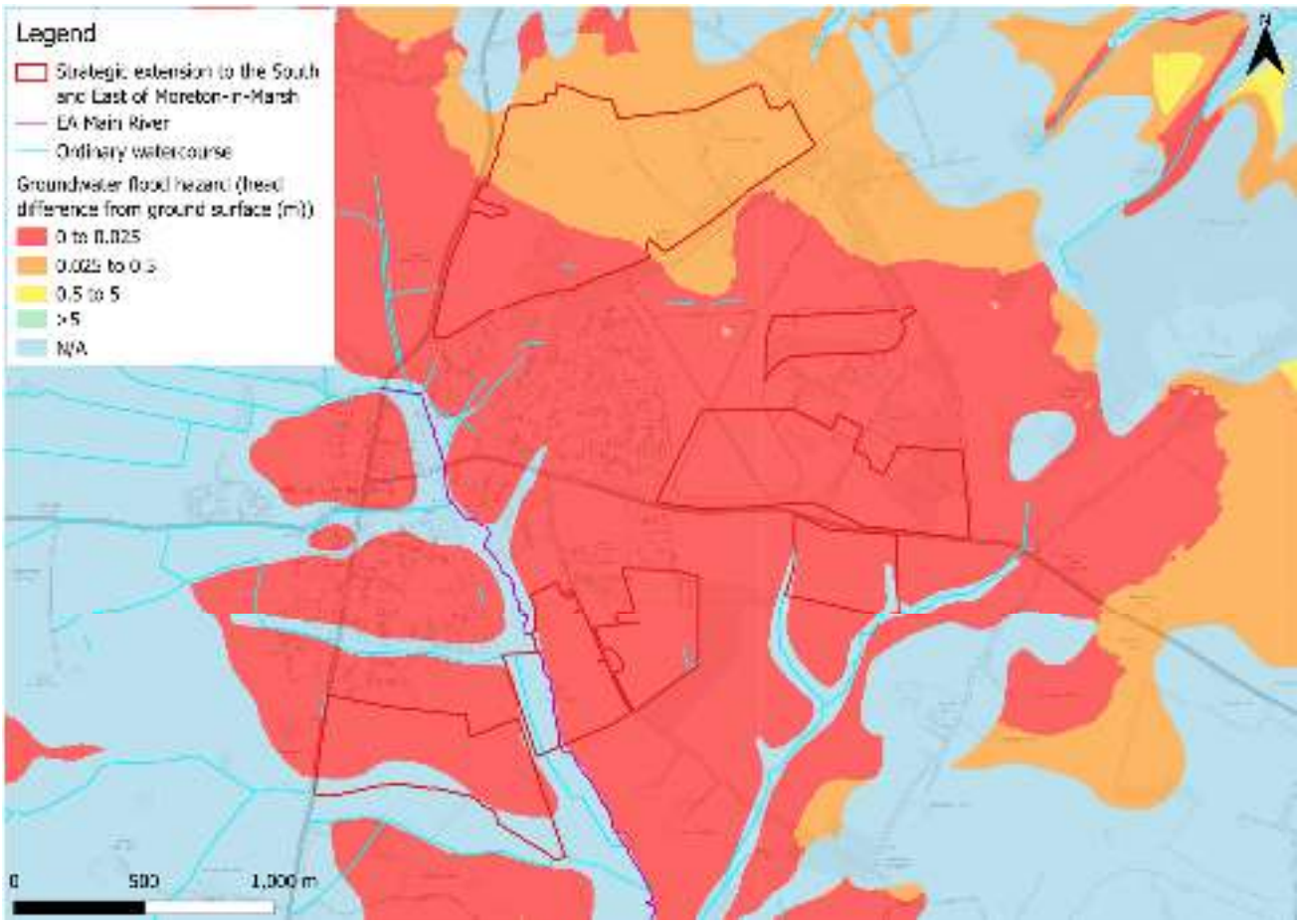

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, and sandstone (Figure 5-2). Mudstone and siltstone generally have a low permeability and low level of porosity, reducing infiltration rates. Superficial deposits include diamicton which also has low to very low permeability. Based on the groundwater emergence mapping and the underlying geology, infiltration SuDS at this site may not be an option, though the drainage strategy for the site should fully investigate water table levels through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

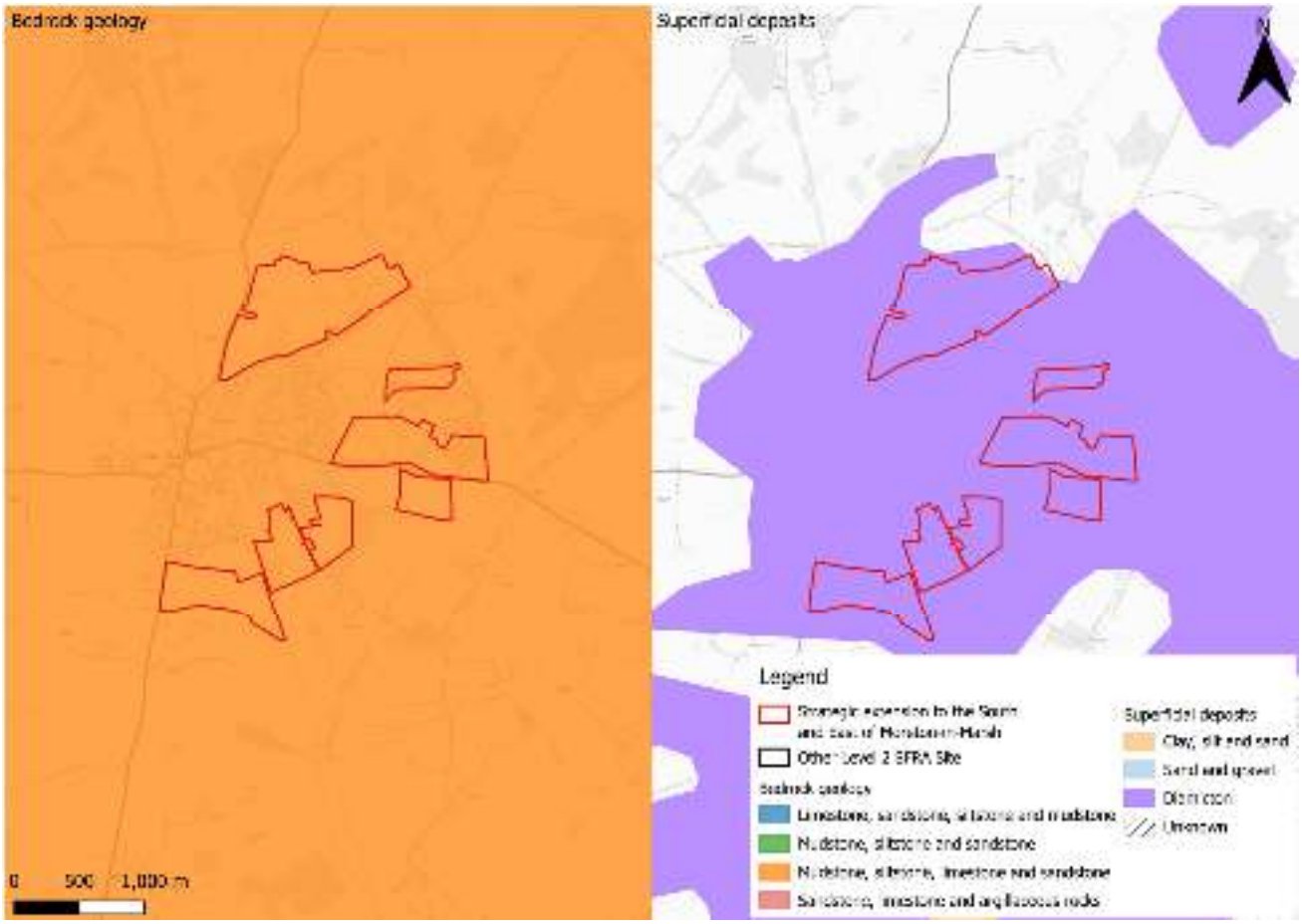

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets.

There are no defences in place along the River Evenlode, nor its tributaries in this area. A ordinary watercourse is culverted under the railway line at the far southern boundary of the most southern site parcel. The culvert location is indicted by the green circle on Figure 6-1. There is a potential residual risk of a blockage of this culvert. This risk should be investigated at the site-specific FRA stage.

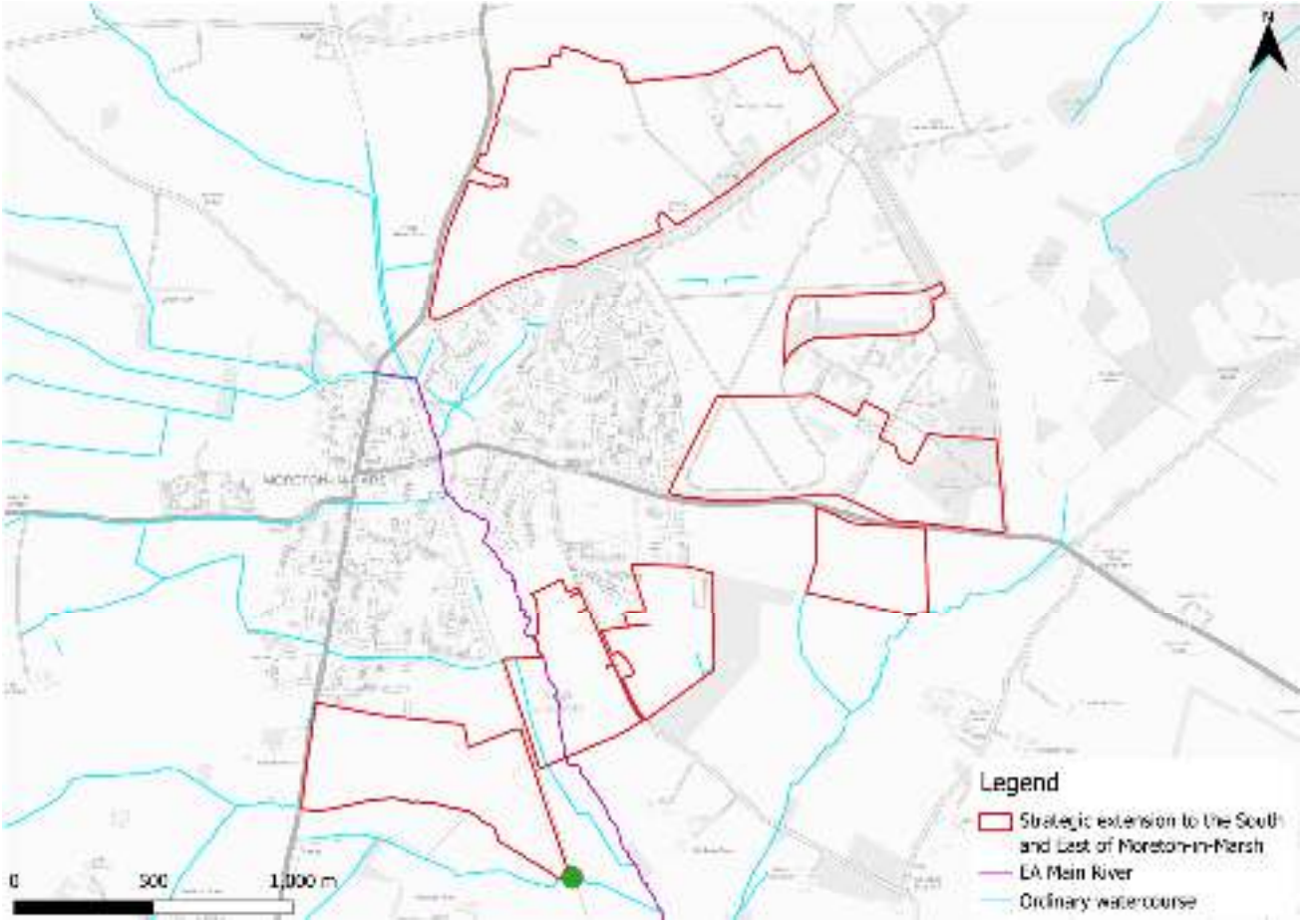

Figure 6-1: Potential blockage location

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. 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?

The site parcels at fluvial flood risk are required to pass part b) of the exception test, if more vulnerable development is proposed, as each site is partially located within Flood Zone 3a. Each parcel would likely pass the Exception Test given fluvial risk is confined to the floodplains of each watercourse, leaving larger areas of each parcel within Flood Zone 1. However, the EA may request for detailed modelling of the watercourses at the FRA stage which inform reapplication of the Exception Test.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- It should be possible to develop these site parcels, given the large areas of Flood Zone 1 and nominal additional risk from climate change.
- There should be no development within the areas of functional floodplain. It should be possible to safeguard all areas at fluvial risk for flood storage whilst still enabling development in Flood Zone 1. The risk areas should remain as open space offering multifunctional benefits alongside flood risk mitigation including BNG contributions, and social and amenity benefits.
- Drainage strategies will be required for each site parcel. Each strategy should ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply with consideration of local and national SuDS guidance.
- Given the significant risk to the existing town, it may be beneficial to carry out a wider Surface Water Management Plan for the town and proposed development areas.
- Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.
- Safe access and escape routes appear achievable from each site parcel.
- Potential residual risk from the railway culvert to the southern site parcel should be assessed at the FRA stage.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Site M28B - Land west of Aldi

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Authorised by	Mike Williamson BSc MSc CGeog FRGS EADA Principal Analyst

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Contract

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JBA Project Code	2025s1921

This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson of JBA Consulting carried out this work.

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The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken between June and August 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 for their assistance with this work.

Copyright

Contents

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List of Tables

1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site M28B. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Site M28B

- Location: Land west of Aldi (NGR 420093, 231834)
- Existing site use: Open greenspace, current access road
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 1.03
- Watercourse: Unnamed ordinary watercourse, tributary of River Evenlode
- Environment Agency (EA) flood model: N/A
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of fluvial flood extents (depths, velocities and hazards unavailable)
    - Assessment of surface water flood extent, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

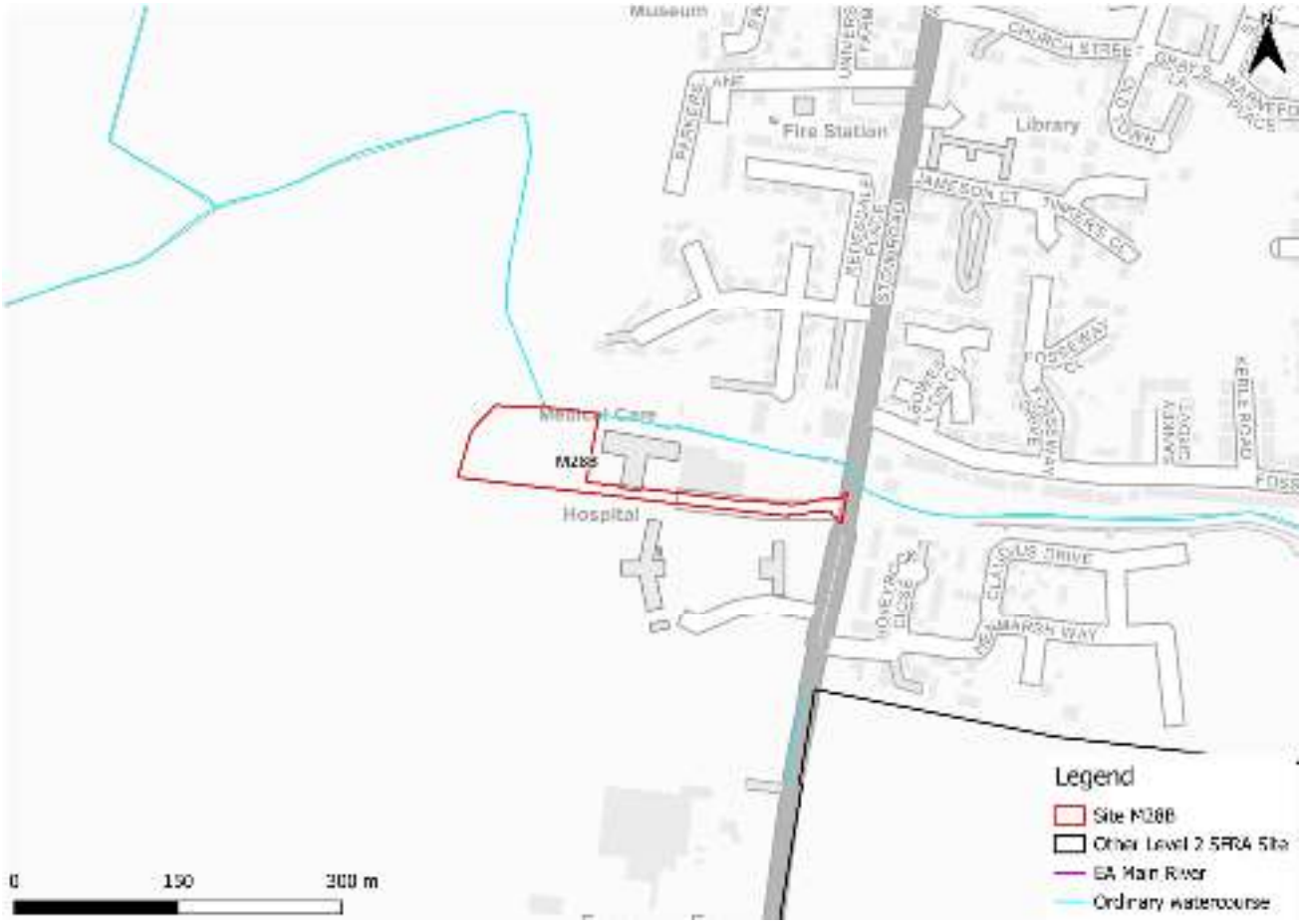

Figure 1-1: Site location boundary

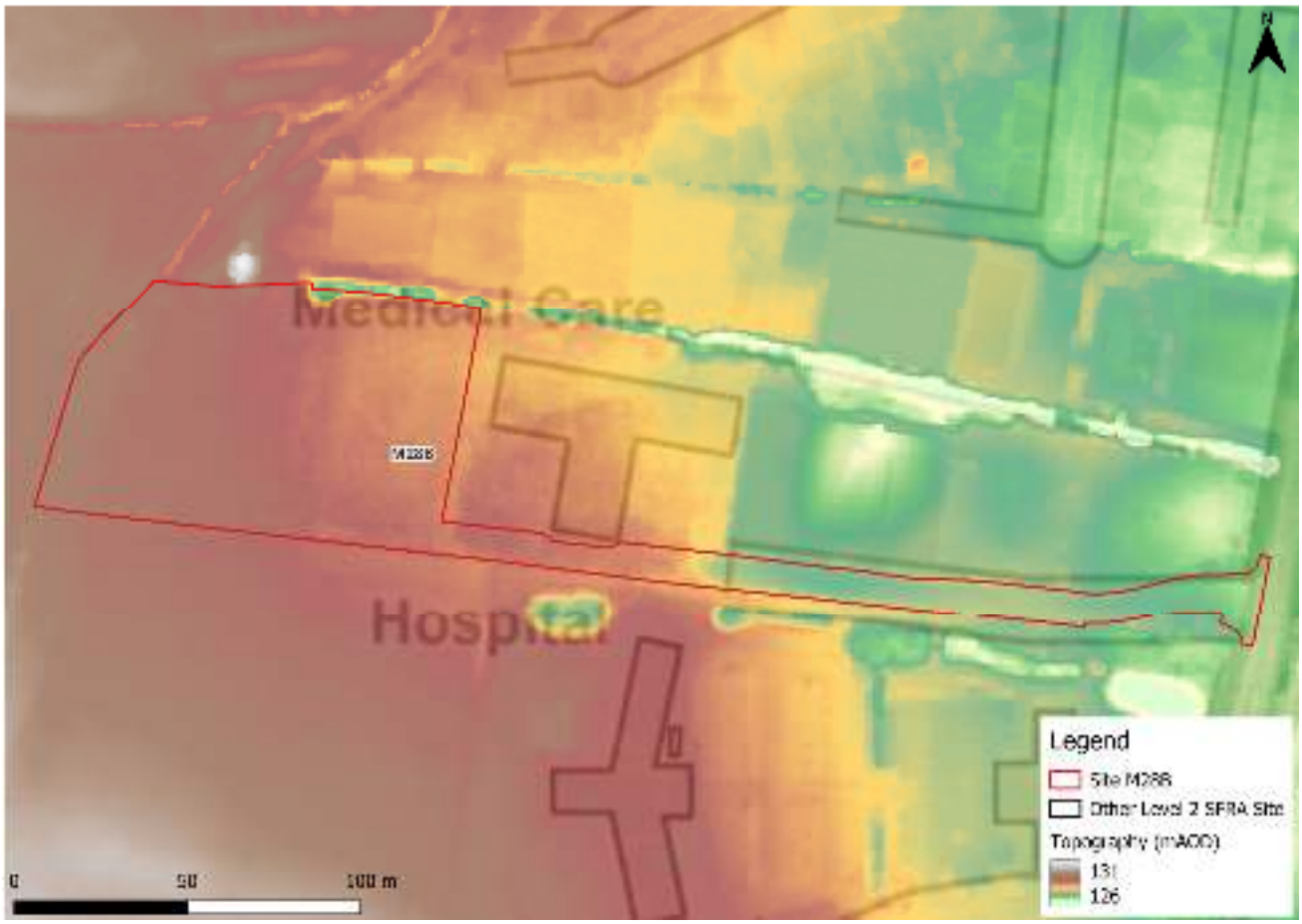

Figure 1-2: Topography

The topography of the site slopes from west to east towards the floodplain of the River Evenlode.

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 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. The Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

The site is partially within the functional floodplain due to risk from the unnamed ordinary watercourse, which borders the northern boundary of the site. The majority of the site is within Flood Zone 1 and therefore at low risk from rivers and the sea. The functional floodplain in this location is based on the EA's New National Model (NNM) dataset 'Rivers and Sea 3.3% defended flood risk extents - present day'. The Flood Map for Planning flood zones here are also based on the NNM dataset. Flood depths and hazards therefore are not available for interrogation.

Table 2-1: Present day 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)
95	1	1	3

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Cotswolds Management Catchment. The central allowance within this catchment is 30% on peak flows (Table 2-2). There is no local detailed model for the unnamed watercourse therefore the required event cannot be assessed.

Table 2-2: Modelled climate change allowances for peak river flows within Cotswolds Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	11	17	31
2050s	13	21	43
2080s	30	43	82

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of climate change on Flood Zone 3a and Flood Zone 2 combined. There is no significant additional fluvial risk to the site when considering climate change.

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There have been four recorded flooding incidents within the Moreton West Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-3 shows that the site and wider area could benefit from riparian tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

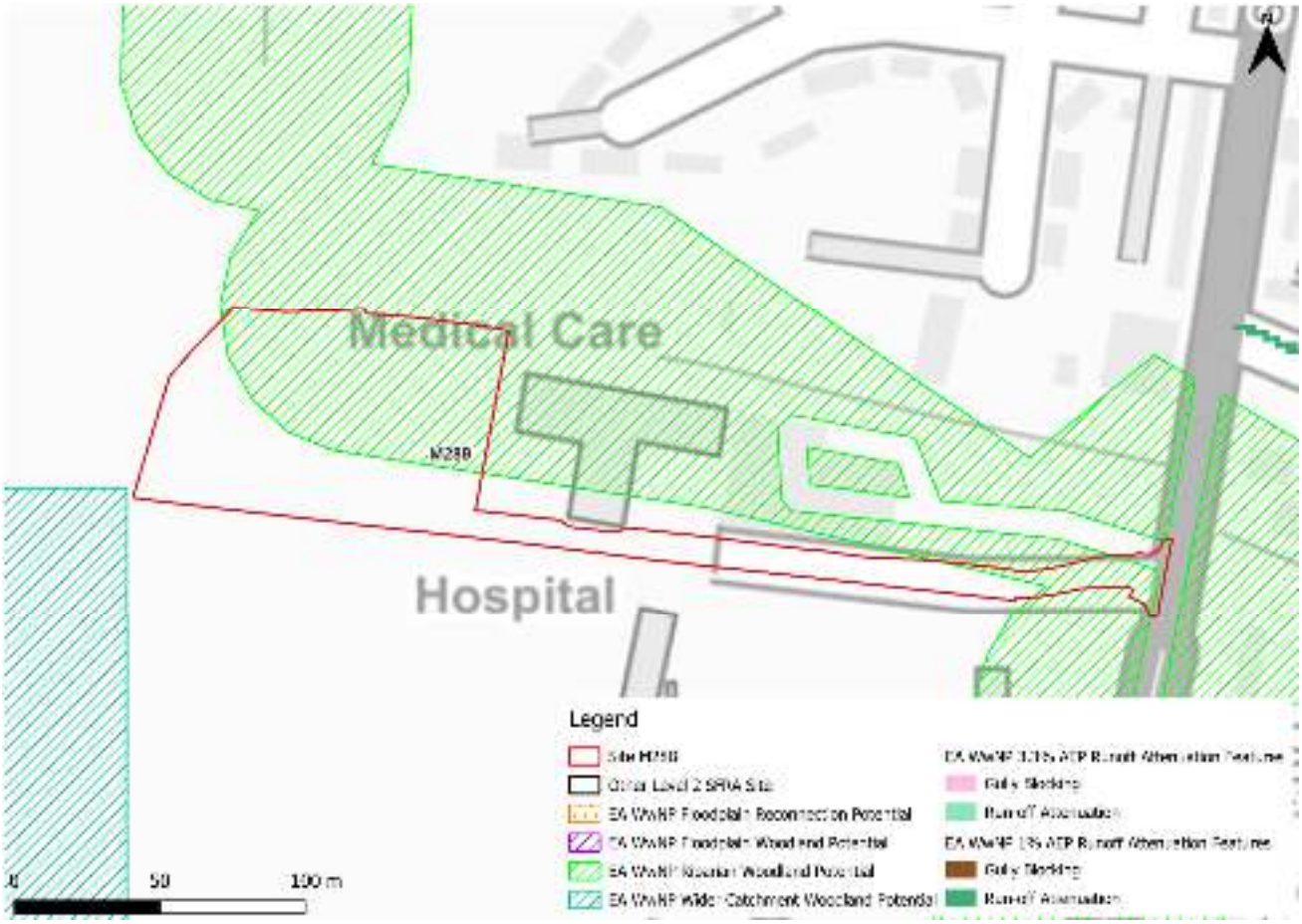

Figure 2-3: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warnings and alerts

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 the Flood Map for Planning, safe access and escape routes are available during a flood event via existing routes to Stow Road, travelling towards the south (Figure 2-4). However, detailed modelling may be required to confirm safe access and escape via the existing road.

Figure 2-4: Potential access and escape routes

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

- Observations:
  - The site borders the unnamed ordinary watercourse, which is a tributary of the River Evenlode. However, most of the site is located within Flood Zone 1 and outside of the Flood Map for Planning climate change extent and therefore mainly at low risk from rivers.
  - The risk from the unnamed watercourse is based on the EA's NNM and not detailed modelling which is considered to be the most up to date information on fluvial risk to the site and surrounding area. However, the NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
- Mitigation:
  - A no development buffer should be in place along the floodplain of the unnamed watercourse in the form of a blue green corridor, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits. All development should be directed to Flood Zone 1 outside of the climate change risk area.
  - The EA may expect detailed modelling of the unnamed watercourse to be carried out at the site-specific FRA stage to robustly inform on present day and future risk to the site.
- Access and escape:
  - Based on current information, safe access and escape routes are available via Stow Road to the east of the site, travelling southwards. However, detailed modelling may be required to confirm safe access and escape via the existing road.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extent map (May 2026), the majority of the site is at low risk of flooding from surface water (Table 3-1). There is a distinct flow path through the west of the site in the 0.1% AEP event, covering almost a quarter of the site area, with some areas of ponding shown in the 1% AEP event (Figure 3-1). The implementation of appropriate sustainable drainage systems (SuDS) will be essential in reducing the risk of surface water pooling on this site.

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Depth map, onsite surface water flood depths in the 1% AEP event are shallow (Figure 3-2). This is also the case in the 0.1% AEP event, with depths being less than 0.15 m across the entire risk area.

Safe access and escape routes are achievable via Stow Road to the east of the site.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
73	24	3	0

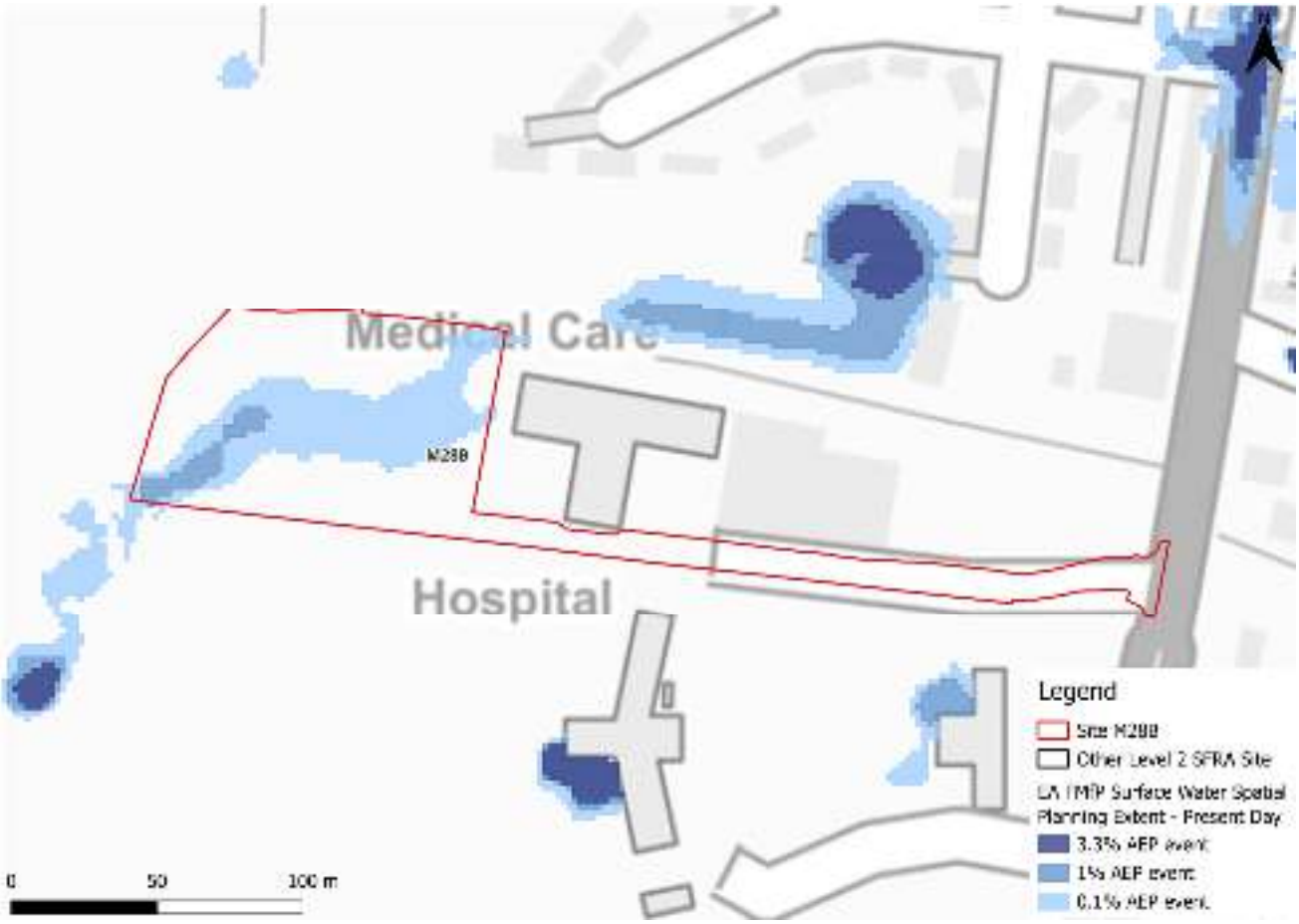

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

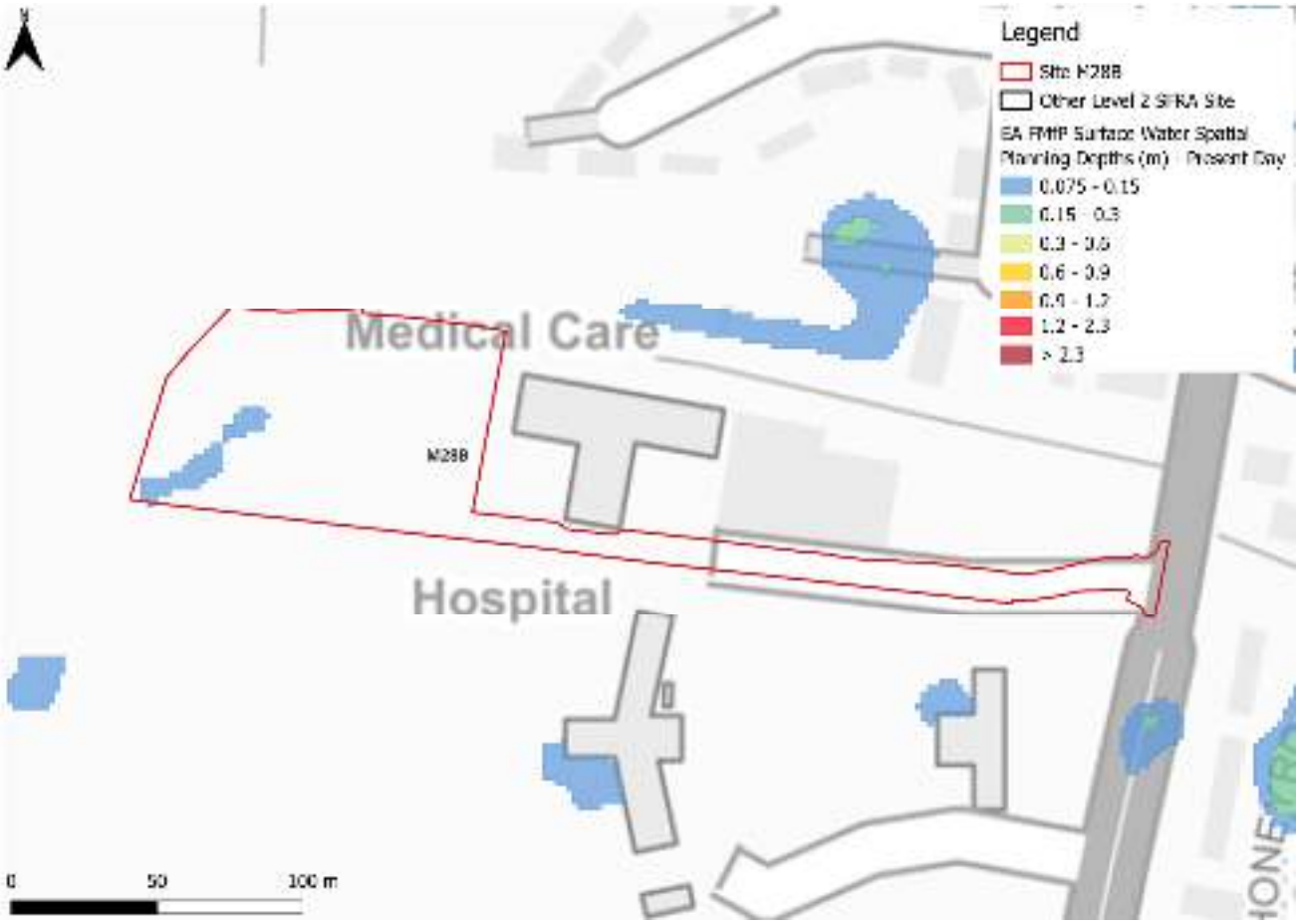

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

Based on the EA's national scale third generation RoFSW map, surface water flood hazard within the site in the medium event is categorised as 'low' (Figure 3-3). There are clear differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping. However, updated surface water hazard information should be confirmed at the site-specific FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

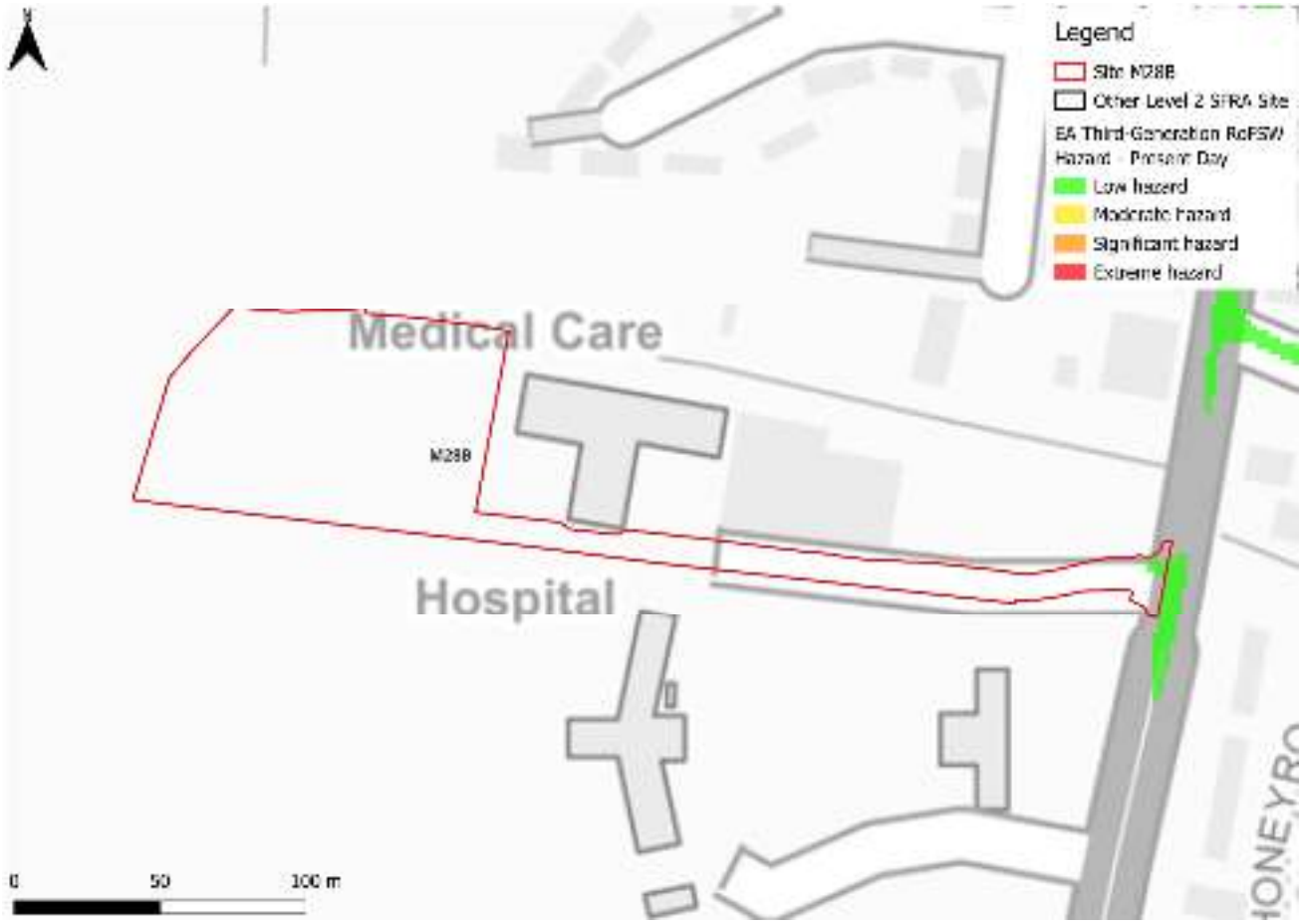

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day medium risk surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRAs should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is now included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Cotswolds management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Cotswolds Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. The flow path through the west of the site is shown to increase in extent when considering climate change. Flood depths within both the future 1% AEP and 0.1% AEP events are shallow (Figure 3-5).

Safe access and escape routes would likely remain achievable via Stow Road to the east of the site.

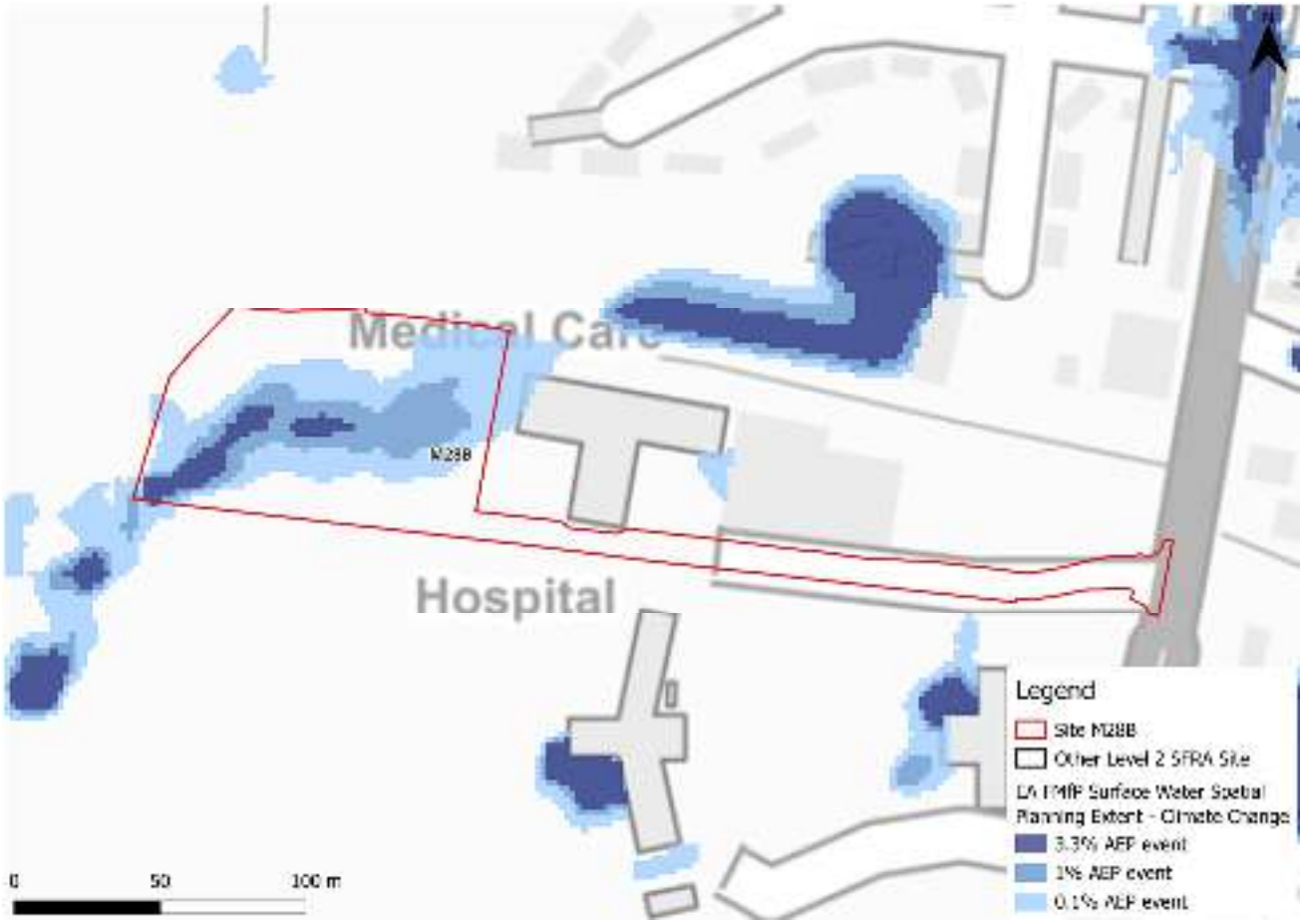

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

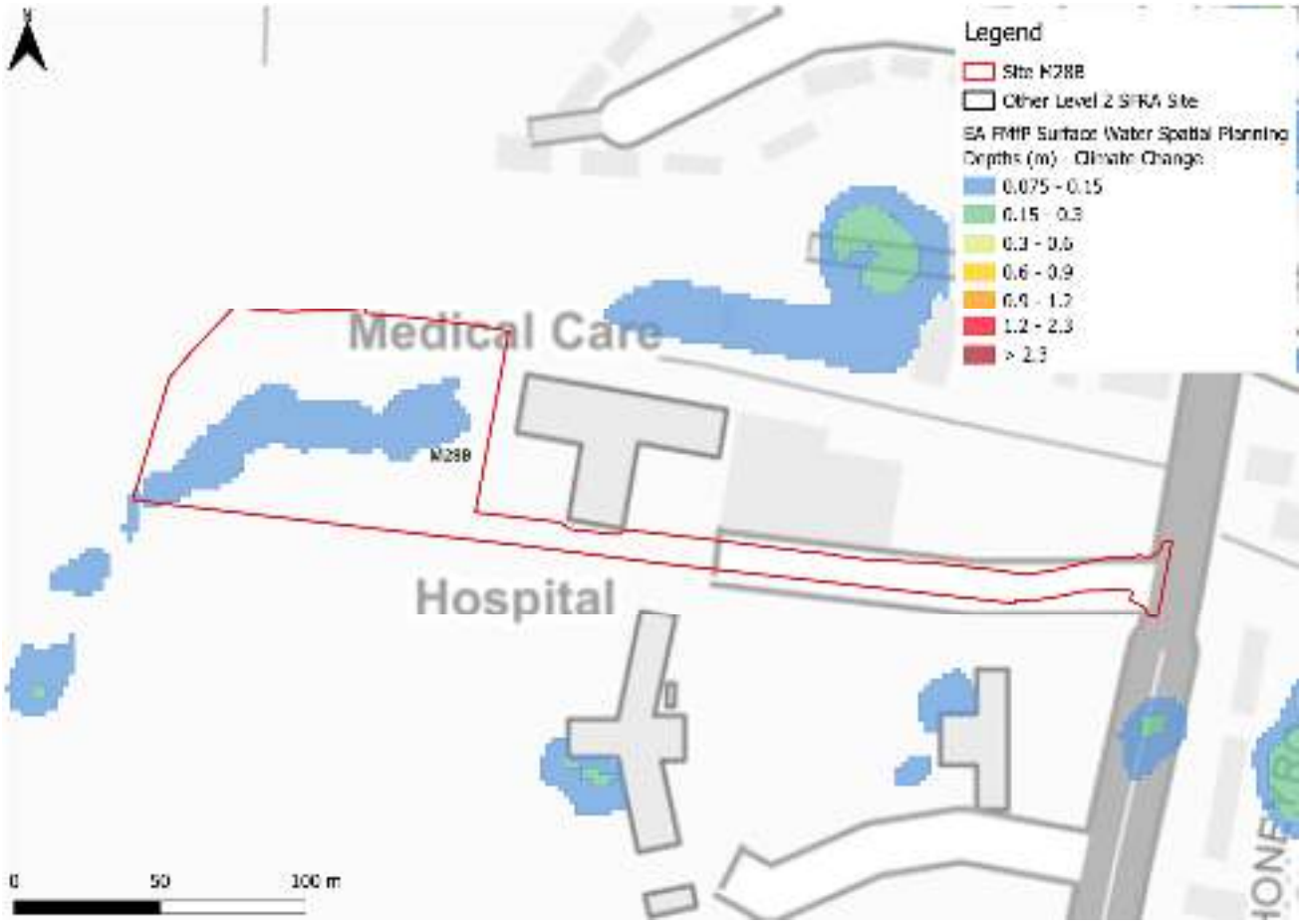

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is categorised as low (Figure 3-6).

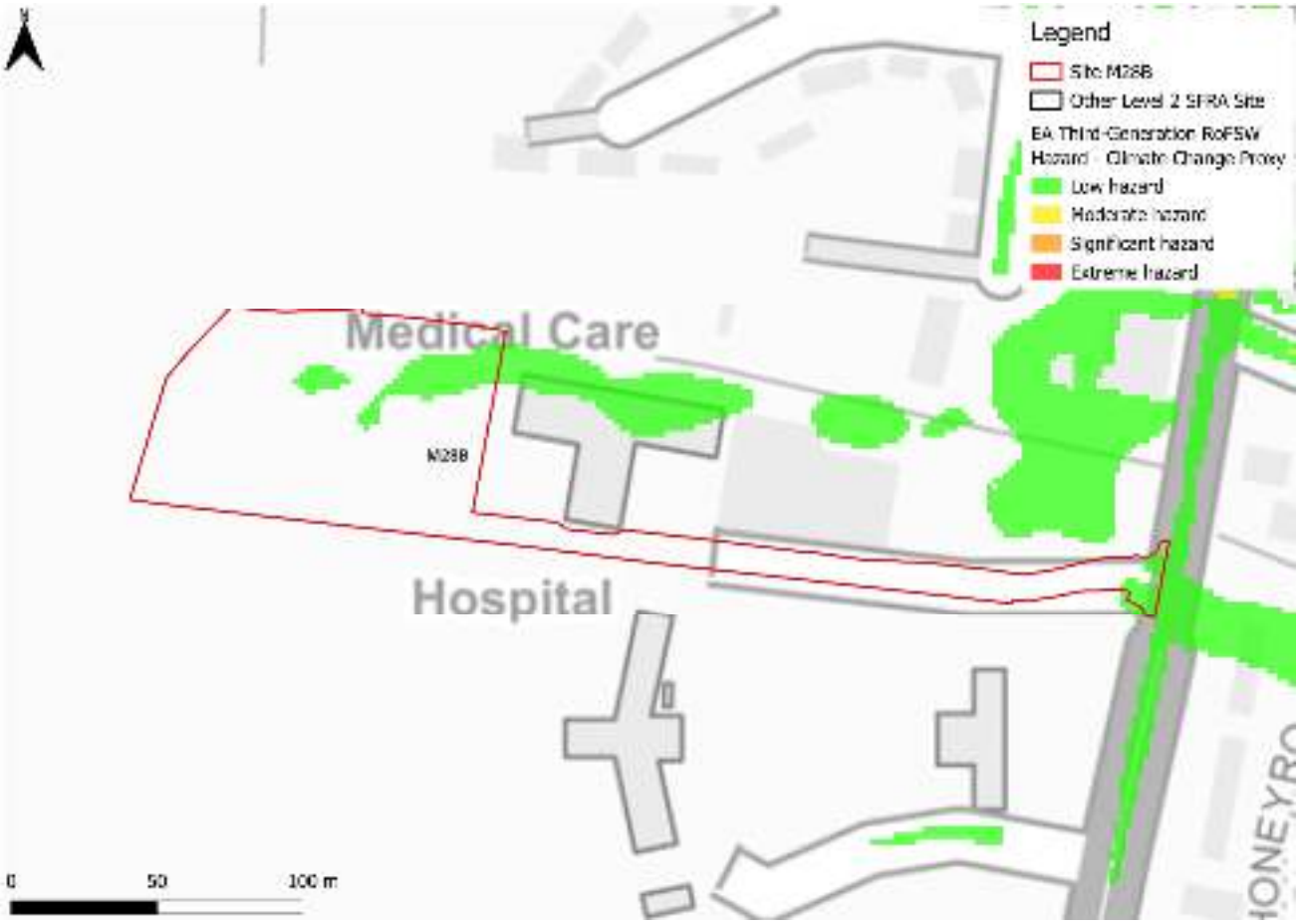

Figure 3-6: Low risk event surface water flood hazard[1], as a proxy for the medium risk event plus climate change (Third generation - Risk of Flooding from Surface Water map)

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There have been 16 recorded sewer flooding incidents within the Moreton West Ward.

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

- Current risk to the site is predominantly low, with 73% of the site being outside of the 0.1% AEP surface water flood extent. There is a flow path through the west of the site in both the present day and future 0.1% AEP surface water flood events. However, depths are shallow and therefore it may be possible to mitigate surface water flood risk onsite. Ideally, this natural flow path would be left in place to flood naturally. However, this would likely limit the number of plots available on the site.
- Risk to the site is shown to slightly increase in extent within the site when considering the impact of climate change, however depths remain shallow.
- A drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment

should apply. The developer should consult the LLFA and follow local and National SuDS guidance.

- Safe access and escape routes would likely be achievable via Stow Road.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within one catchment, namely, the Evenlode (Source to Four Shires S) and Longborough Stream 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 F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications. The site is at predominantly at high risk of groundwater emergence. 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.

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, limestone and sandstone (Figure 5-2), which will have variable permeability and porosity. The bedrock is overlain with superficial deposits of diamicton which is generally of low permeability. Based on the groundwater emergence map and the underlying geology, infiltration SuDS are unlikely to be appropriate at this site. Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets. Residual risk at this site comes from the potential blockage or structural failure of the culvert beneath Stow Road to the east of the site.

6.1 Potential blockage

A blockage or failure of the structure beneath Stow Road to the east of the site may cause water in the channel to back up and cause flooding to the site, depending on the severity of the blockage and magnitude of the flood event. This may impact the proposed access route to the site. Culvert capacity, and condition surveys may be required, including for consultation with the culvert owner.

Figure 6-1 indicates the location of the culvert beneath Stow Road. The potential residual risk to the site following a blockage of this asset should be assessed through the site-specific FRA.

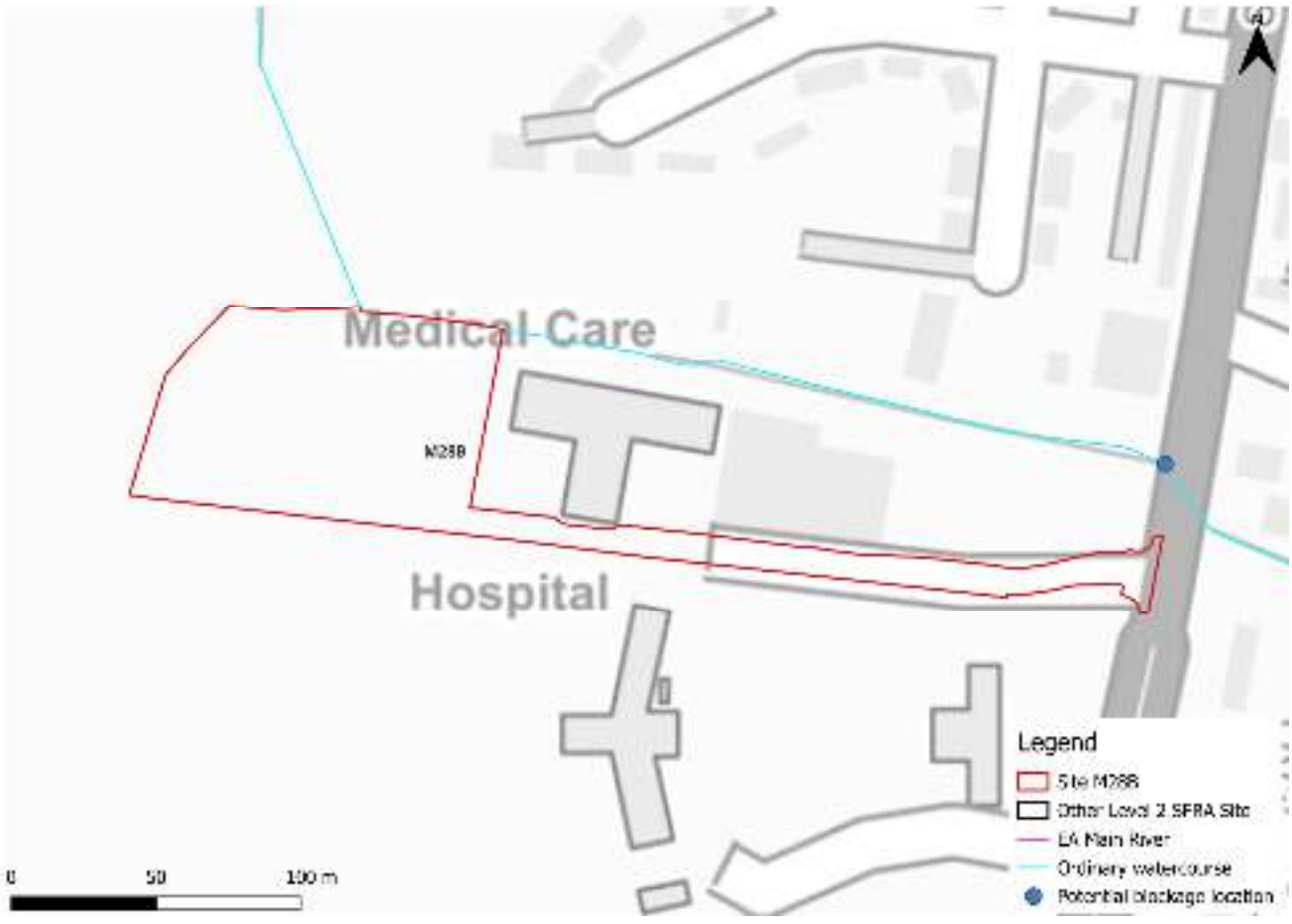

Figure 6-1: Potential blockage location

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. The site is not modelled to be at risk from reservoir flooding.

6.3 Observations, mitigation options and site suitability - residual risk

- The site is at potential residual risk from a blockage of the culvert beneath Stow Road to the east of the site. The site-specific FRA should consider modelling a blockage scenario to understand whether there would be any additional risk to the site.
- Areas adjacent to culverts and bridges are at particular risk from the rapid onset of fast flowing and deep flooding, with little or no warning if structures become blocked. Emergency plans must be in place for such areas and safe access and escape routes must be in place for the lifetime of development. Resistance and resilience measures may also need to be put in place to manage residual flood risk when avoidance measures have been exhausted.
- The LPA should use the information on residual risk in this Level 2 SFRA to state in the local plan strategic policies a preferred mitigation strategy for ensuring development will be safe throughout its lifetime in relation to urban form, risk management and where flood mitigation measures are likely to have wider sustainable design implications (para 042, FRCC-PPG).

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 residential development and is partially located within Flood Zone 3a. The risk is confined to the floodplain of the unnamed watercourse along the northern boundary of the site, according to the Flood Map for Planning. It should be possible for this site to pass the Exception Test, based on current information, assuming the risk area along the unnamed watercourse can be incorporated into site design as a blue green corridor with no development. Were new information to made available, the Exception Test should be reapplied.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- A no development buffer should be in place along the floodplain of the unnamed watercourse in the form of a blue green corridor, which can provide a flood storage function as well as providing BNG, ecological, amenity, social, and wellbeing benefits.
- All development should be directed to Flood Zone 1 outside of the climate change risk area.
- However, the EA may expect detailed modelling of the unnamed watercourse to be carried out at the site-specific FRA stage to robustly inform on present day and future risk to the site, including depths and hazards.
- There is a shallow surface water flow path through the east of the site in the 0.1% AEP present day event. A drainage strategy should ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply with consideration of local and national SuDS guidance.
- Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.
- The FRA should undertake a capacity and condition assessment of the culvert beneath Stow Road to the east of the site.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Strategic extension to the North and West of Mickleton

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Contract

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JBA Project Code	2025s1921

This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson-Jones 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 June and August 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 for their assistance with this work.

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Contents

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the strategic extension to the North and West of Mickleton site. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Strategic extension to the North and West of Mickleton

- Location: Mickleton (NGR 415580, 244029)
- Existing site use: Agricultural land and buildings
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential led mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 69.5
- Watercourse: Norton Brook, unnamed ordinary watercourses
- Environment Agency (EA) flood model: No detailed model available
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of fluvial flood extents (depths, velocities and hazards not available)
    - Assessment of surface water flood extents, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

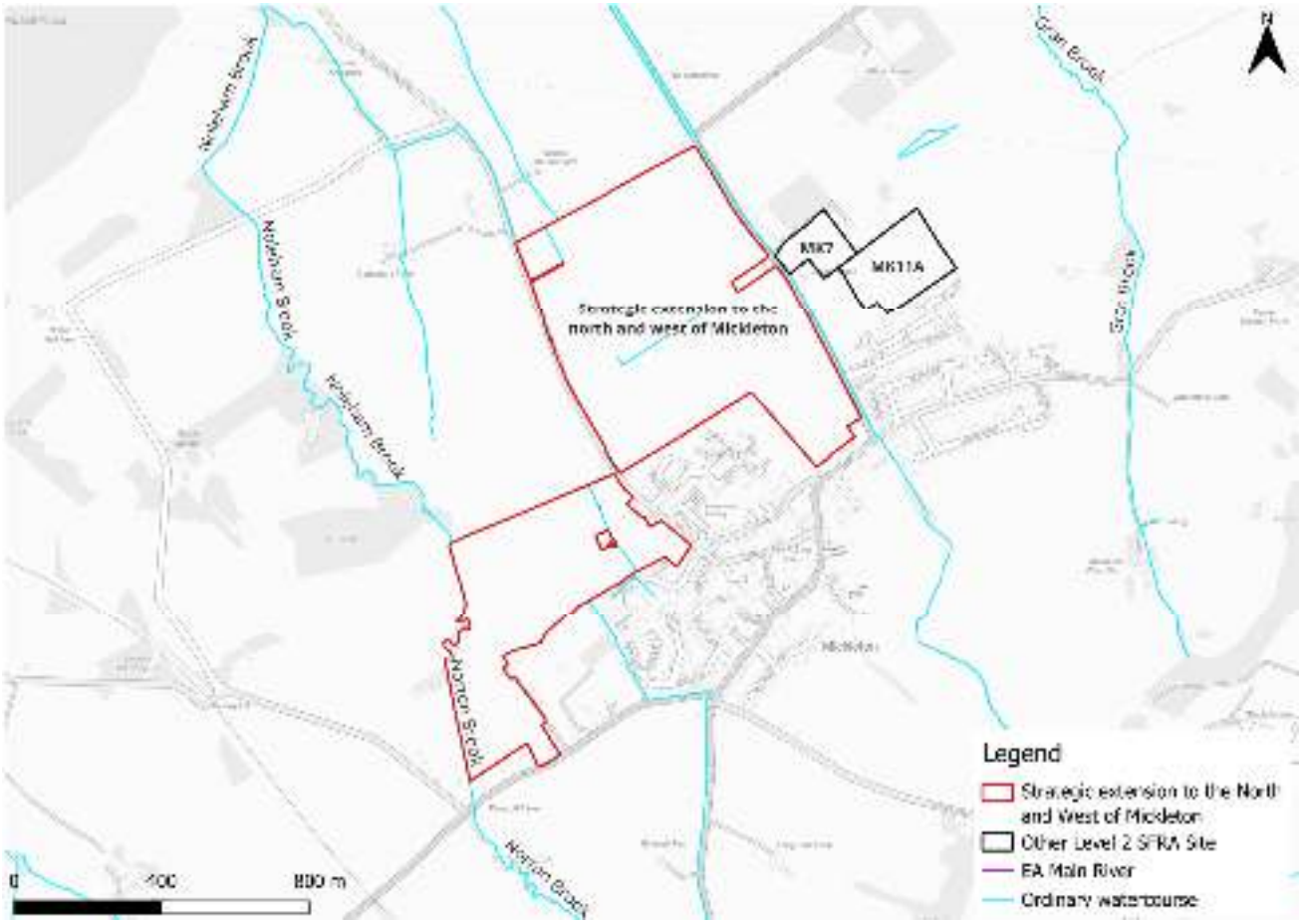

Figure 1-1: Site location boundary

There are areas of higher elevation in the south of both site parcels, with the land sloping down towards the north (Figure 1-2).

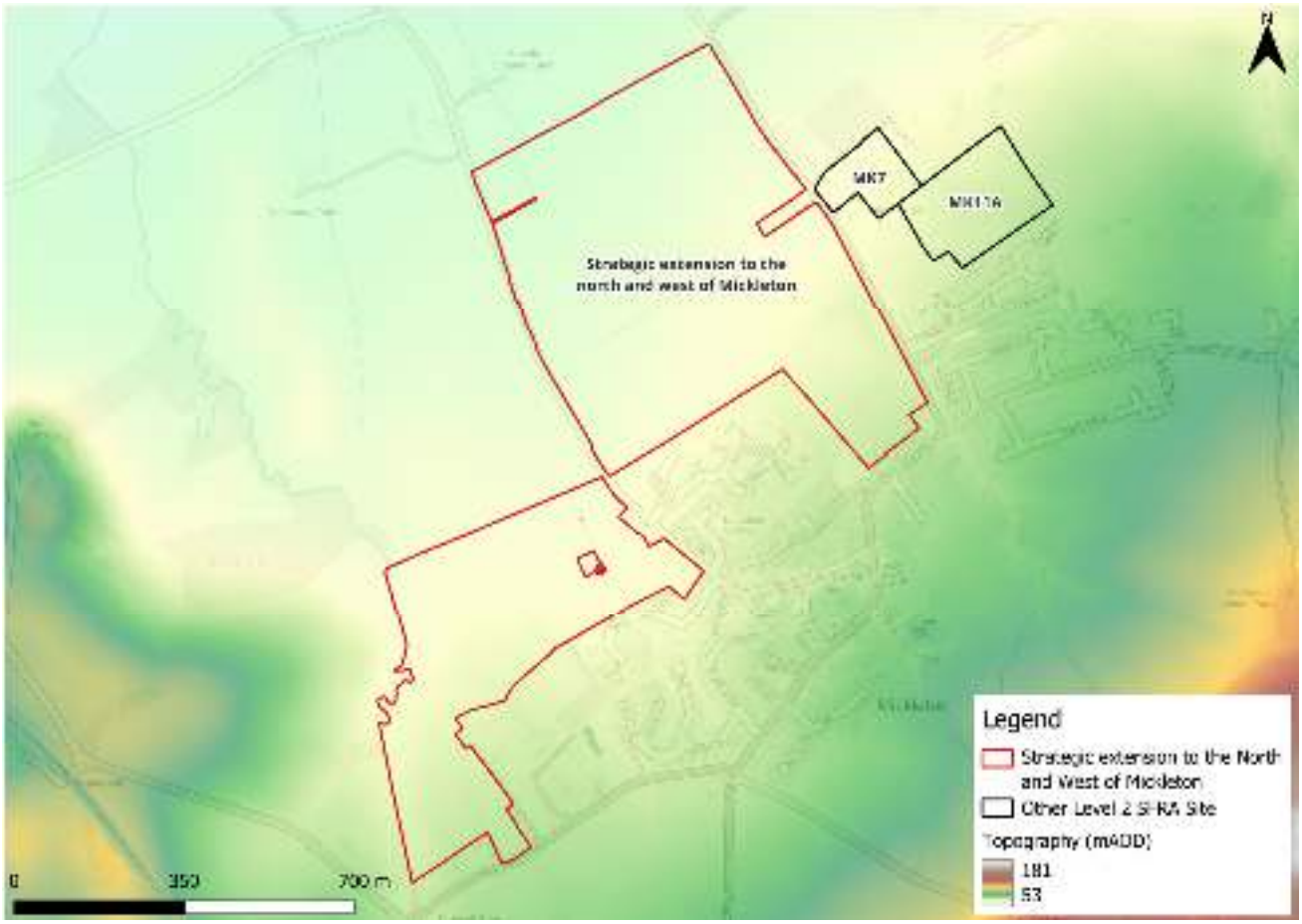

Figure 1-2: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 SFRA, the southwestern site parcel is shown to be at flood risk from rivers. As shown in Figure 2-1, Norton Brook is present adjacent to the western boundary of the southwestern site parcel which poses a risk of fluvial flooding to the site, based on the flood zones. Please note, the Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

Functional floodplain is present onsite along the western boundary of the southwestern site parcel. The functional floodplain in this location for each watercourse is based on the EA's New National Model (NNM) dataset 'Rivers and Sea 3.3% defended flood risk extents - present day'. There should be no development within the functional floodplain. The Flood Map for Planning flood zones here are also based on the NNM dataset. Flood depths and hazards therefore are not available for interrogation.

The majority of the remaining area of the southwestern site parcel and the entire northeastern site parcel is located within Flood Zone 1 and therefore at low risk of flooding from rivers.

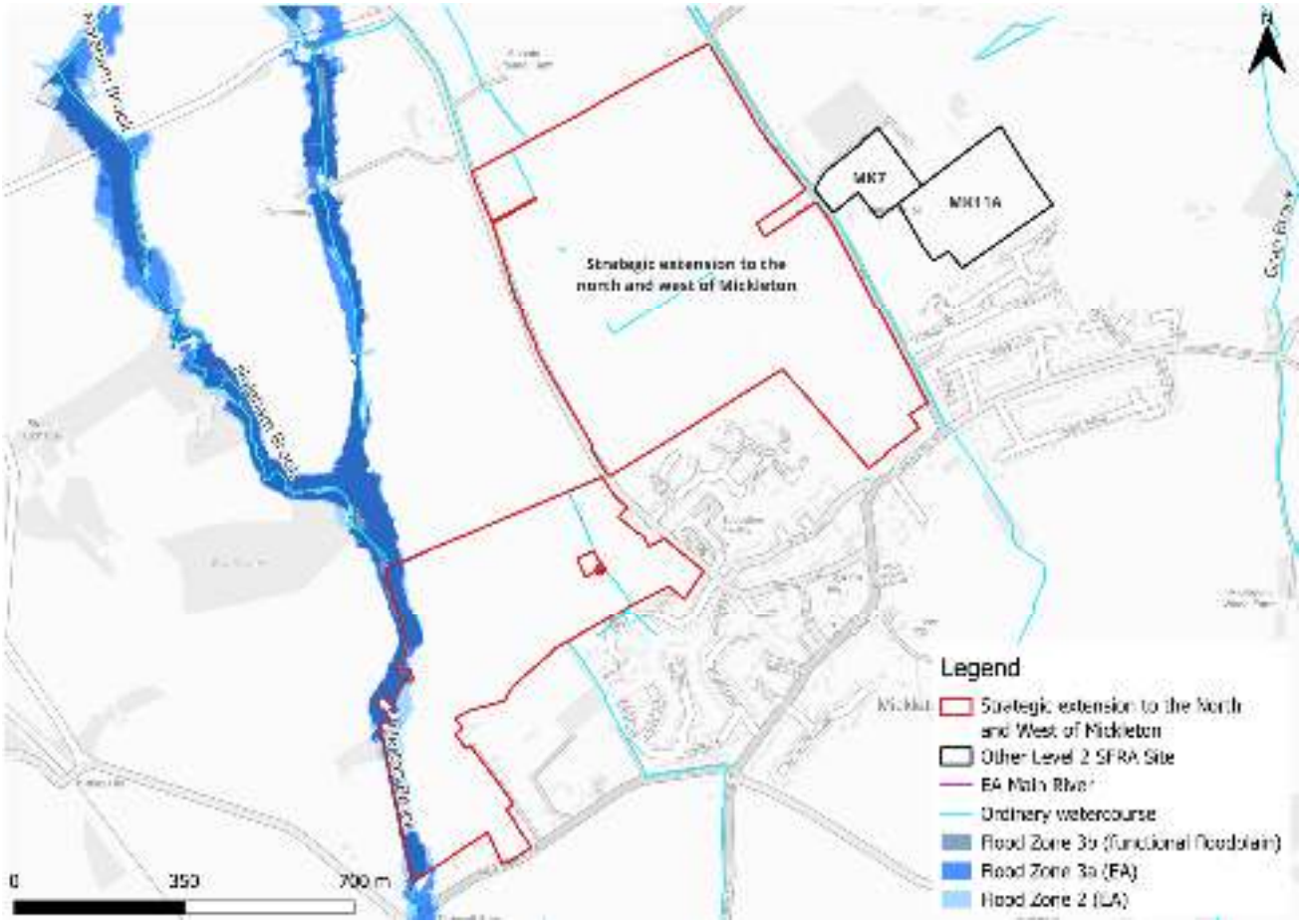

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Avon Warwickshire Management Catchment. The central allowance within this catchment is 21% on peak flows (Table 2-1). There is no local detailed model for Norton Brook, therefore the required event cannot be assessed.

Table 2-1: Modelled climate change allowances for peak river flows within the Avon Warwickshire Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	7	12	22
2050s	8	14	31
2080s	21	32	59

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of climate change on Flood Zone 3a and Flood Zone 2 combined. There is no significant increase in the extent of fluvial flooding when considering climate change.

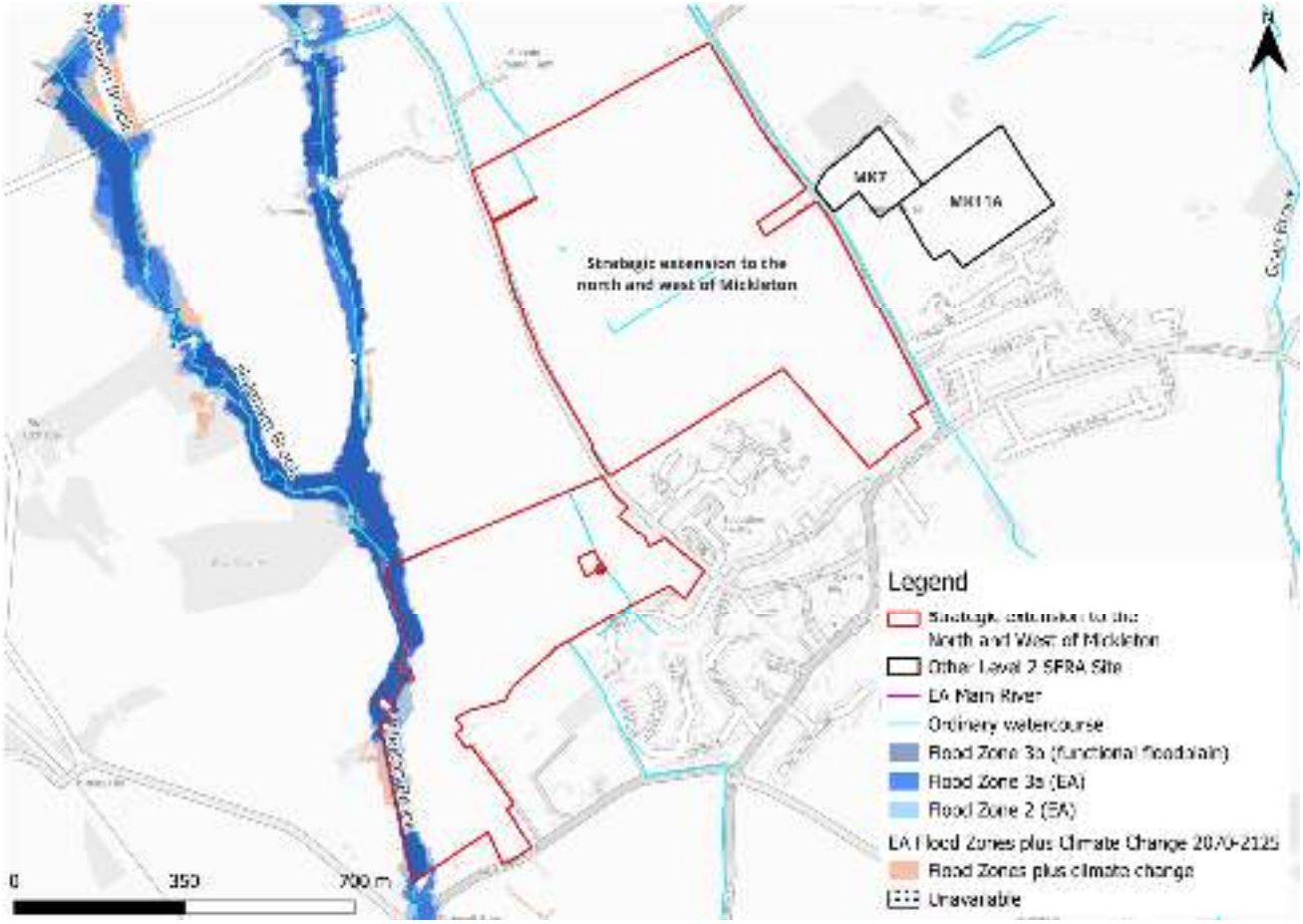

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There have been ten recorded flooding incidents within the Campden & Vale Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-3 shows that the site and wider area could benefit from riparian and floodplain tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

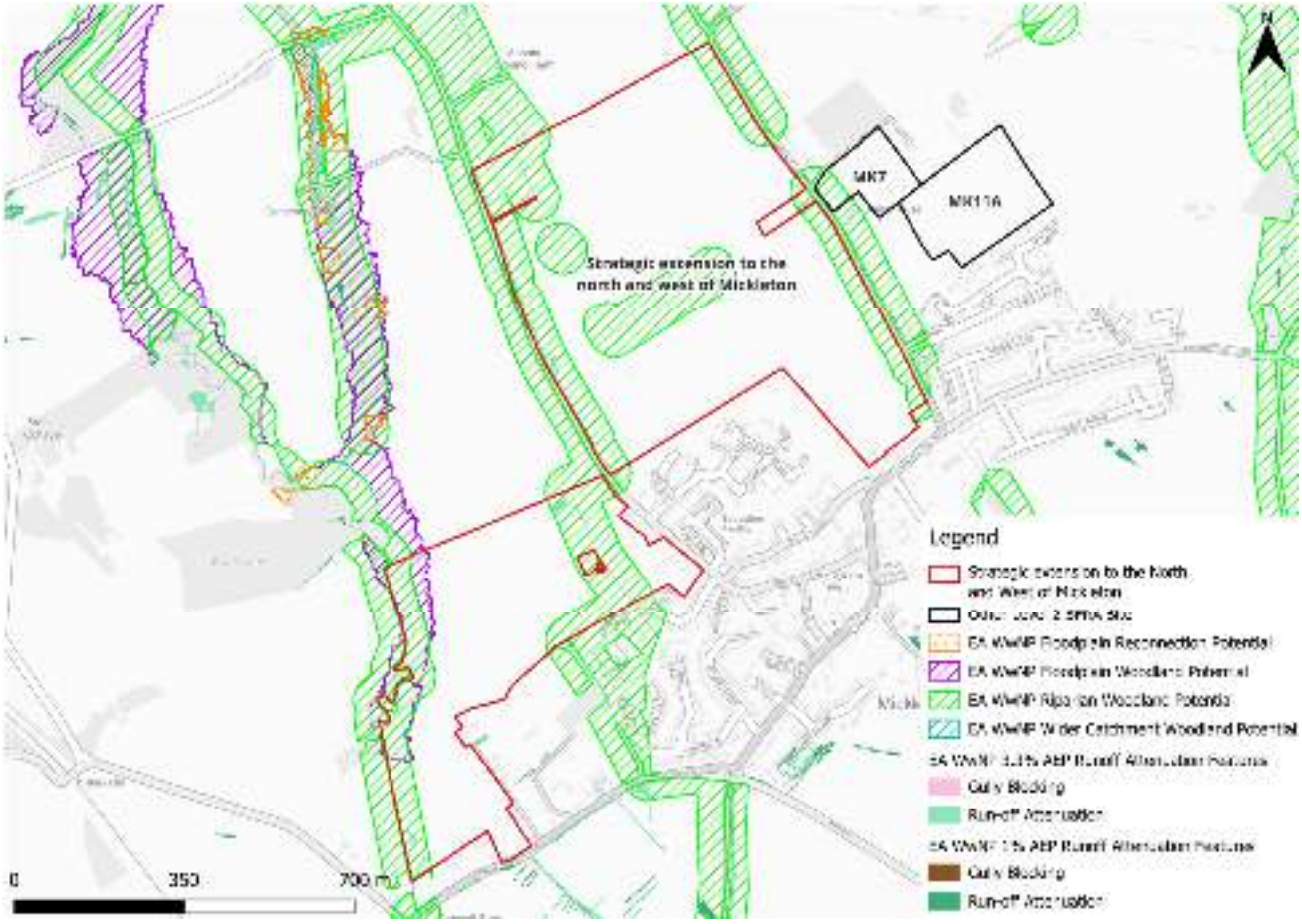

Figure 2-3: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warning and alerts

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 majority of the risk area within the southwestern site parcel is located within a FAA, namely the 'Middle Avon Rugby to Bidford' FAA, as shown in Figure 2-4.

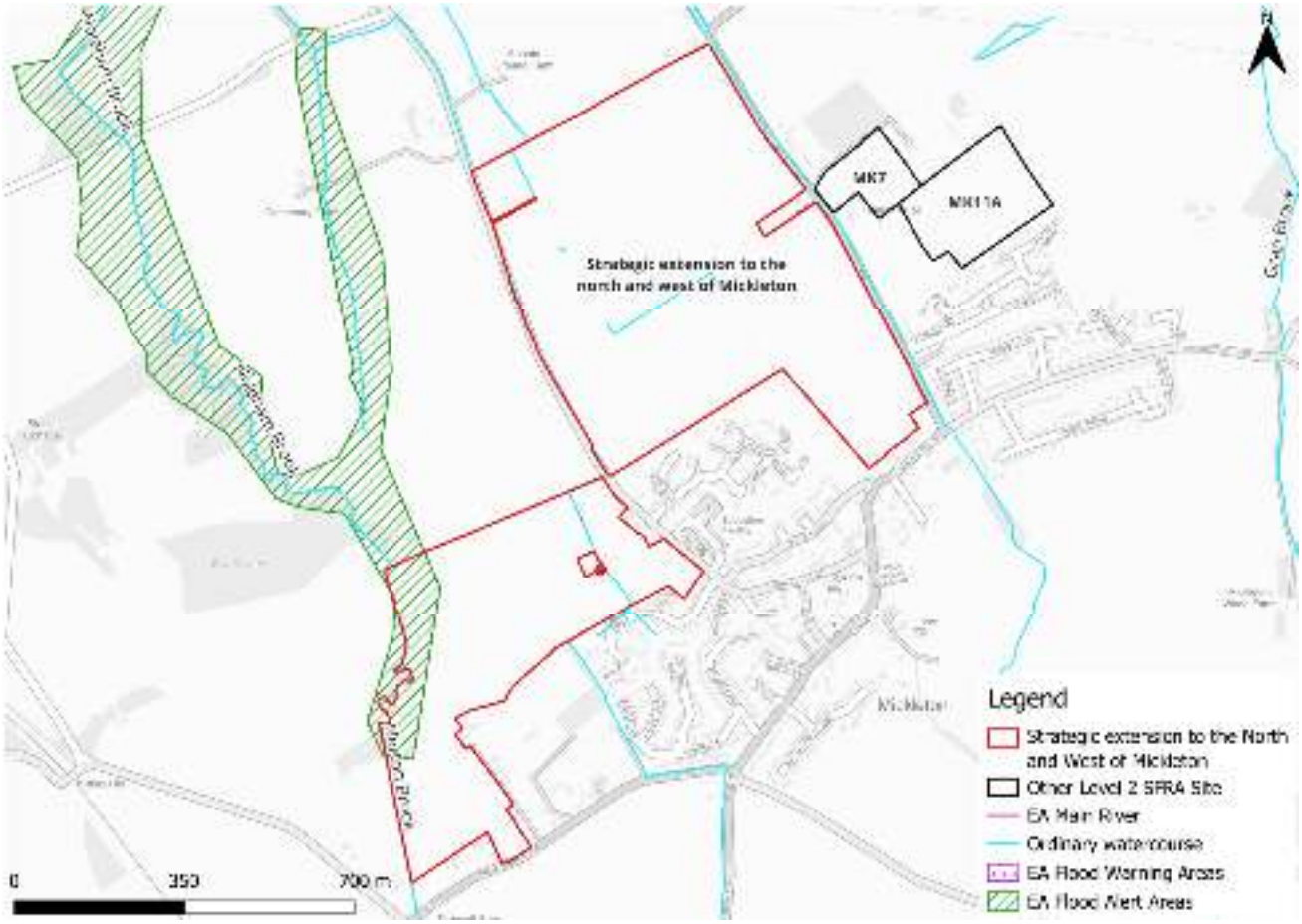

Figure 2-4: Flood warnings and alerts

2.5.2 Access and escape routes

Based on the Flood Map for Planning, safe access and escape routes could likely be achieved during a flood event via multiple locations surrounding the site (Figure 2-5).

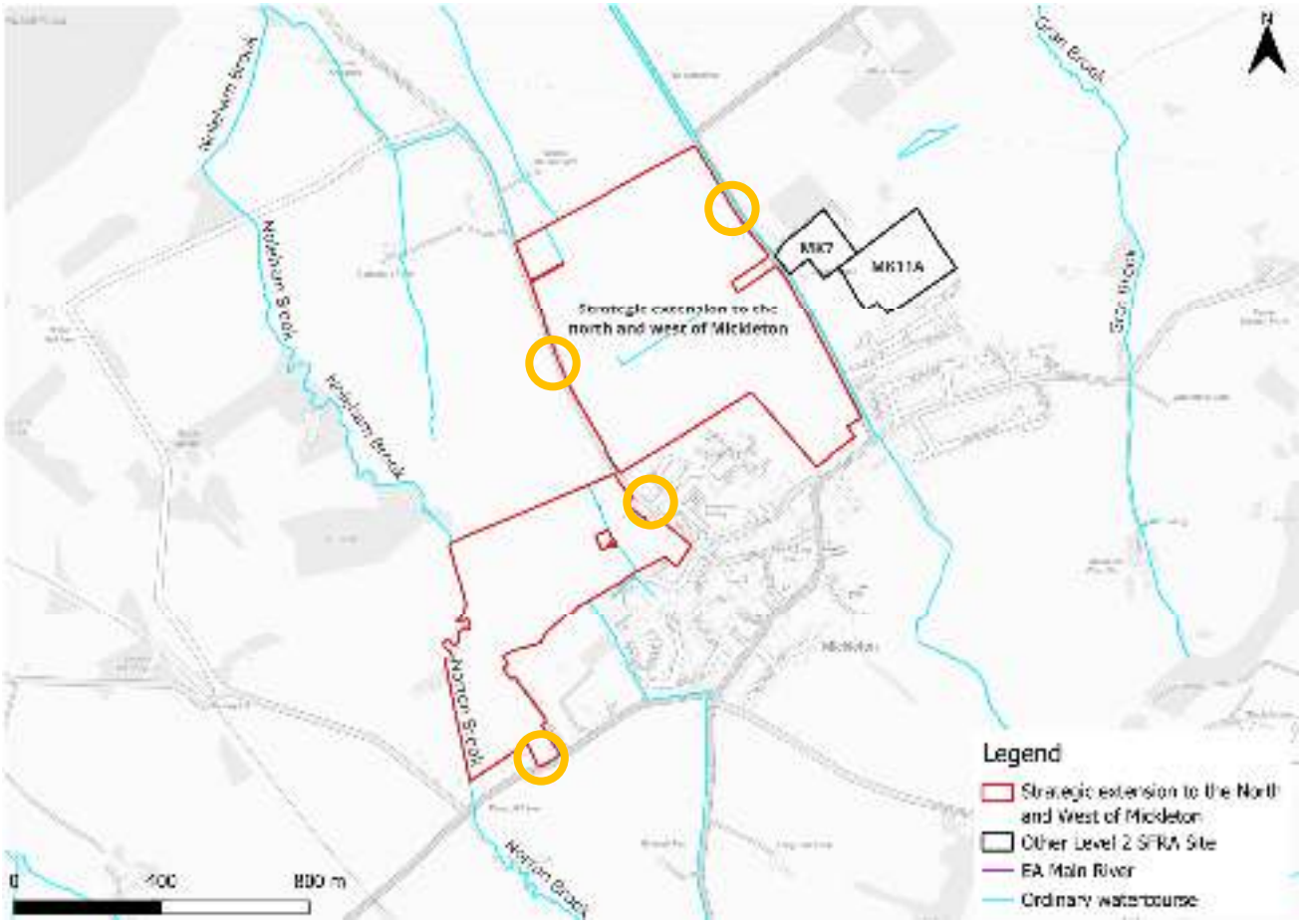

Figure 2-5: Potential access and escape routes

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

- Observations:
  - The site borders the Norton Brook ordinary watercourse. However, most of the site is located within Flood Zone 1 and outside of the Flood Map for Planning climate change extent and therefore mainly at low risk from rivers.
  - The risk from Norton Brook is based on the EA's NNM and not detailed modelling which is considered to be the most up to date information on fluvial risk to the site and surrounding area. However, the NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
- Mitigation:
  - A no development buffer should be in place along the floodplain of Norton Brook in the form of a blue green corridor, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits. All development should be directed to Flood Zone 1 outside of the climate change risk area.

- The EA will may expect detailed modelling of Norton Brook to be carried out at the site-specific FRA stage to robustly inform on present day and future risk to the site, including flood depths and hazards.
- EA flood alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.

- Access and escape:
  - Based on current information, safe access and escape routes appear achievable via multiple locations surrounding the site.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths Present Day

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extents map (May 2026), the site is predominantly at low risk of surface water flooding as shown in Table 3-1 and Figure 3-1. However, there is a significant surface water flow path present through the centre of the two site parcels, along the ordinary watercourse. There are also multiple flow paths through the northwestern site parcel. Surface water risk is present across the remaining areas of the site parcels as areas of scattered ponding in topographic low spots. Greatest surface water flood depths in the 1% AEP event are significant at between 0.9 and 1.2 m outside of the ordinary watercourse present onsite (Figure 3-2).

Safe access and escape routes are achievable via multiple locations surrounding the site.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
81	11	3	5

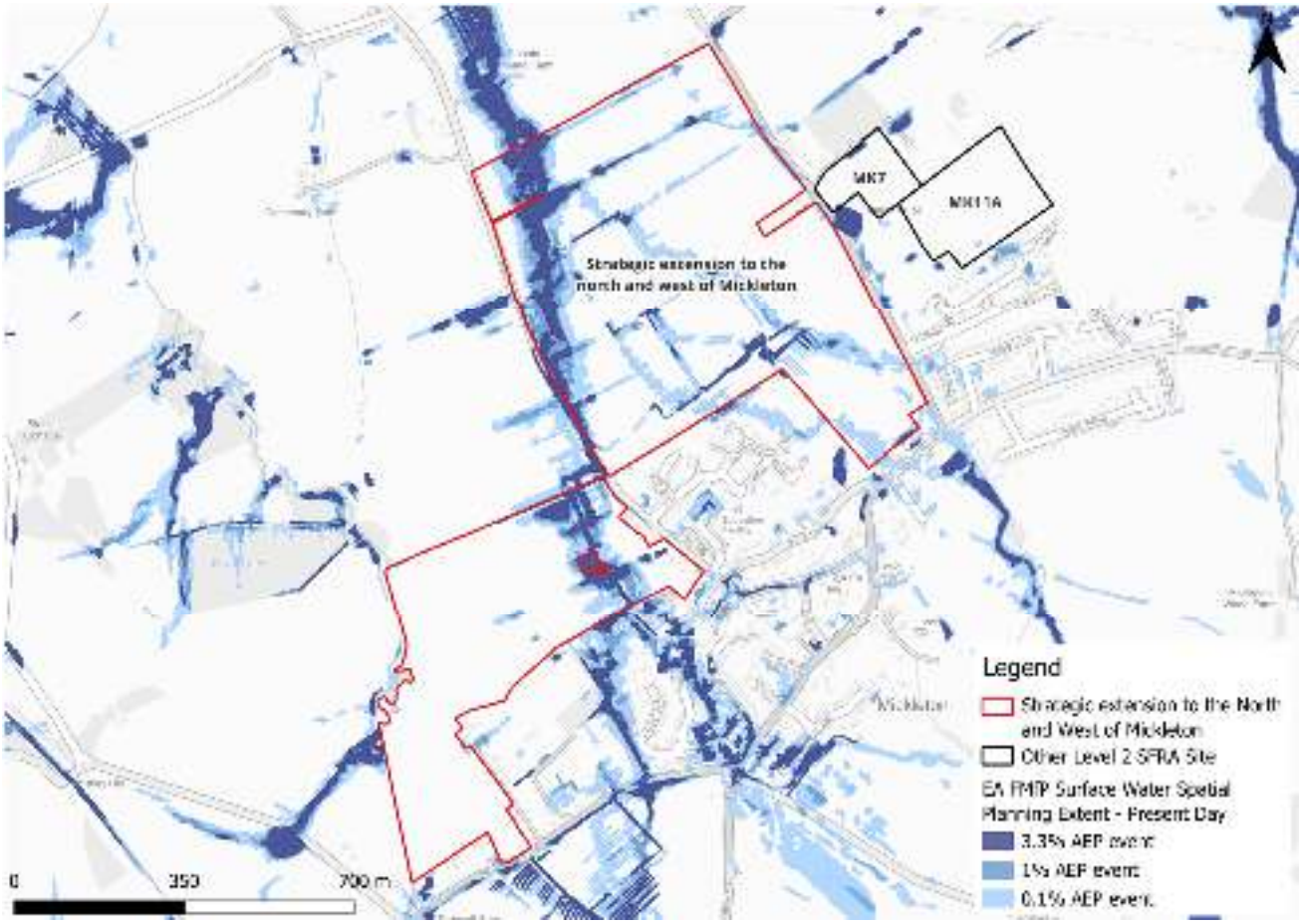

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

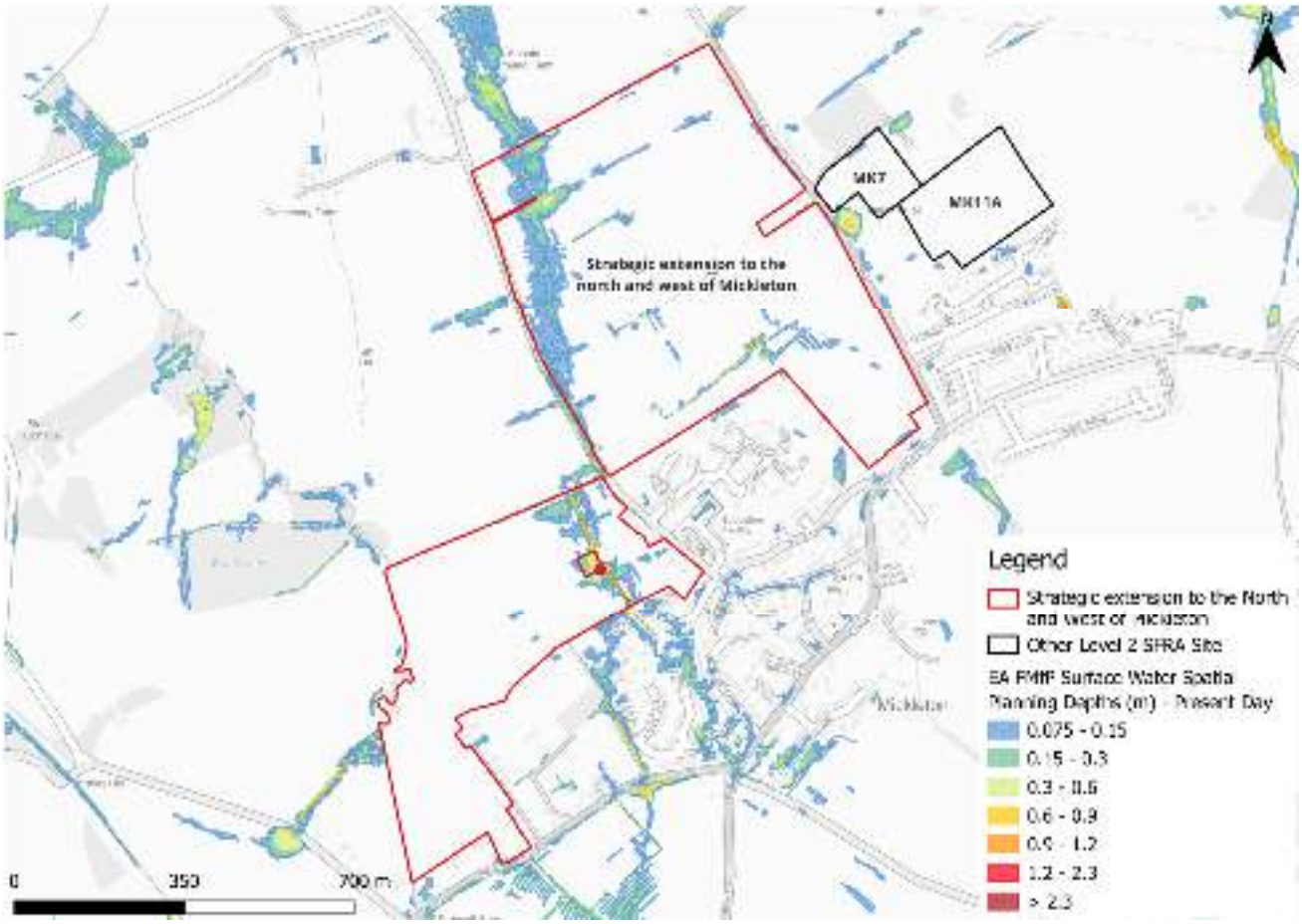

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows there to be some areas of 'significant' flood hazard (Figure 3-3). There are clear differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping whereby the RoFSW shows a much larger area to be at risk. Given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

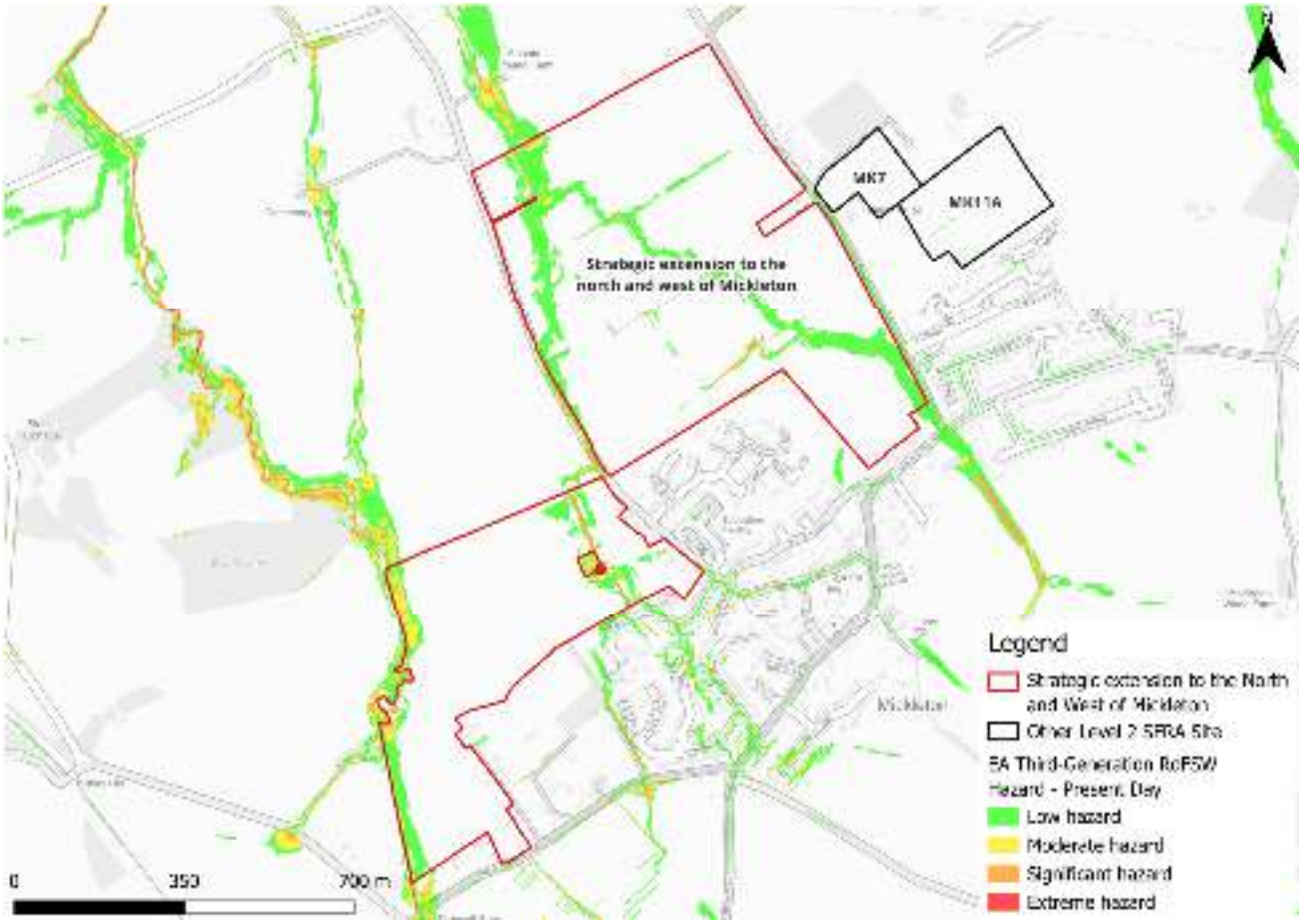

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day 1% AEP event surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRA's should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Avon Warwickshire management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Avon Warwickshire Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. There is a greater extent of flooding along the flow paths through the site in all events, with a particularly large increase in the 0.1% AEP plus climate change event. Flood depths in the 1% AEP event are shown to increase to greater than 1.2 m within a small area in the south of the northeastern site parcel (Figure 3-5).

Safe access and escape routes would likely remain achievable via several locations surrounding the site.

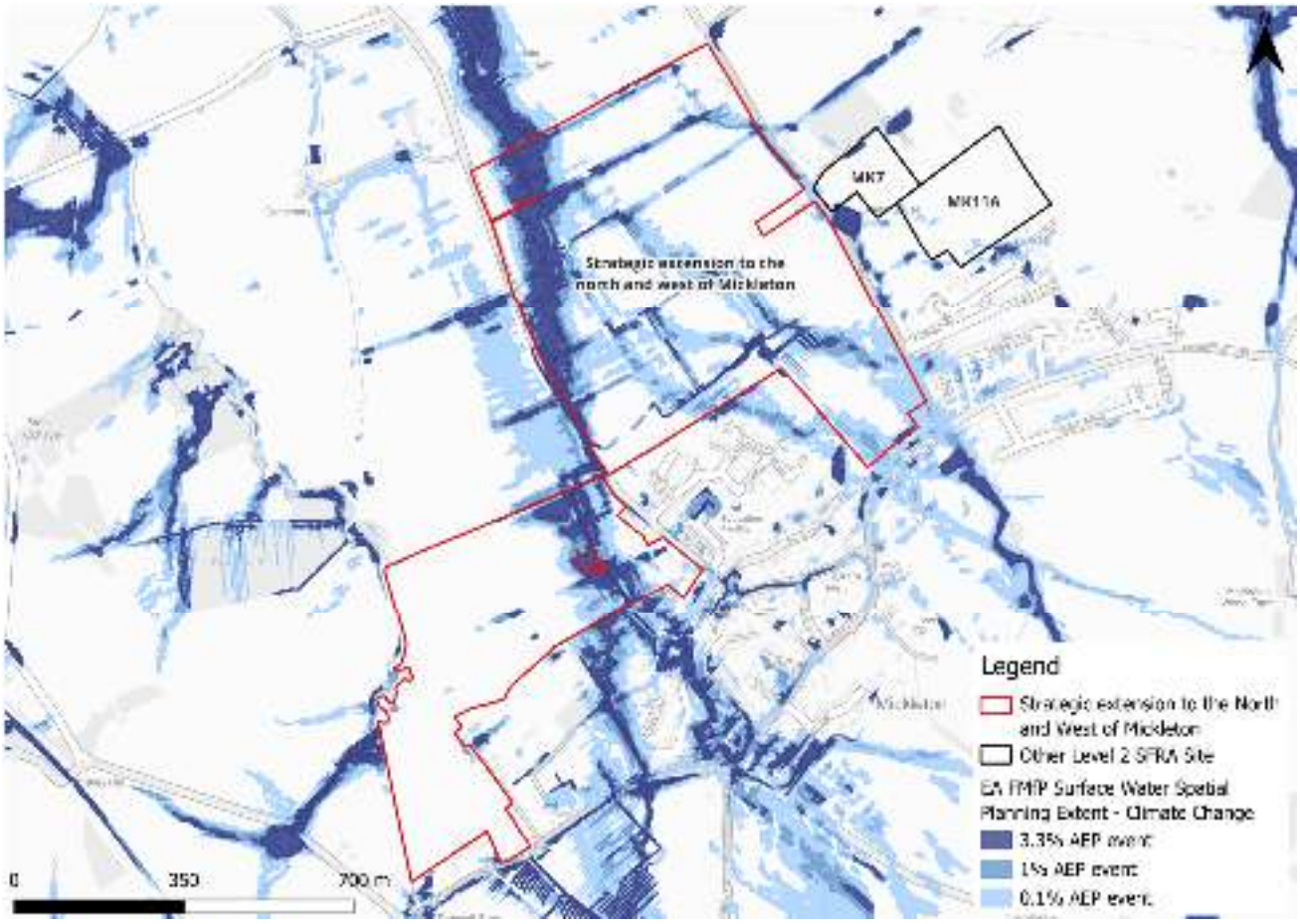

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

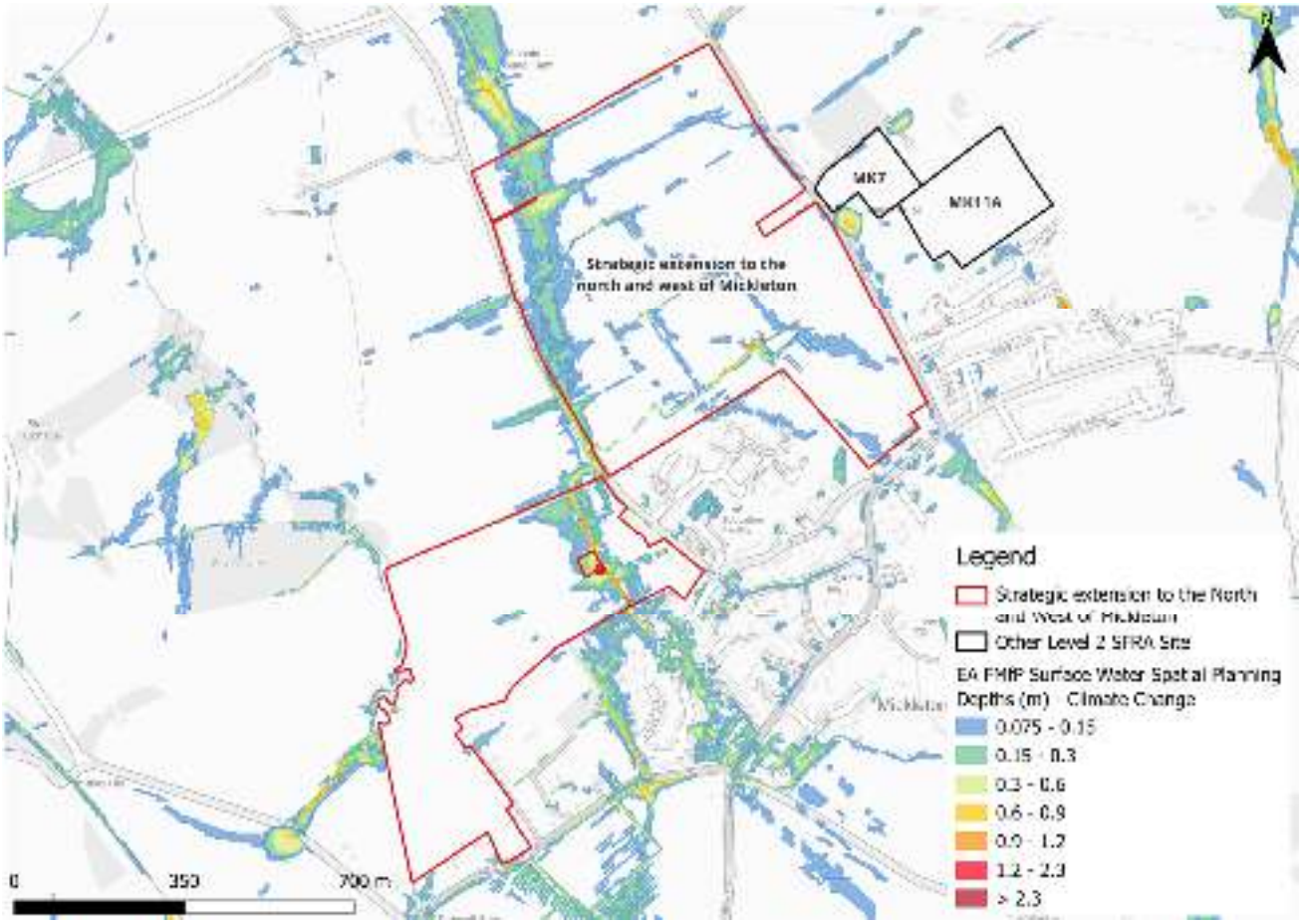

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event surface water flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is categorised as 'significant' (Figure 3-6).

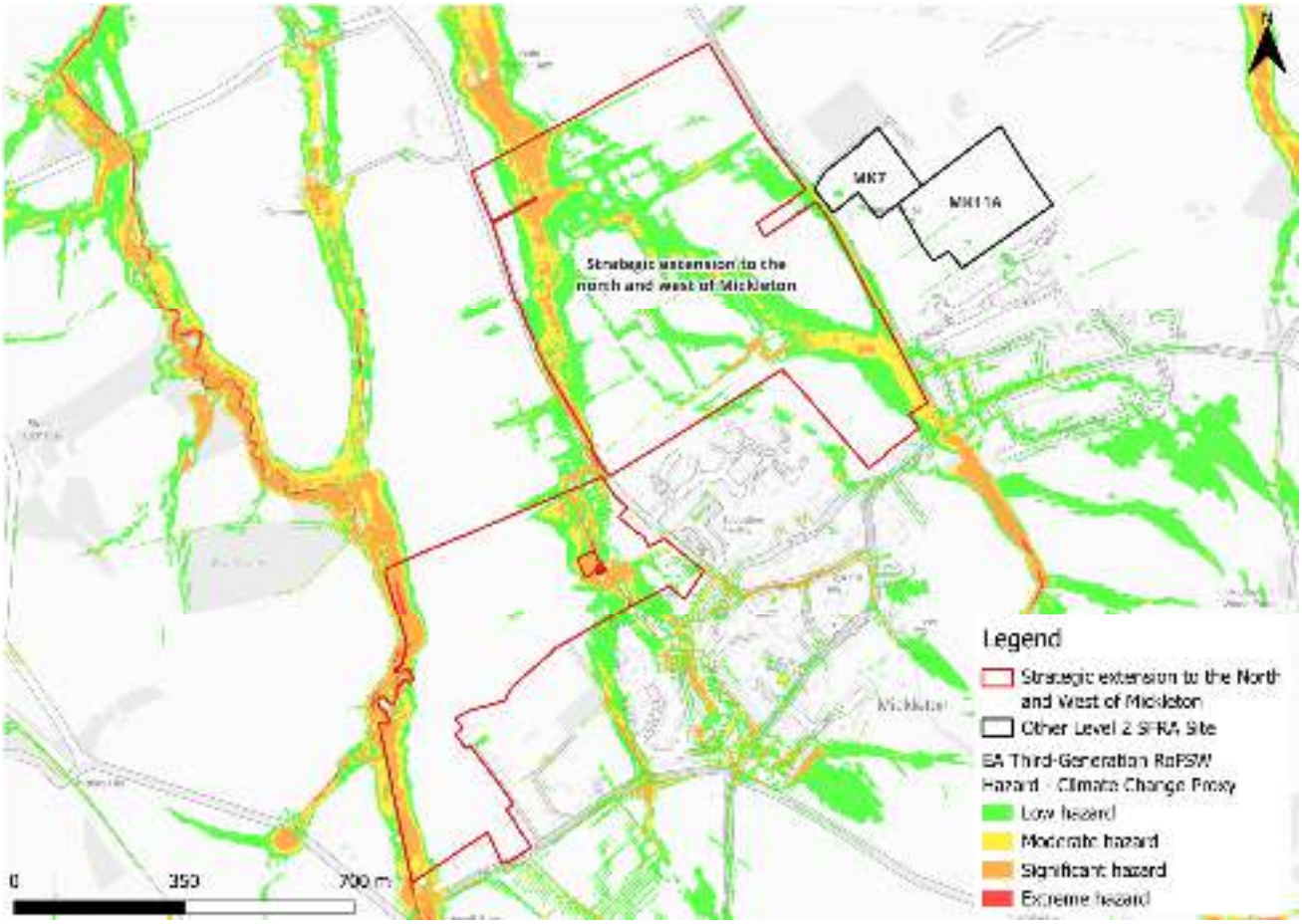

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day 0.1% AEP event surface water flood hazard as a climate change proxy

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There have been 22 recorded sewer flooding incidents within the Campden & Vale Ward.

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

- Current risk to the site is predominantly low, with 81% of the site being outside of the 0.1% AEP surface water flood extent. However, there is a significant surface water flow path present through the centre of the two site parcels, along the ordinary watercourse, and a number of smaller flow paths feeding it.
- The significant surface water flow path and contributary ditches onsite should be considered and included in site design and ideally left in place to flood naturally when required.
- Based on the surface water flood extents in the northeastern site parcel, it may be challenging to develop this parcel and mitigate surface water flood risk onsite.
- Risk to the site is shown to increase in extent within the site when considering the impact of climate change.

- A detailed drainage strategy must be carried out at the FRA stage to ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.
- Safe access and escape routes would likely be achievable via multiple locations when considering surface water risk.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within a medium sensitivity catchment, namely, the Noleham Bk - source to conf R Avon catchment. Planning considerations for sites at medium sensitivity to the cumulative impacts of development can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The entire site is located within an area where there is no risk of groundwater emergence. Infiltration SuDS may therefore be suitable at this site.

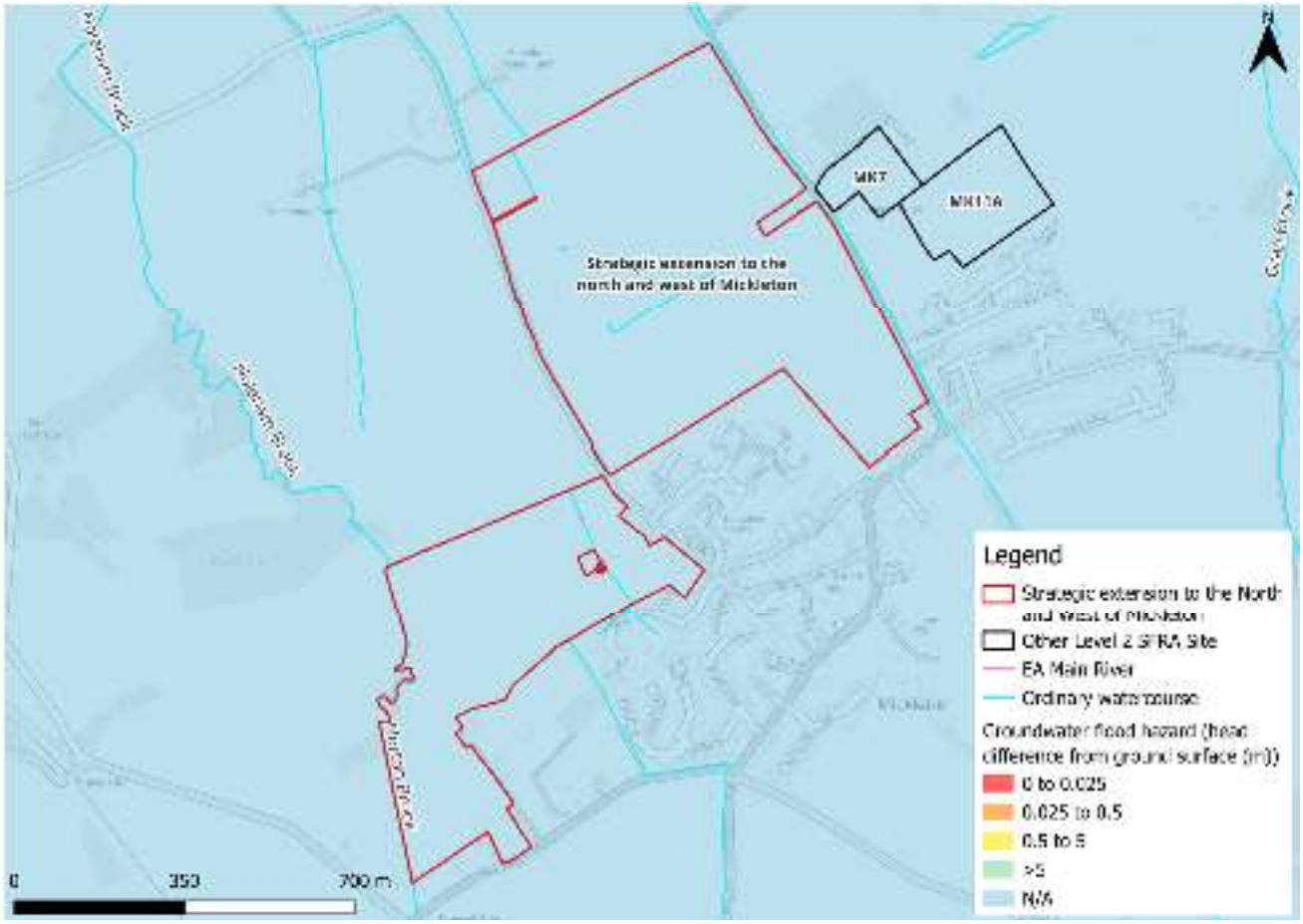

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, limestone and sandstone (Figure 5-2). Mudstone and siltstone generally have a low permeability and low level of porosity, reducing infiltration rates. There is no record of superficial deposits in the area.

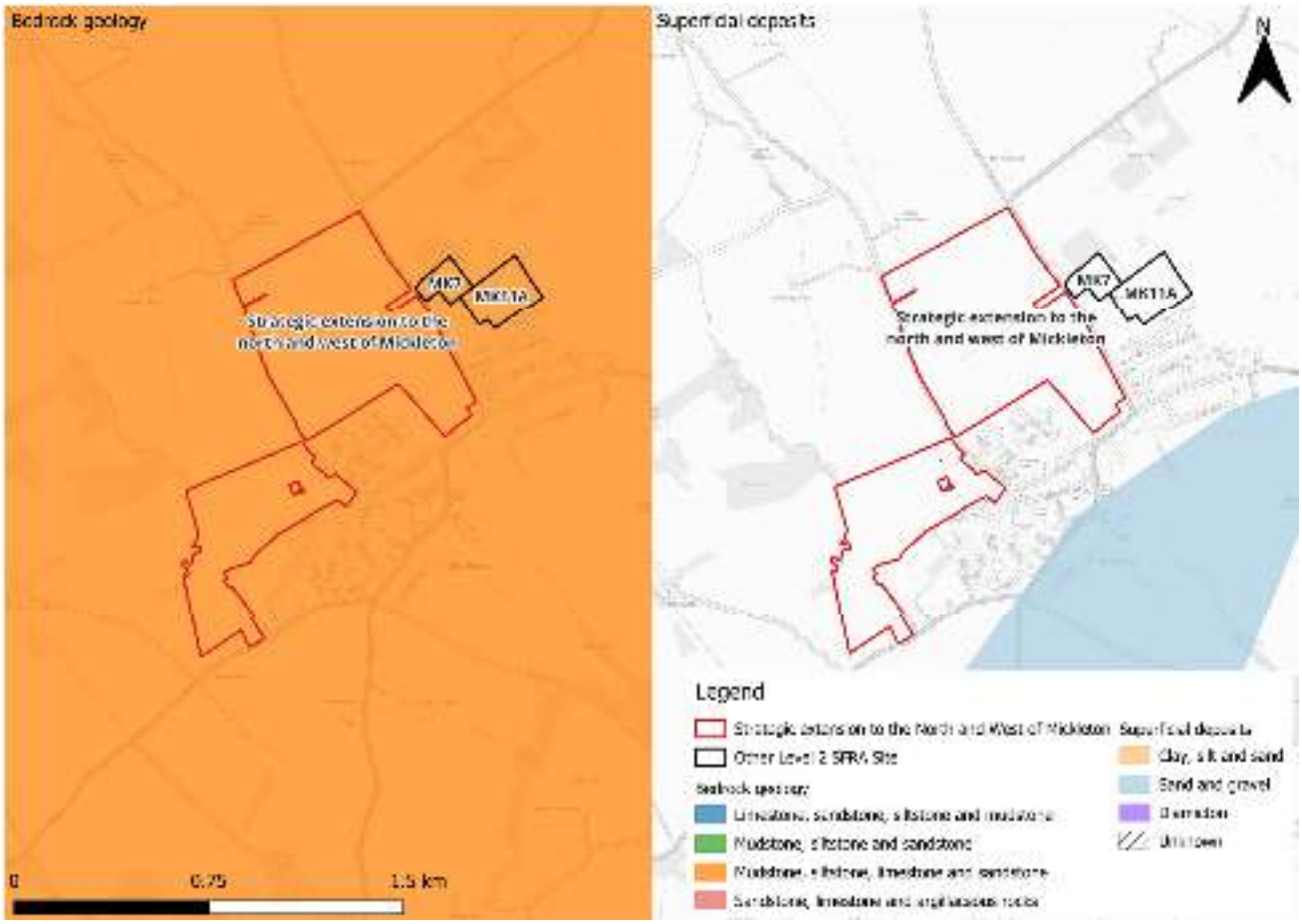

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets.

There is no potential residual risk to the 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. 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 residential development and is partially located within Flood Zone 3a. The site would likely pass the Exception Test given fluvial risk is confined to the boundary of the southwestern site parcel. However, the EA may require detailed modelling of Norton Brook may to inform the reapplication of the Exception Test.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- It should be possible to develop this site for residential uses given its location largely within Flood Zone 1 and surface water risk largely confined to distinct flow paths through the site.
- There should be no development within the area of functional floodplain present onsite. The risk area should be included within a blue green corridor offering multifunctional benefits alongside flood risk mitigation including BNG contributions, and social and amenity benefits.
- Updated modelling of Norton Brook may be carried out to robustly define the risk to the site for both present day and with climate change, including flood depths and hazards.
- Development should include the significant surface water flow paths through the site in site design. This would require a detailed drainage strategy.
- A drainage strategy should also ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply with consideration of local and national SuDS guidance.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Strategic extension to the south of Preston

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Contract

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Address	Phoenix House, Lakeside Drive, Centre Park, Warrington, WA1 1RX
JBA Project Code	2025s1921

This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson-Jones of JBA Consulting carried out this work.

Purpose and Disclaimer

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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 June and August 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 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 the strategic extension to the south of Preston. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Strategic extension to the south of Preston

- Location: Preston (NGR 404963, 200180)
- Existing site use: Agricultural land
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential led mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 100.4
- Watercourse: Unnamed ordinary watercourses
- Environment Agency (EA) flood model: No detailed model available
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of surface water flood extents, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

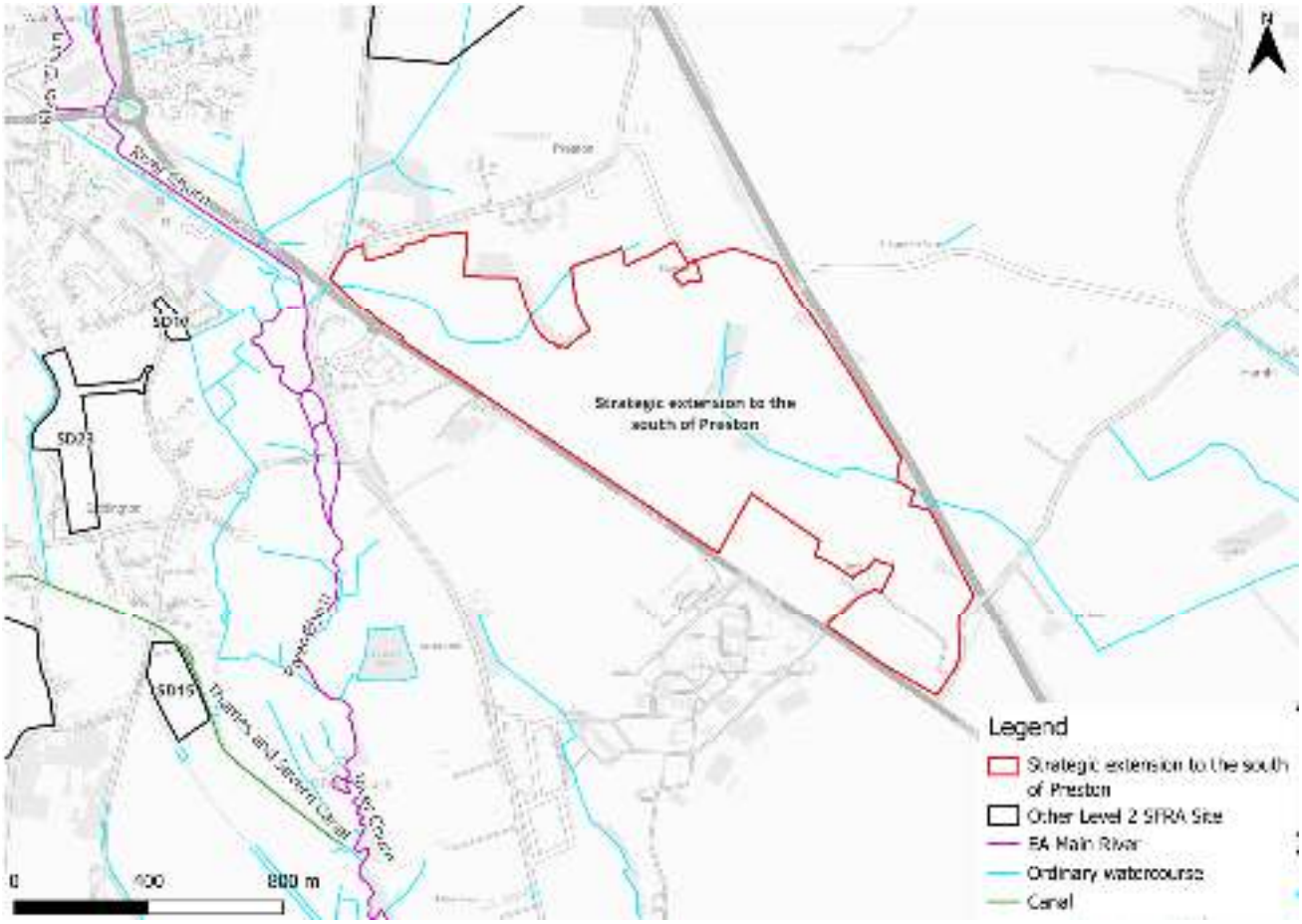

Figure 1-1: Site location boundary

The site is located at a higher elevation than the surrounding areas, with the highest elevation through the centre of the site, sloping towards the River Churn floodplain to the west and the Ampney Brook floodplain to the east (Figure 1-2).

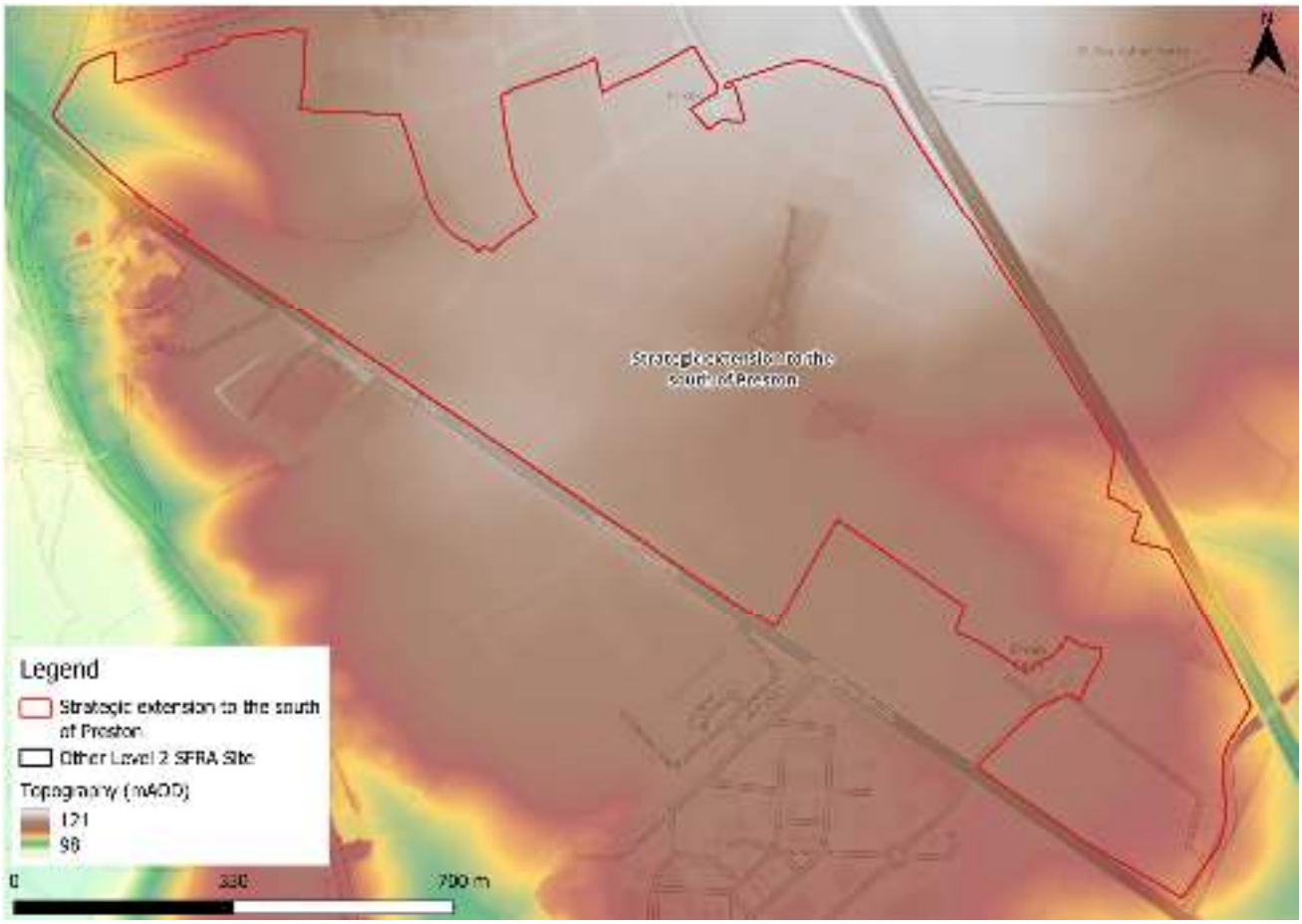

Figure 1-2: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 SFRA, the site is wholly located within Flood Zone 1 and therefore at low risk of flooding from rivers (Figure 2-1). Please note, the Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

There are two unnamed, unmodelled ordinary watercourses running through the site. The EA's New National Model (NNM) does not cover these watercourses, therefore the potential fluvial risk posed to the site cannot be assessed. This should be considered as part of a site-specific FRA.

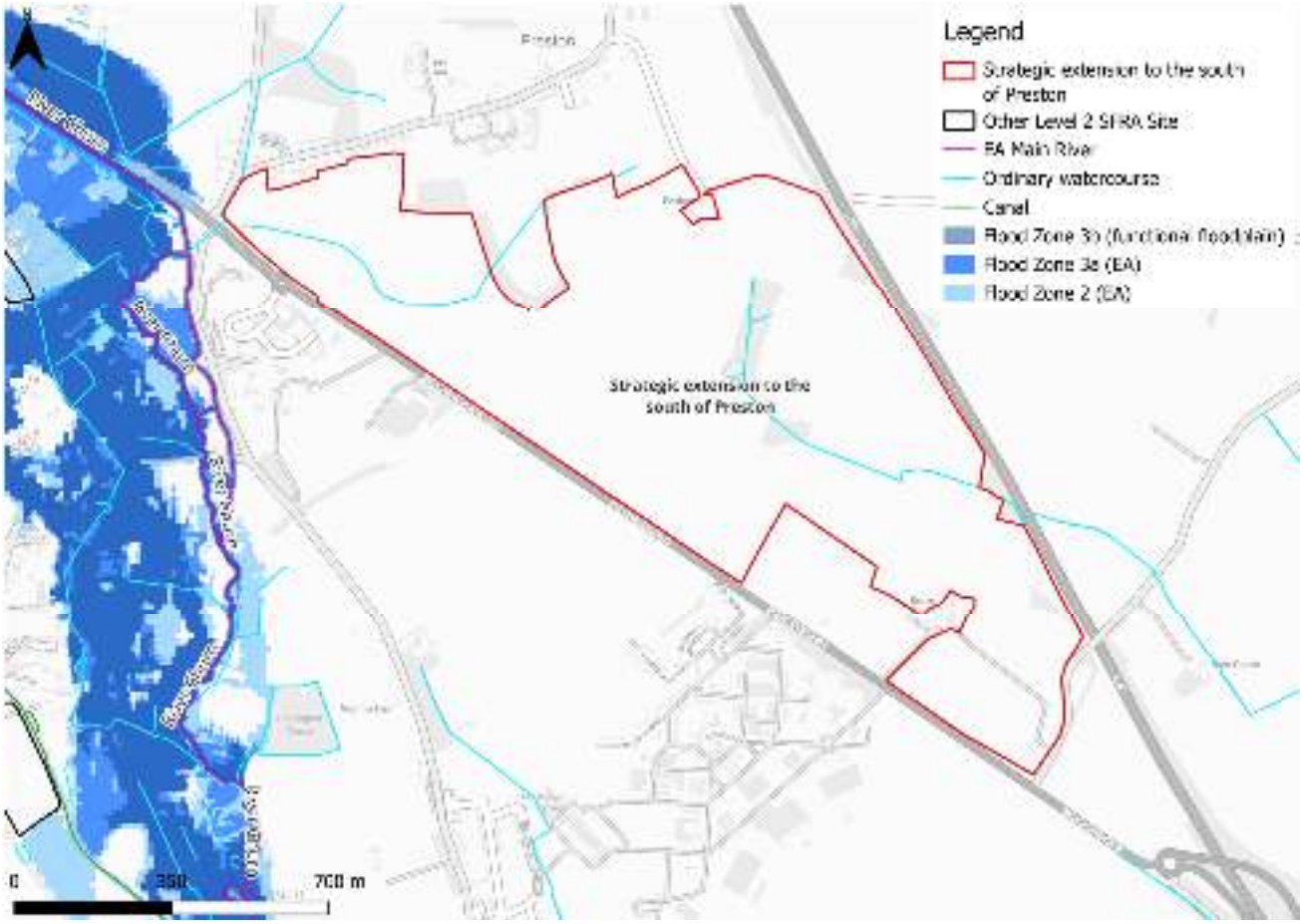

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Gloucestershire and the

Vale Management Catchment. The central allowance within this catchment is 26% on peak flows (Table 2-1). There is no local detailed model for the unnamed watercourses through the site, therefore the required event cannot be assessed.

Table 2-1: Modelled climate change allowances for peak river flows within the Gloucestershire and the Vale Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	11	17	33
2050s	11	19	43
2080s	26	41	84

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Based on the EA's Flood Map for Planning - Flood Zones plus Climate Change dataset, the site is not shown to be at increased risk of fluvial flooding when considering climate change.

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There have been six recorded flooding incidents within the Siddington & Cerney Rural Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-2 shows that the site and wider area could benefit from riparian tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

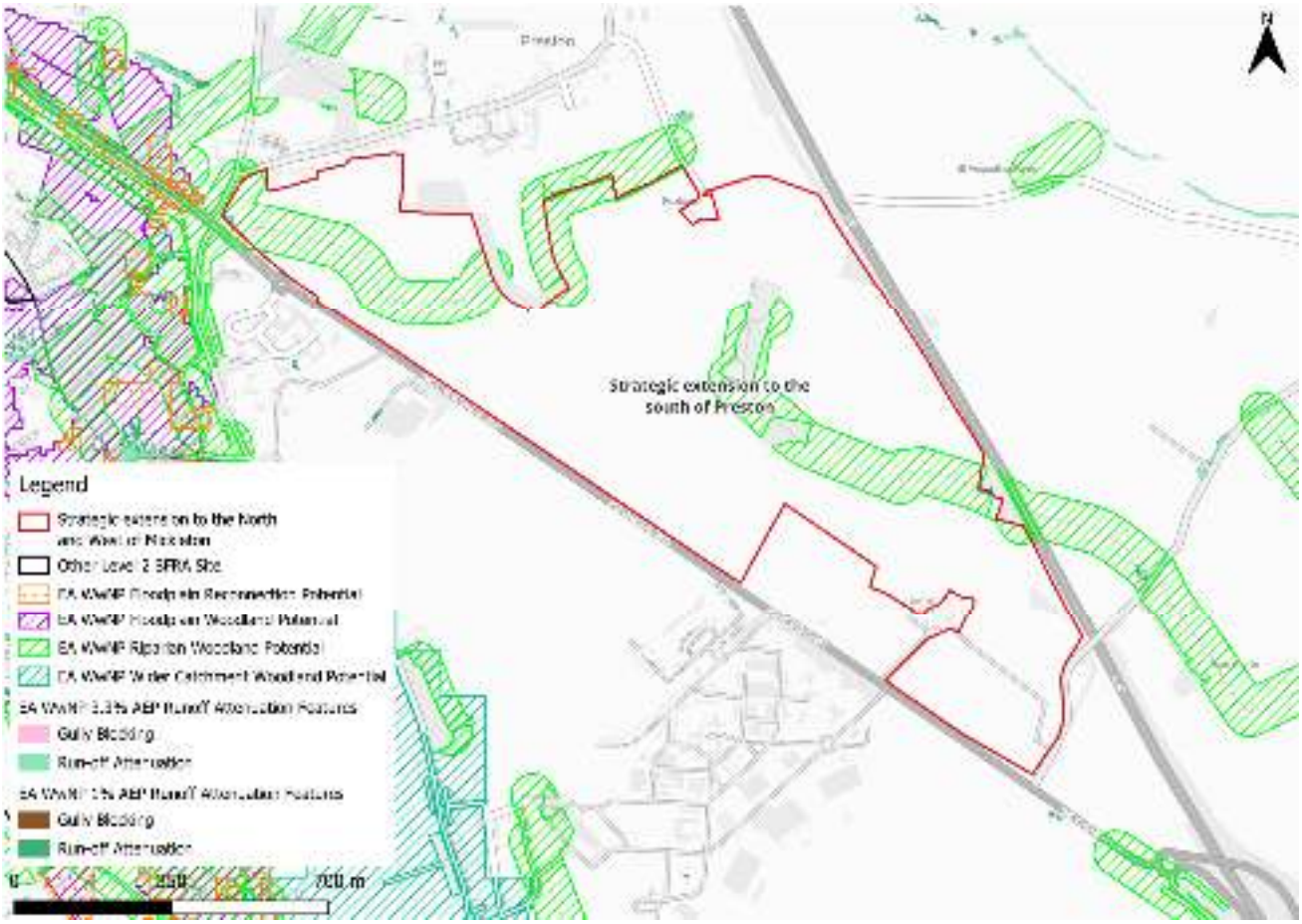

Figure 2-2: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warning and alerts

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 the Flood Map for Planning, safe access and escape routes could likely be achieved during a flood event via multiple locations surrounding the site (Figure 2-3).

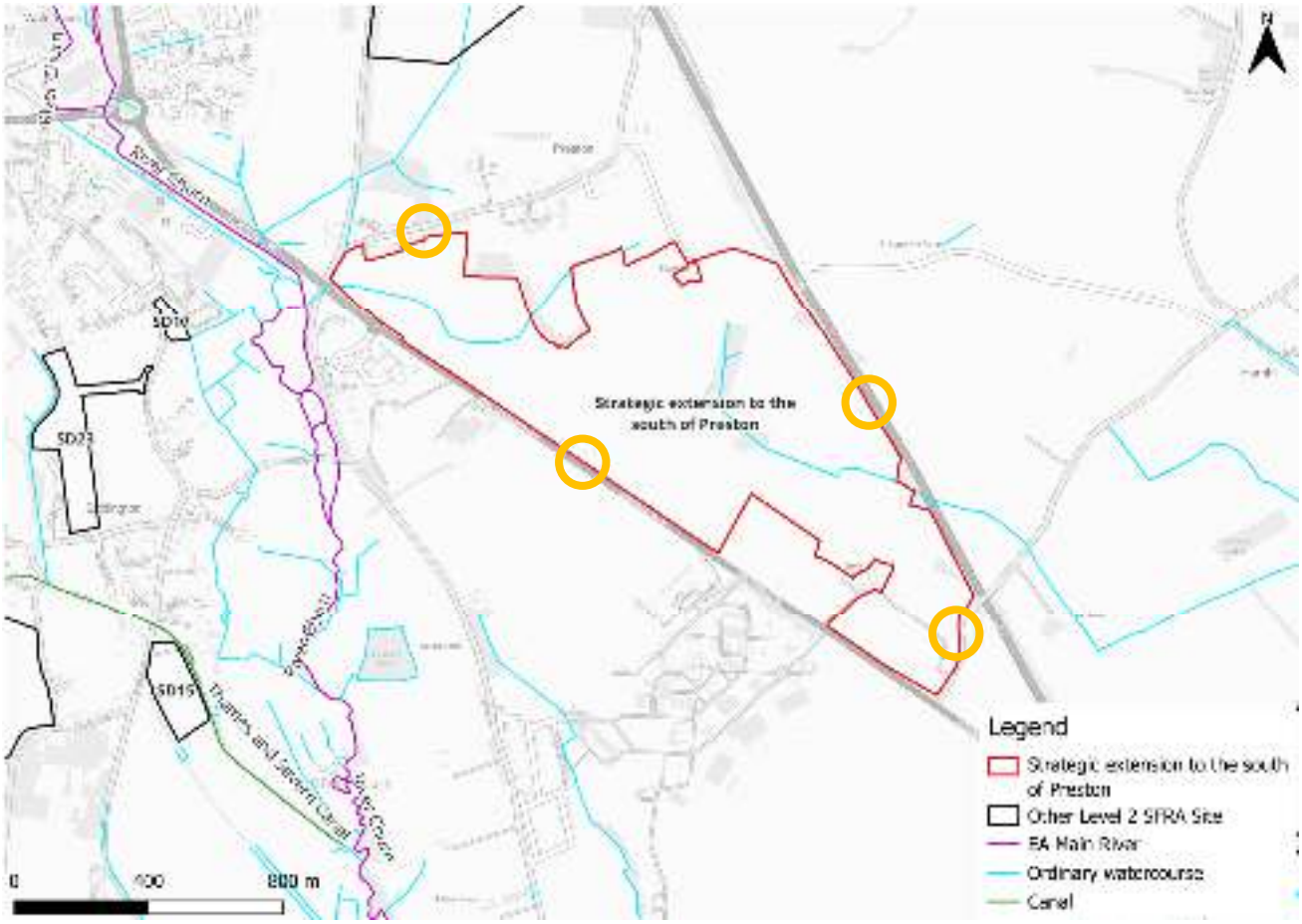

Figure 2-3: Potential access and escape routes

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

- Observations:
  - The site is located wholly within Flood Zone 1 and therefore at low risk of flooding from rivers.
  - The site is not shown to be at increased risk from fluvial flooding in the future, based on the EA's Flood Zones plus Climate Change dataset.
  - The potential fluvial risk posed by the unnamed ordinary watercourses cannot be assessed given no modelling is available. This should be considered as part of a site-specific FRA.
- Mitigation:
  - No development buffers should be in place along the ordinary watercourses in the form of blue green corridors, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits.
- Access and escape:
  - Based on current information, safe access and escape routes appear achievable via multiple locations surrounding the site.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths Present Day

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extents map (May 2026), surface water risk across the site is nominal, as shown in Table 3-1 and Figure 3-1. Surface water risk is present across the site as areas of scattered ponding in topographic low spots. There is a surface water flow path within the east of the site, which is confined to the channel of the unnamed ordinary watercourse.

Greatest surface water flood depths in the 1% AEP event are between 0.3 and 0.6 m (Figure 3-2). Safe access and escape routes are achievable via multiple locations surrounding the site.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
97	1	1	1

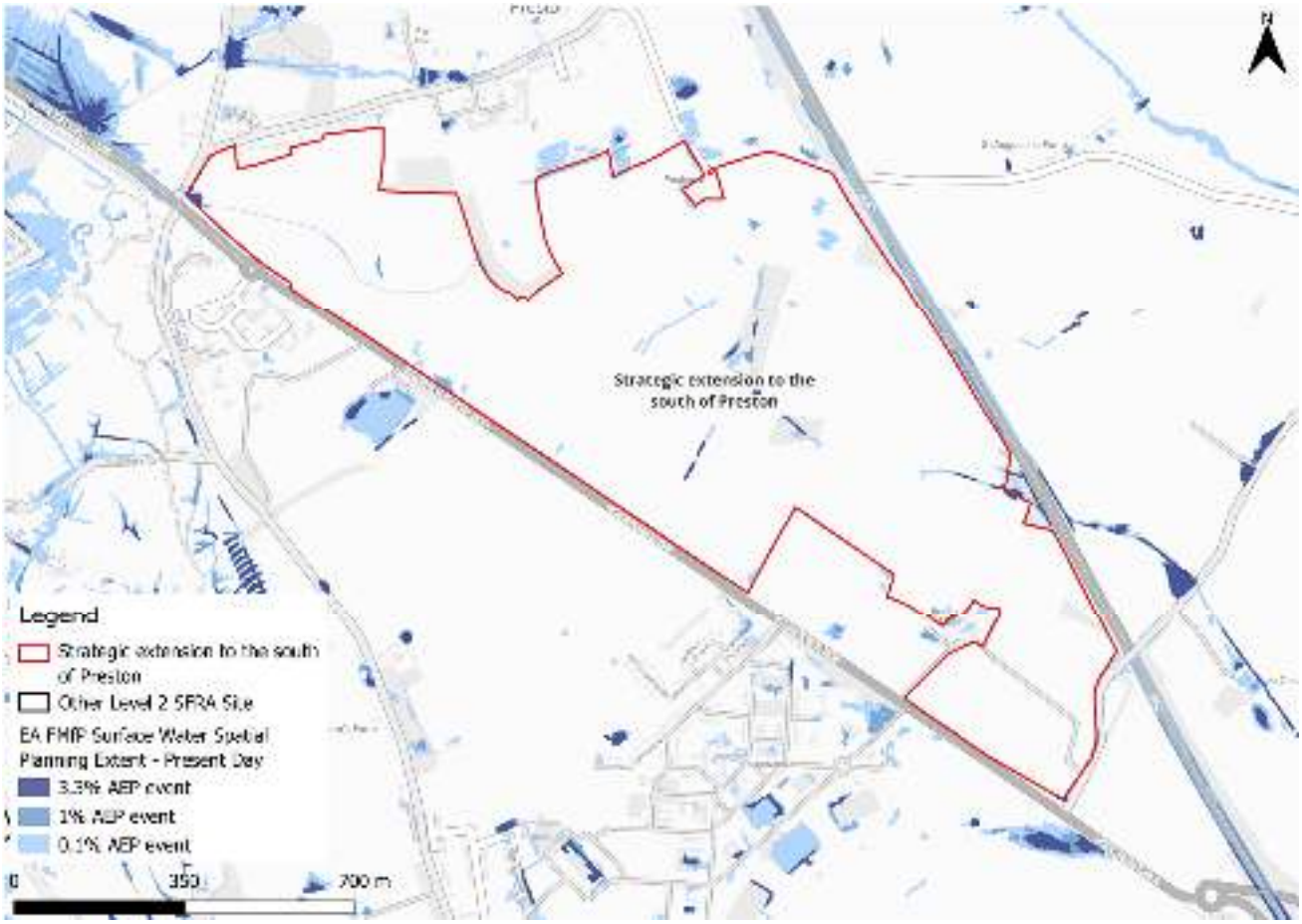

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

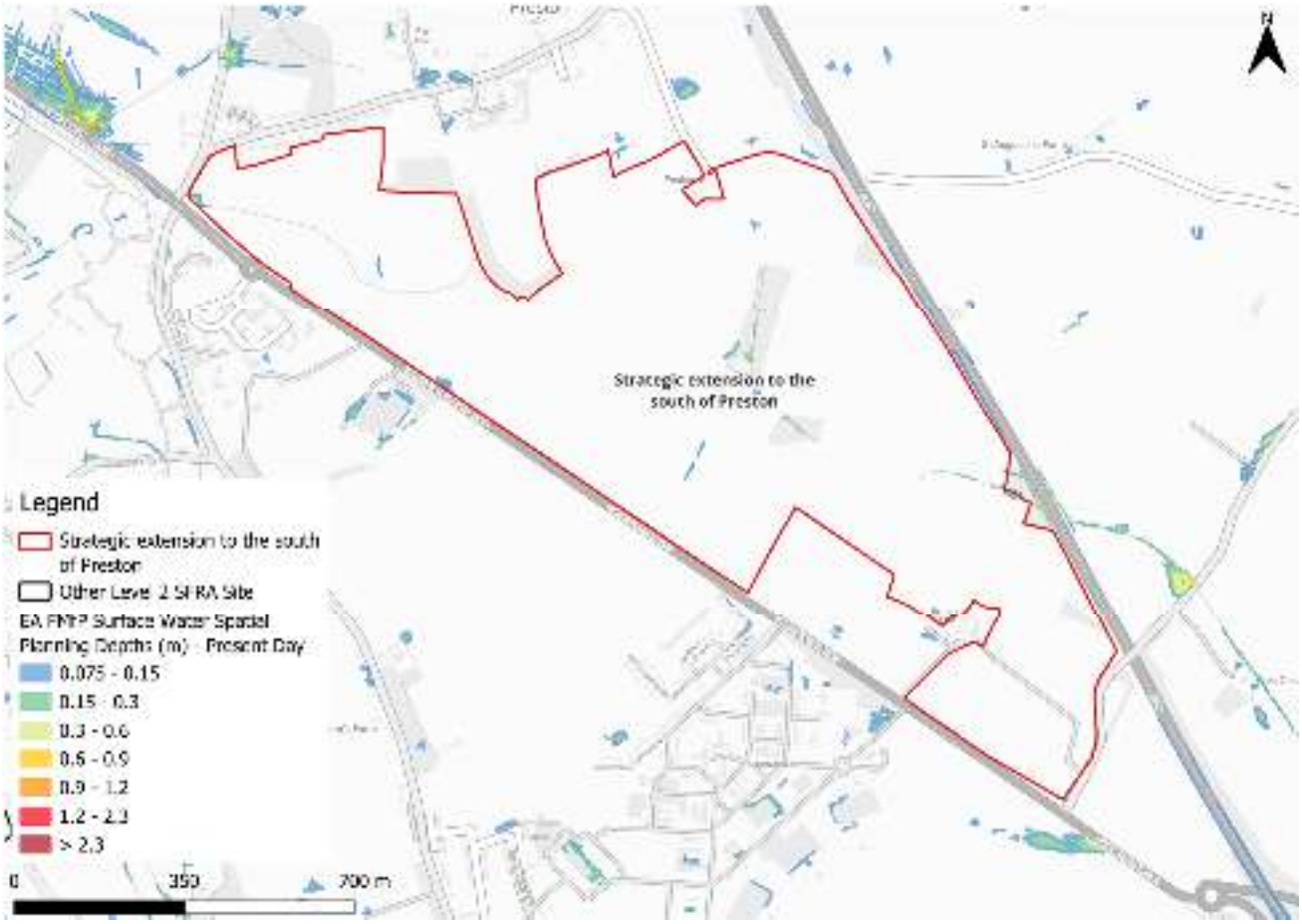

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows there to be an area of 'moderate' flood hazard (Figure 3-3). There are differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping whereby the RoFSW shows a much larger area to be at risk. Given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

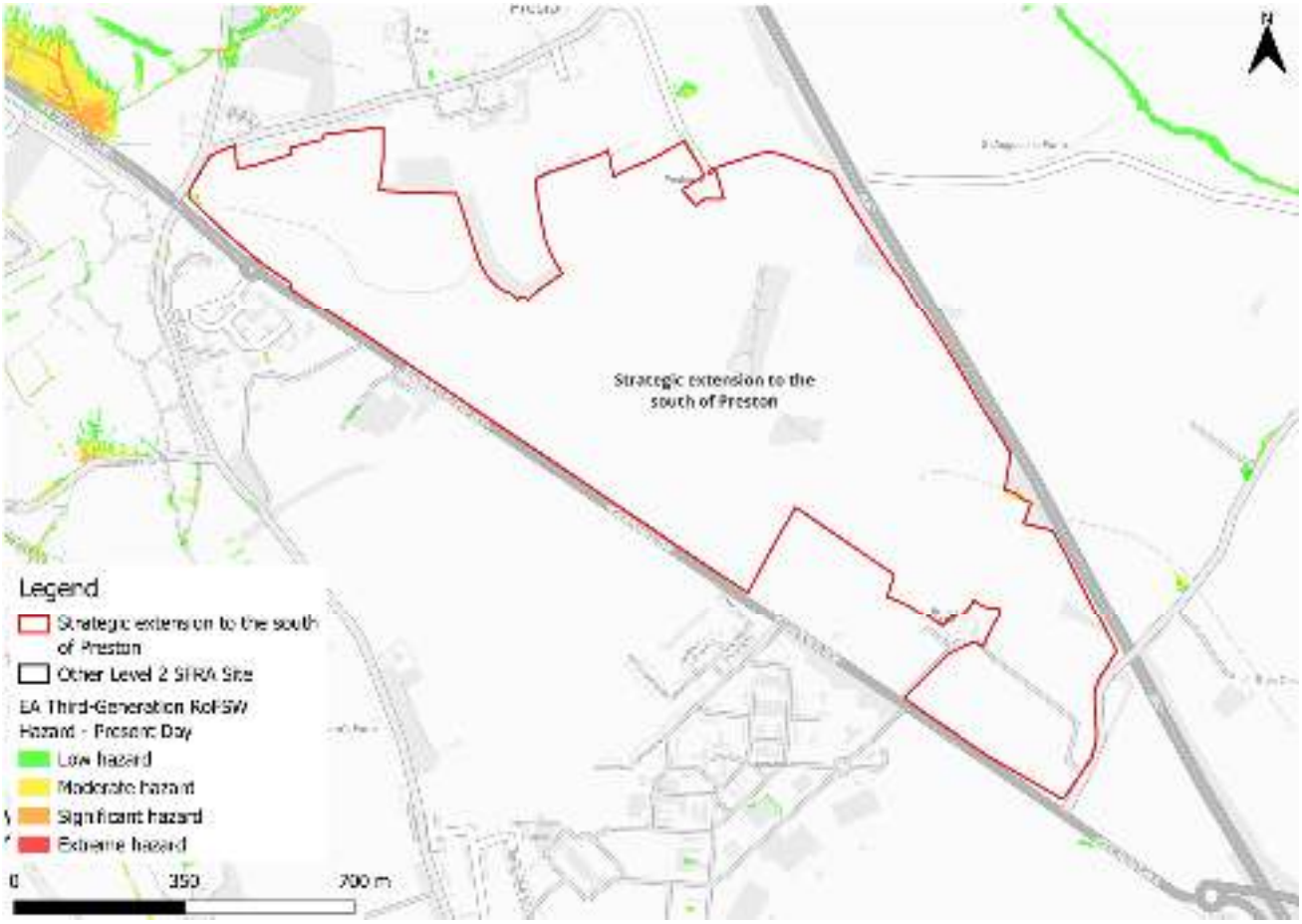

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day 1% AEP event surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRA's should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Gloucestershire and the Vale management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Gloucestershire and the Vale Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. Surface water risk is not shown to increase significantly across the site when considering climate change. Flood depths are shown to remain at between 0.3 and 0.6 m (Figure 3-5). Safe access and escape routes would likely remain achievable via several locations surrounding the site.

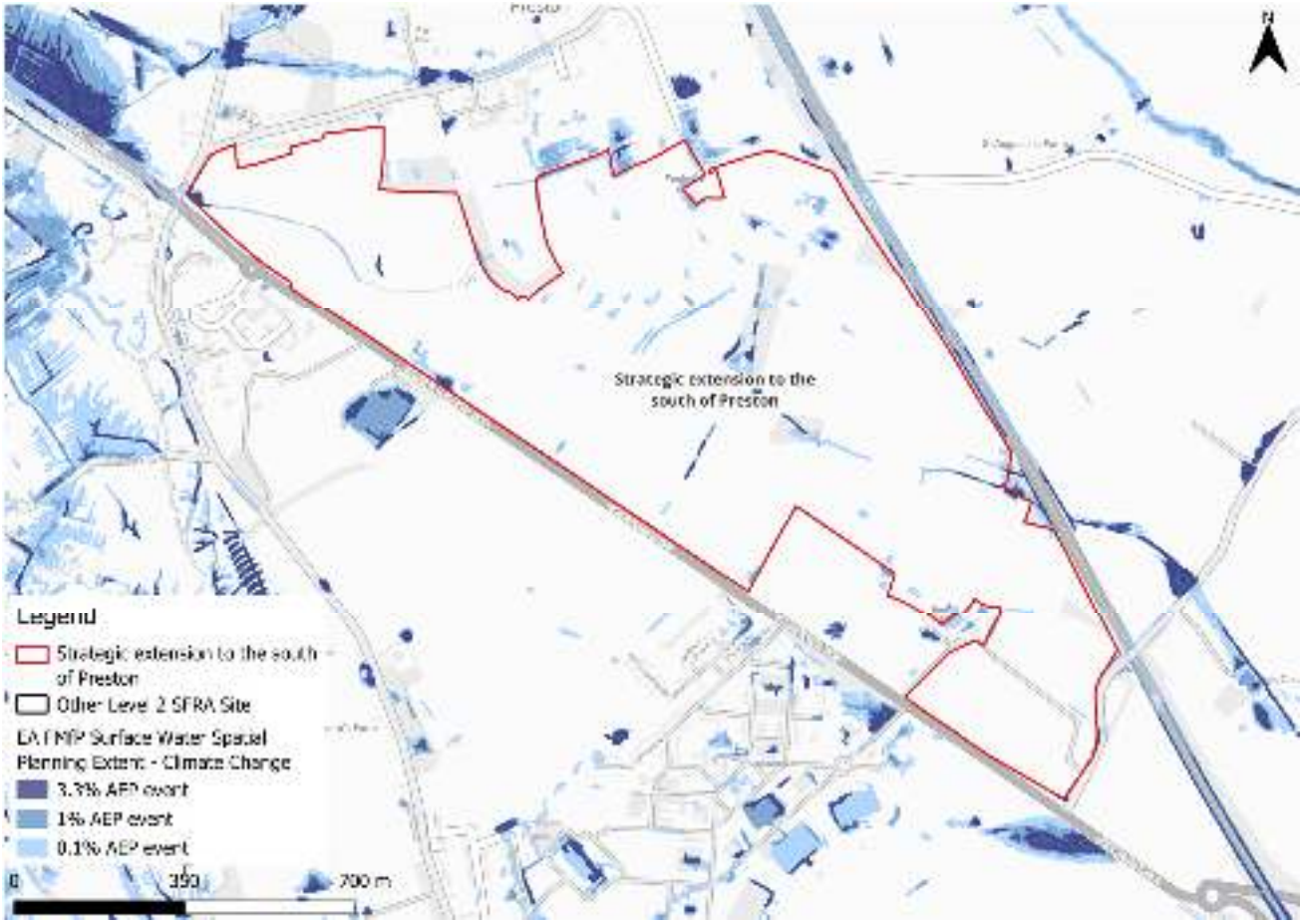

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

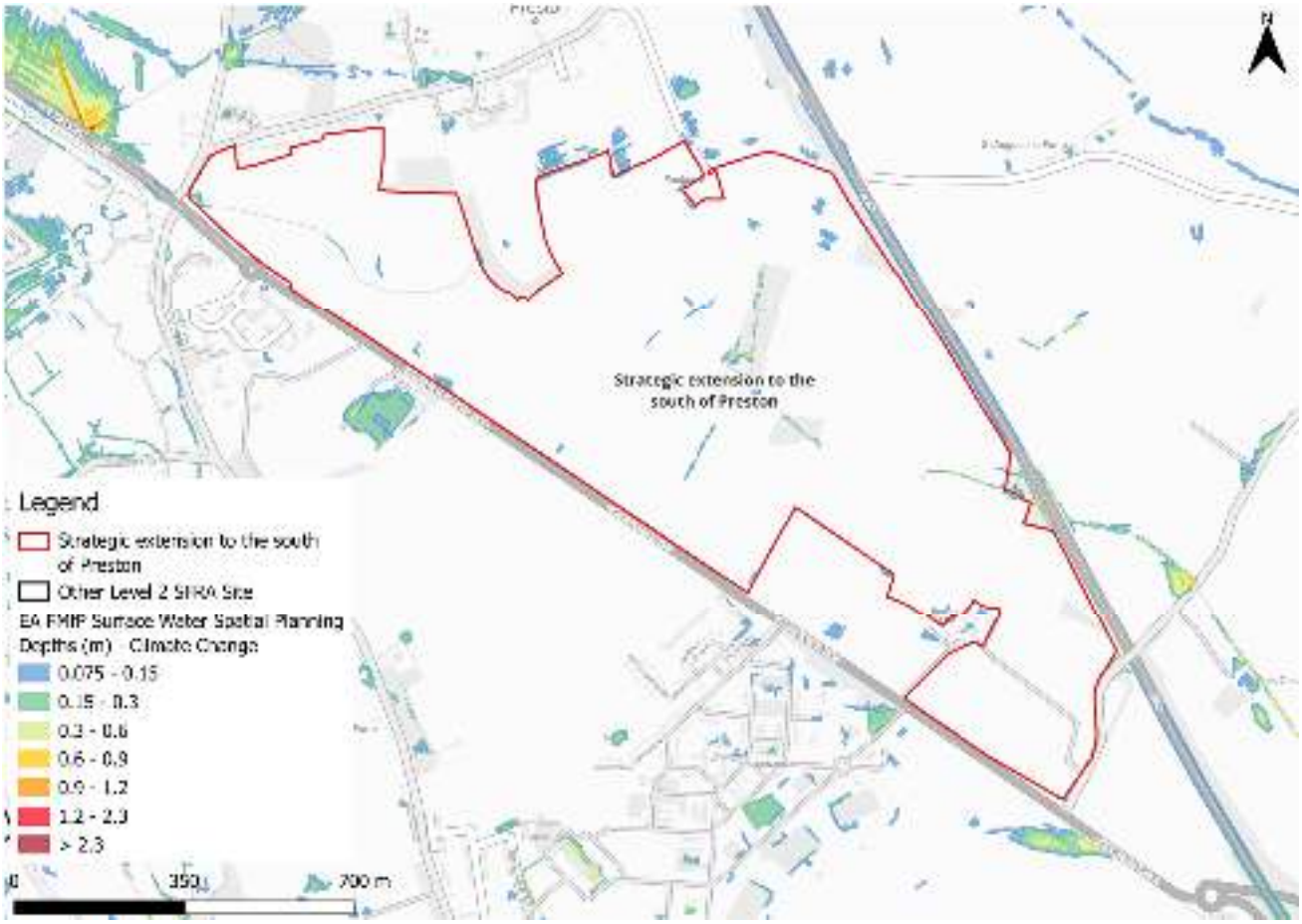

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event surface water flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is categorised as 'moderate' outside of the ordinary watercourse channel (Figure 3-6).

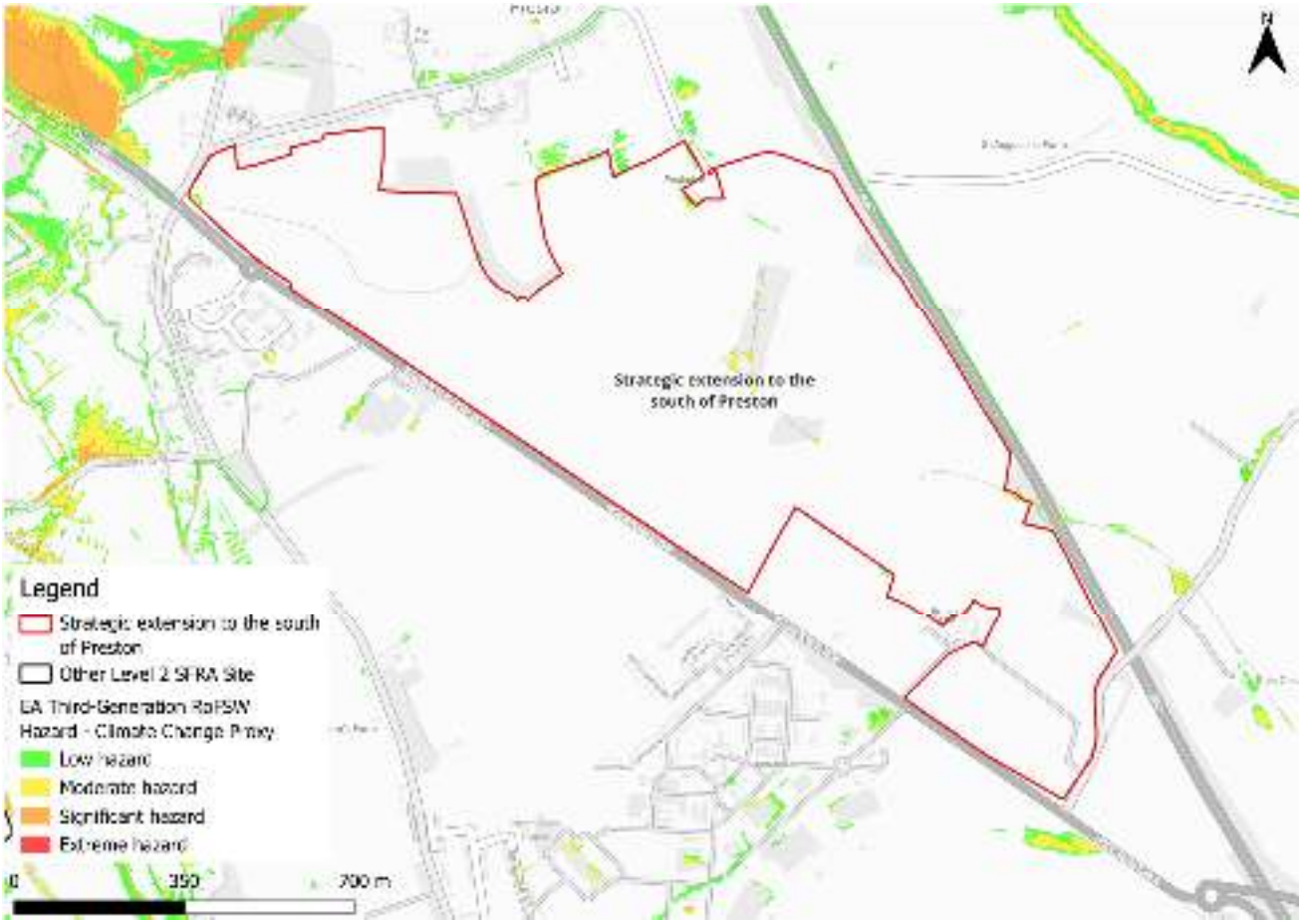

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day 0.1% AEP event surface water flood hazard as a climate change proxy

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There have been no recorded sewer flooding incidents within the Siddington & Cerney Rural Ward.

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

- Current risk to the site is predominantly low, with 97% of the site being outside of the 0.1% AEP surface water flood extent. Surface water risk is largely present as areas of scattered ponding across the site.
- Topographic low spots, and the surface water flow paths along the course of the ordinary watercourses onsite, should be considered and included in site design and left in place to flood naturally when required.
- Risk to the site is not shown to increase significantly in extent within the site when considering the impact of climate change.
- The drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or

betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.

- Safe access and escape routes would likely be achievable via multiple locations when considering surface water risk.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within two catchments, namely Churn (Baunton to Cricklade) and Ampney and Poulton Brooks (Source to Thames). These have been identified as high and low sensitivity catchments respectively. Planning considerations for sites at high sensitivity to the cumulative impacts of development can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The majority of the site is located within an area where there is a risk of groundwater emergence to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.

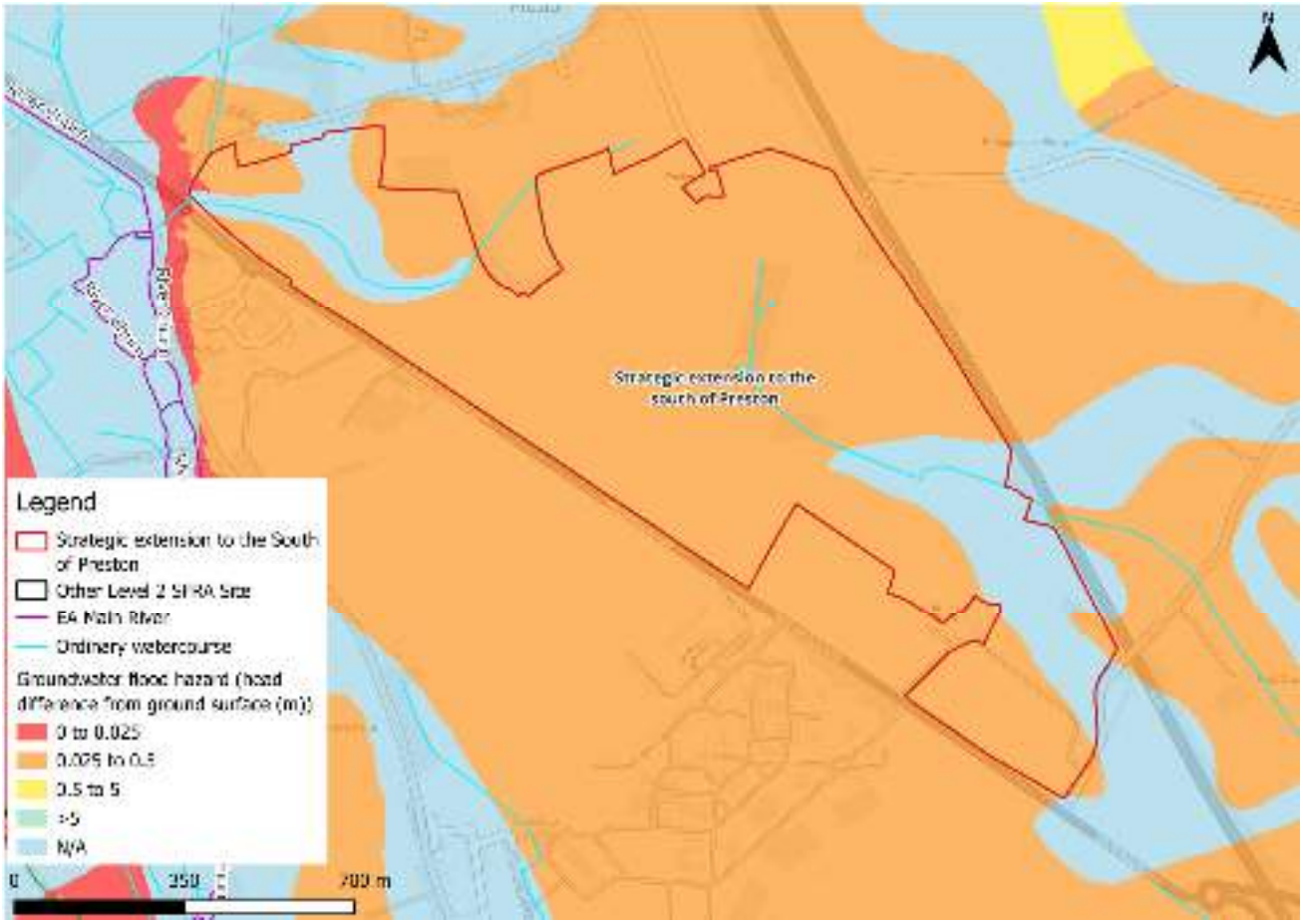

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is sandstone, limestone and argillaceous rocks (Figure 5-2). Limestone and argillaceous rocks vary widely in permeability and porosity. There is no record of superficial deposits in the area. Based on the groundwater emergence map, infiltration SuDS at this site may not be an option, though the drainage strategy for the site should fully investigate water table levels through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets. Residual risk at this site comes from the potential blockage or structural failure of the culverts beneath the A419 to the east of the site and Swindon Road to the west.

6.1 Potential blockage

A blockage or structural failure of the structures beneath the A419 or Swindon Road may cause water in the channel to back up and cause flooding to the site, depending on the severity of the blockage and magnitude of the flood event. Culvert course and condition surveys may be required, including for consultation with the culvert owner.

Figure 6-1 indicates the location of the culverts beneath the A419 and Swindon Road. The potential residual risk to the site following a blockage of this asset should be assessed through the site-specific FRA.

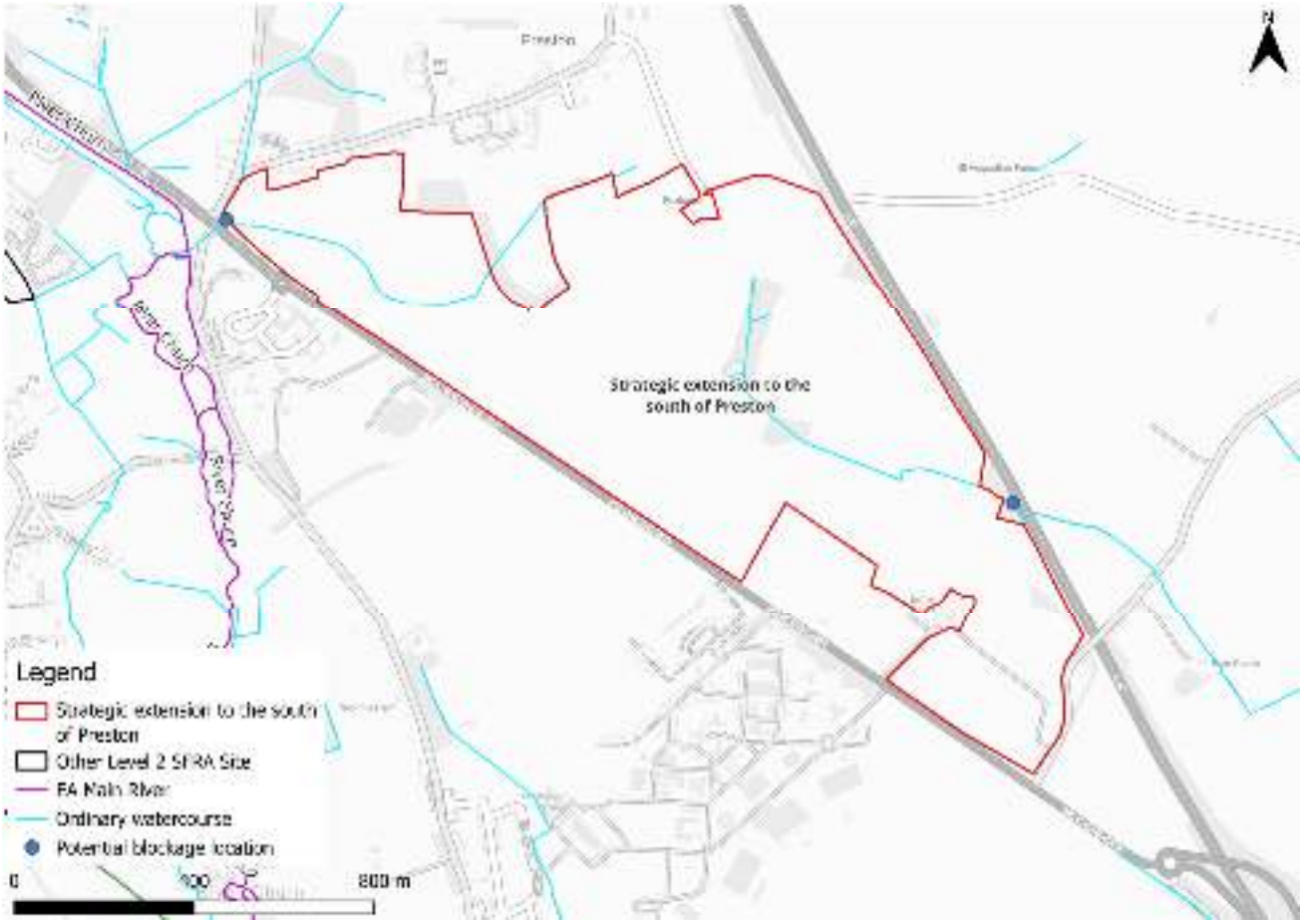

Figure 6-1: Potential blockage location

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. 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 generally considered to be 100 years for residential development.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- It should be possible to develop this site for residential uses given its location within Flood Zone 1 and nominal surface water risk.
- Ideally, no development buffers should be in place along the unnamed ordinary watercourses in the form of blue green corridors, which can provide a flood storage function as well as providing BNG, ecological, amenity, social, and wellbeing benefits.
- Modelling of the unnamed ordinary watercourses onsite should be carried out to robustly define the risk to the site for both present day and with climate change.
- A drainage strategy should inform site layout and design. Greenfield runoff rates or betterment should apply.
- Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.
- The FRA should undertake a capacity and condition assessment of the culverts beneath the A419 to the east of the site and Swindon Road to the west.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Site W8C - Land west of Field Close & north of B4632

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Authorised by	Mike Williamson BSc MSc CGeog FRGS EADA Principal Analyst

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Contract

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JBA Project Code	2025s1921

This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson-Jones of JBA Consulting carried out this work.

Purpose and Disclaimer

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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 June and August 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 for their assistance with this work.

Copyright

Contents

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site W8C. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Site W8C

- Location: Land west of Field Close & north of B4632 (NGR 410210, 239393)
- Existing site use: Agricultural land
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential led mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 1.1
- Watercourse: Unnamed ordinary watercourse
- Environment Agency (EA) flood model: No detailed model available
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of surface water flood extents, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

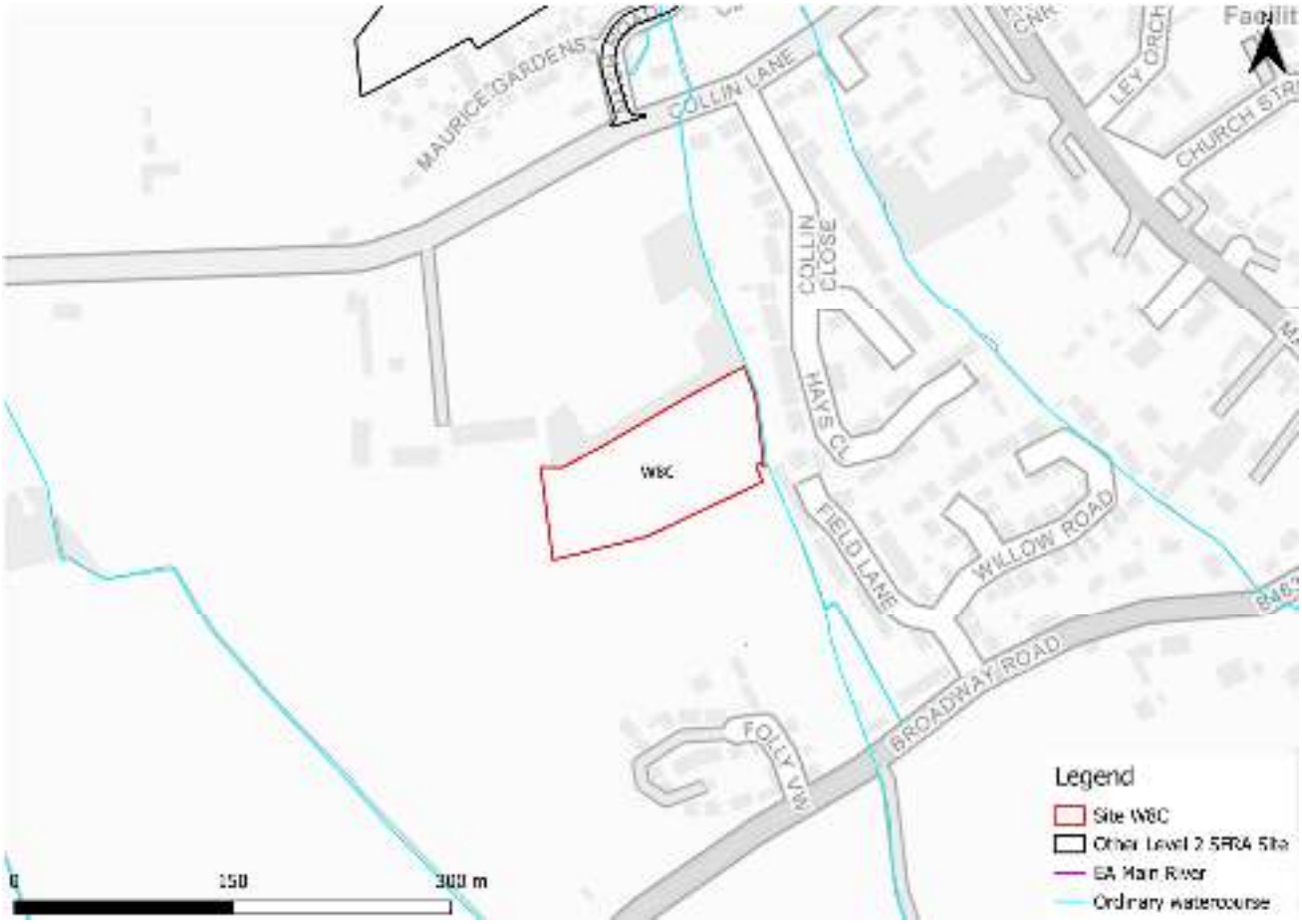

Figure 1-1: Site location boundary

The site is located at a higher elevation than the surrounding areas, with the highest elevation through the centre of the site, sloping towards the River Churn floodplain to the west and the Ampney Brook floodplain to the east (Figure 1-2).

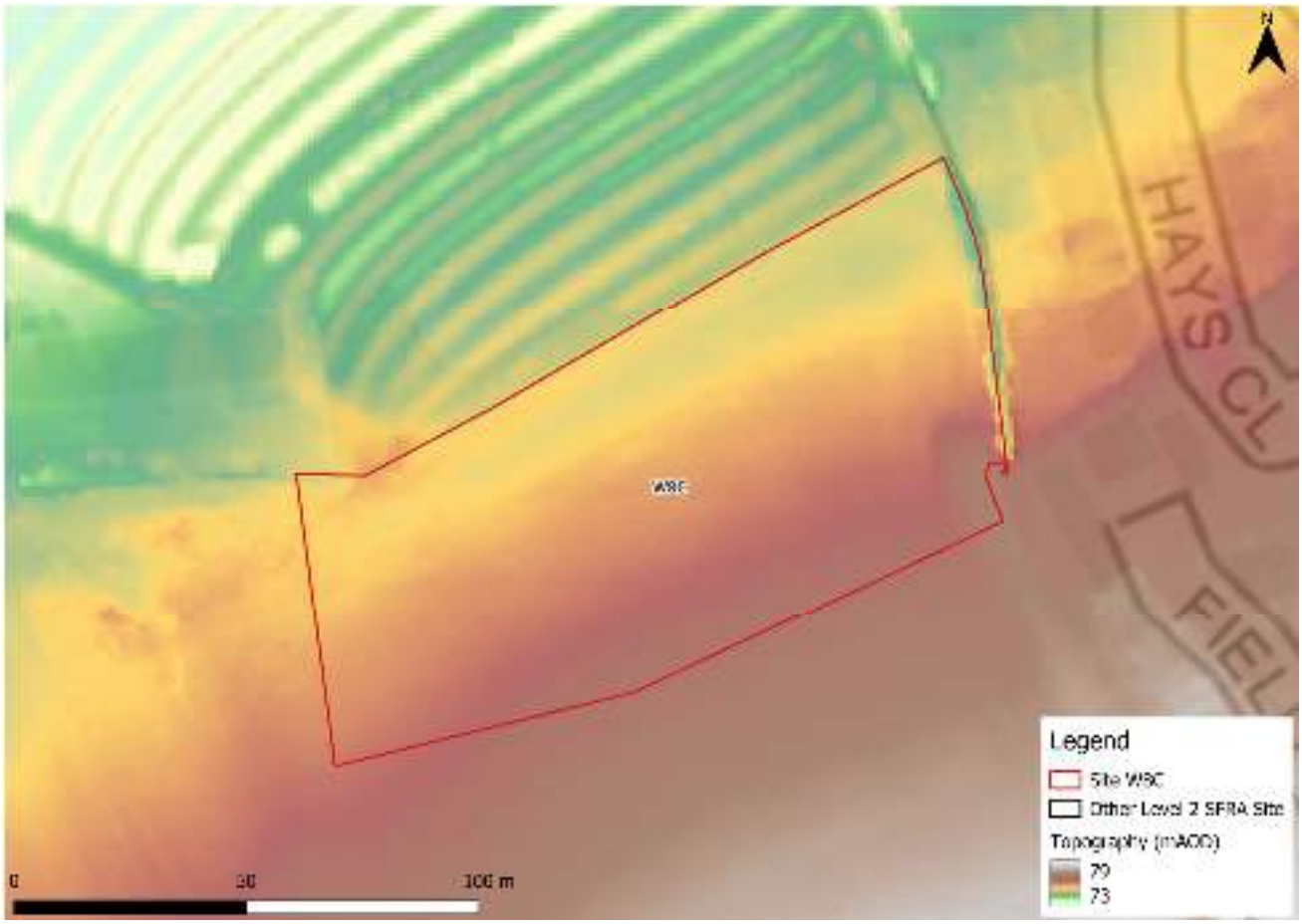

Figure 1-2: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 SFRA, the site is wholly located within Flood Zone 1 and therefore at low risk of flooding from rivers (Figure 2-1). Please note, the Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

There is an unnamed, unmodelled ordinary watercourses adjacent to the eastern boundary of the site. The EA's New National Model (NNM) does not cover this watercourse, therefore the potential fluvial risk posed to the site cannot be assessed. This should be considered as part of a site-specific FRA.

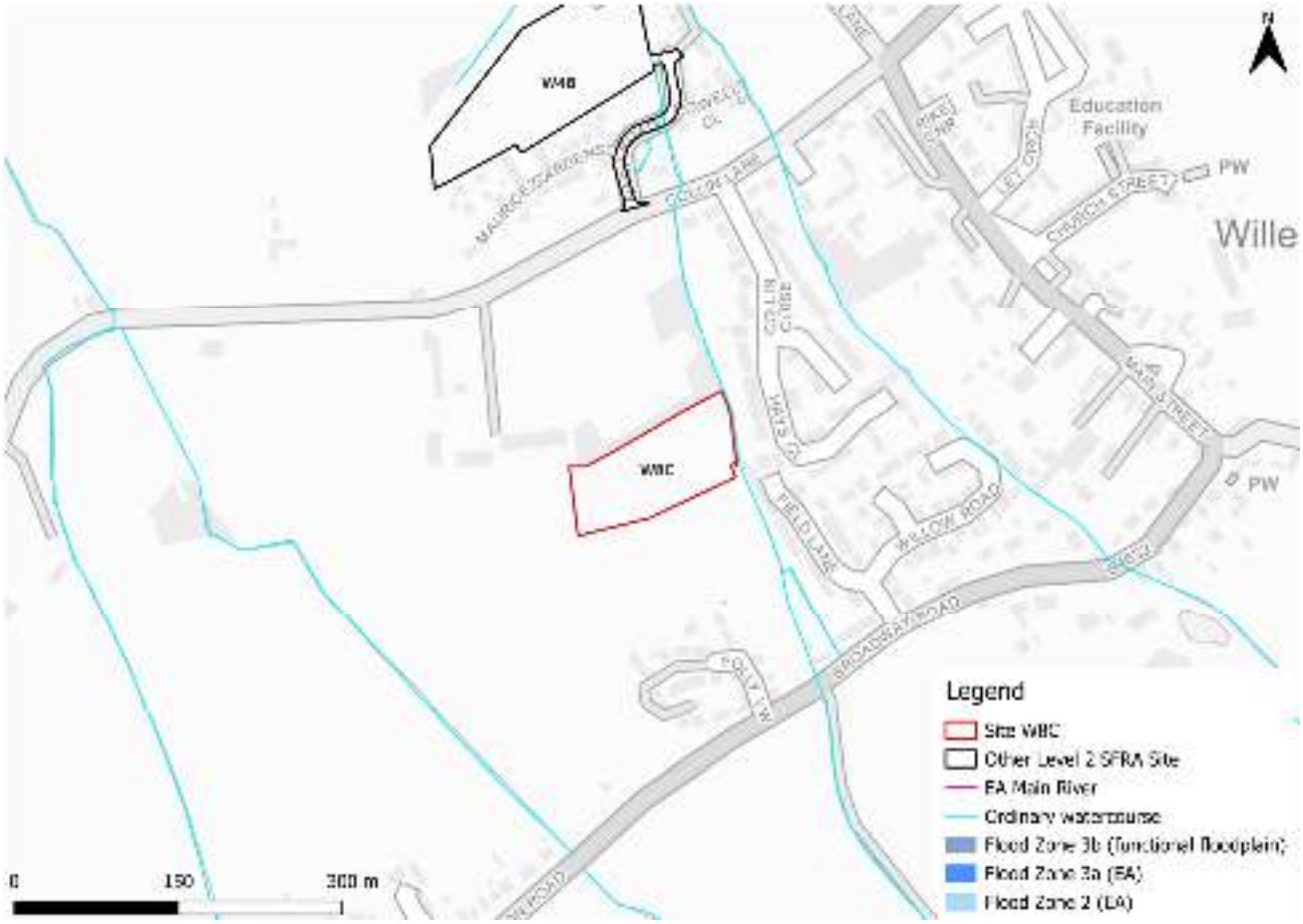

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Avon Warwickshire

Management Catchment. The central allowance within this catchment is 21% on peak flows (Table 2-1). There is no local detailed model for the unnamed watercourses through the site, therefore the required event cannot be assessed.

Table 2-1: Modelled climate change allowances for peak river flows within the Avon Warwickshire Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	7	12	22
2050s	8	14	31
2080s	21	32	59

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Based on the EA's Flood Map for Planning - Flood Zones plus Climate Change dataset, the site is not shown to be at increased risk of fluvial flooding when considering climate change.

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There have been ten recorded flooding incidents within the Campden & Vale Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-2 shows that the site and wider area could benefit from riparian tree planting. Tree planting can help to slow the flow to benefit areas downstream. There are also opportunities for run-off attenuation features where it may be possible to temporarily store water and attenuate flooding during high flows. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

Figure 2-2: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warning and alerts

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

There are no existing access routes to the site. However, based on the Flood Map for Planning, safe access and escape routes would likely be achievable via multiple locations surrounding the site (Figure 2-3).

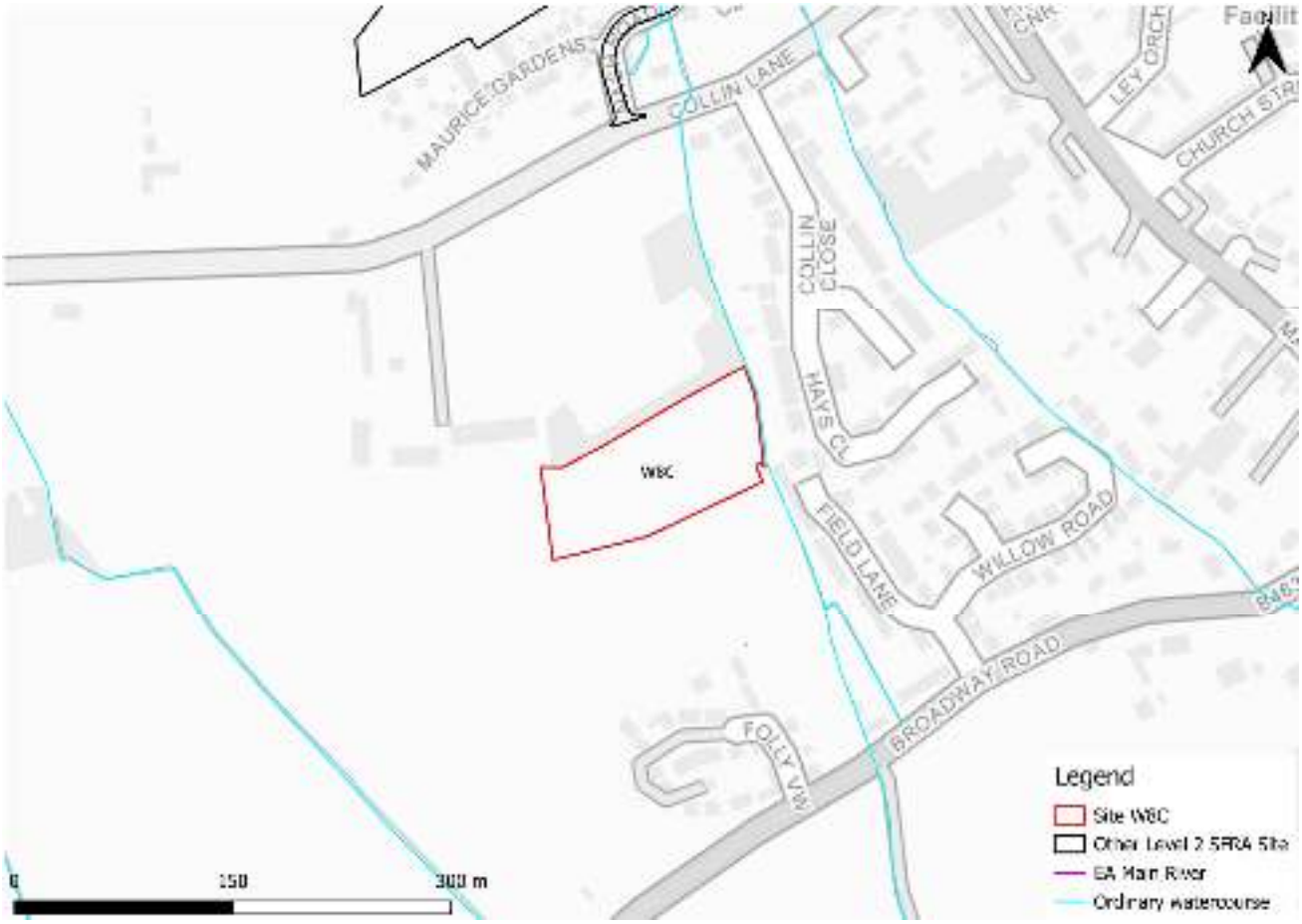

Figure 2-3: Potential access and escape routes

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

- Observations:
  - The site is located wholly within Flood Zone 1 and therefore at low risk of flooding from rivers.
  - The site is not shown to be at increased risk from fluvial flooding in the future, based on the EA's Flood Zones plus Climate Change dataset.
  - The potential fluvial risk posed by the unnamed ordinary watercourse to the site cannot be assessed given no modelling is available. This should be considered as part of a site-specific FRA.
- Mitigation:
  - A no development buffer should be in place along the unnamed ordinary watercourse in the form of a blue green corridor, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits.
- Access and escape:
  - Based on current information, safe access and escape routes appear achievable via multiple locations surrounding the site.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths Present Day

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extents map (May 2026), surface water risk across the site is generally low, as shown in Table 3-1 and Figure 3-1.

Surface water risk is present across the site as two distinct shallow flow paths, within the north and east of the site. There is also a surface water flow path along the eastern boundary of the site, which is confined to the channel of the unnamed ordinary watercourse.

Greatest surface water flood depths in the 1% AEP event are shallow, at between 0.15 and 0.3 m (Figure 3-2). Safe access and escape routes would ideally need to be made available via the south or west of the site.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
66	17	7	10

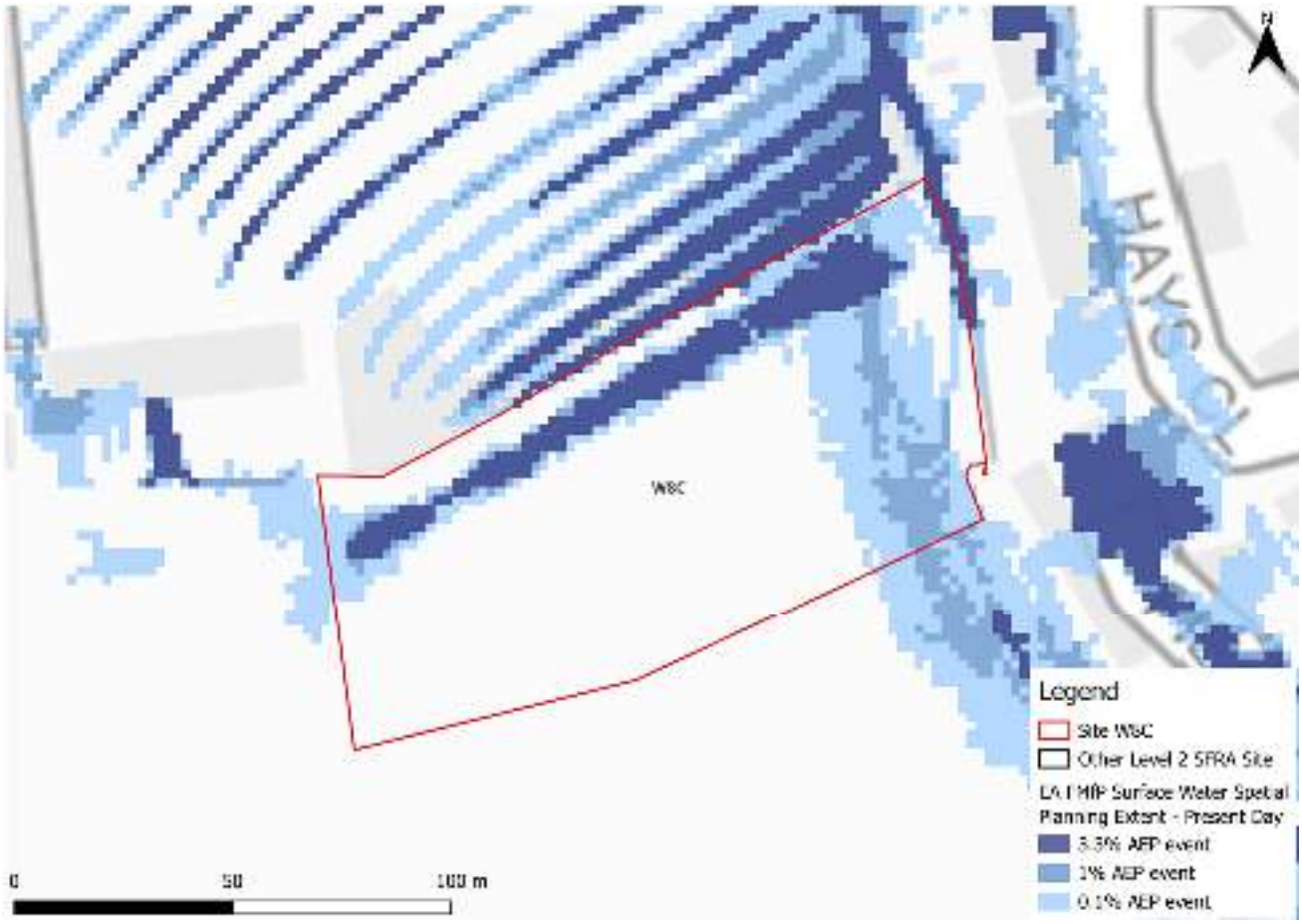

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

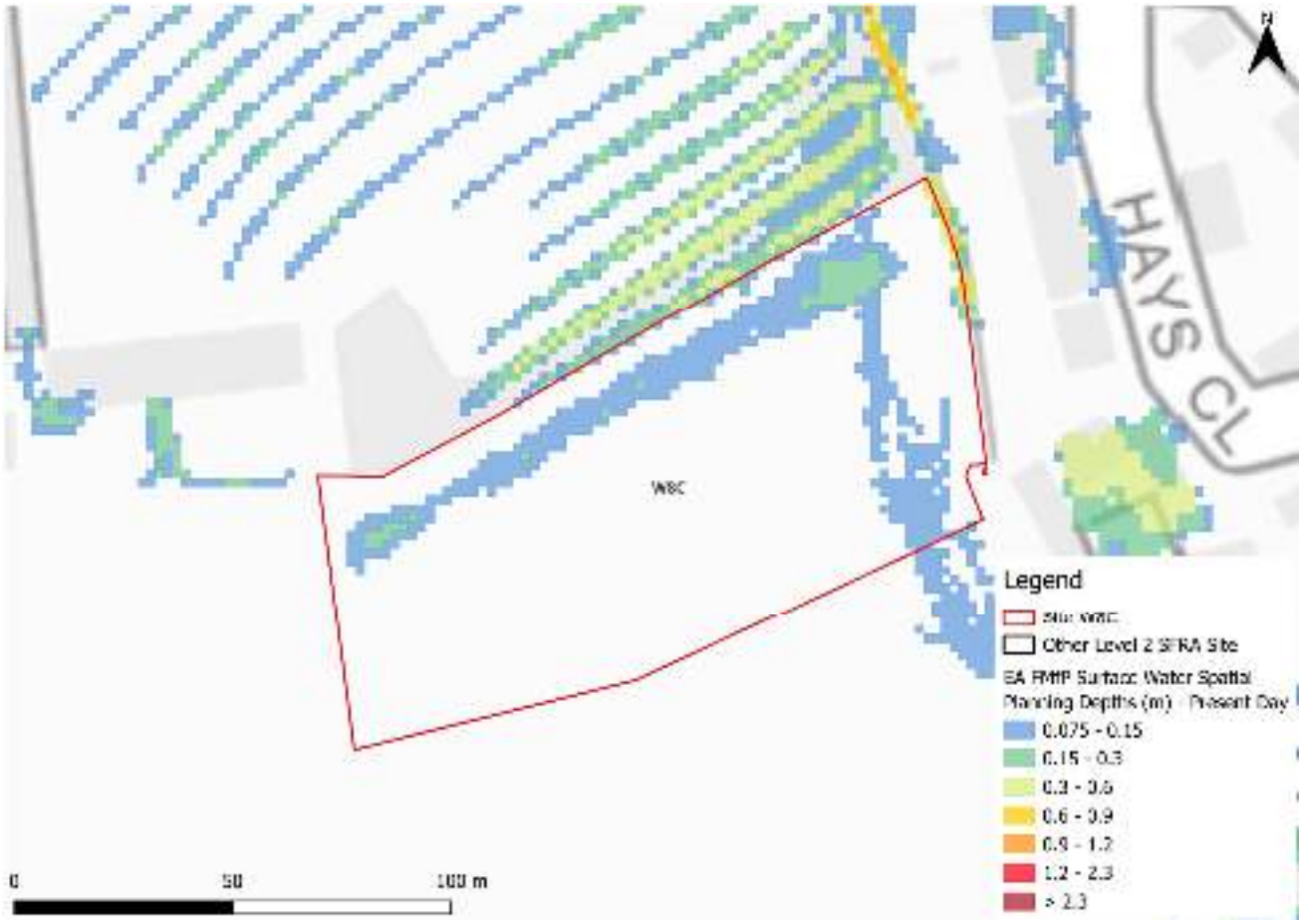

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows flood hazard to be low (Figure 3-3). There are differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping whereby the RoFSW shows a much larger area to be at risk. Given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

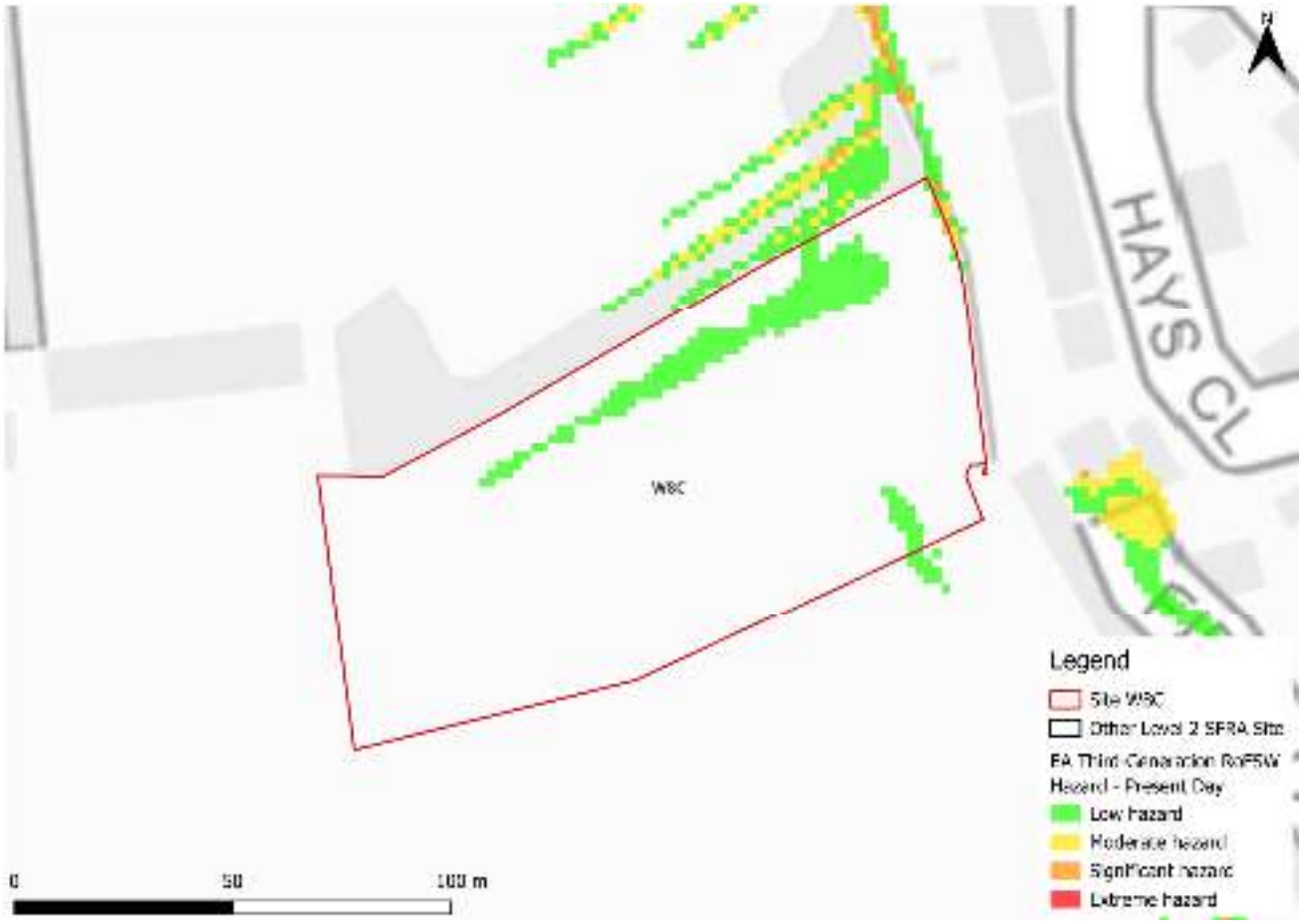

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day 1% AEP event surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRA's should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Avon Warwickshire management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Avon Warwickshire Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. Surface water risk is shown to increase in extent across the site when considering climate change, particularly within the 0.1% AEP event. Flood depths, however, are shown to remain shallow at between 0.15 and 0.3 m (Figure 3-5). Safe access and escape routes would likely remain achievable if provided via the south or west of the site.

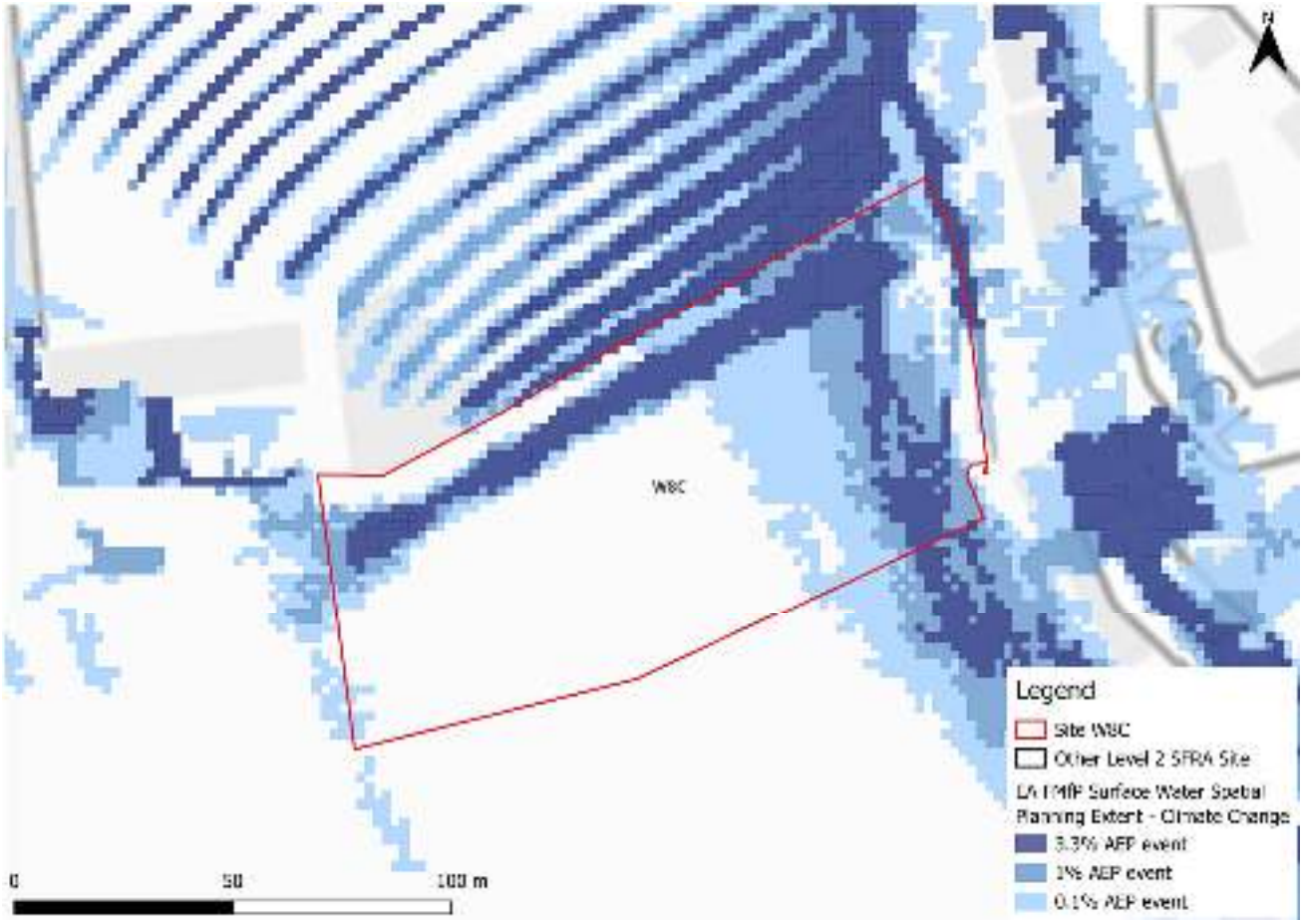

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

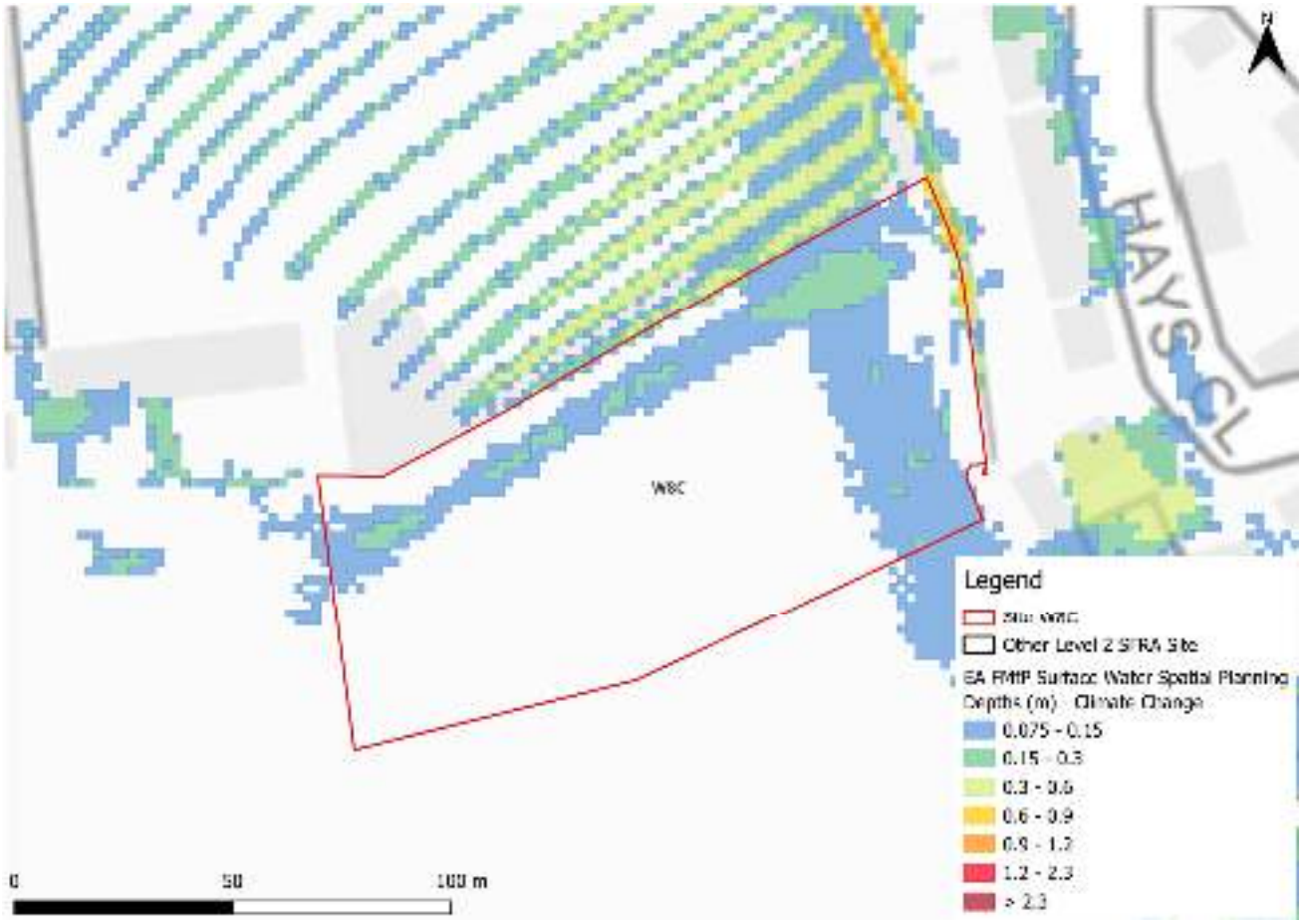

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event surface water flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is categorised as 'moderate' outside of the ordinary watercourse channel along the eastern site boundary (Figure 3-6).

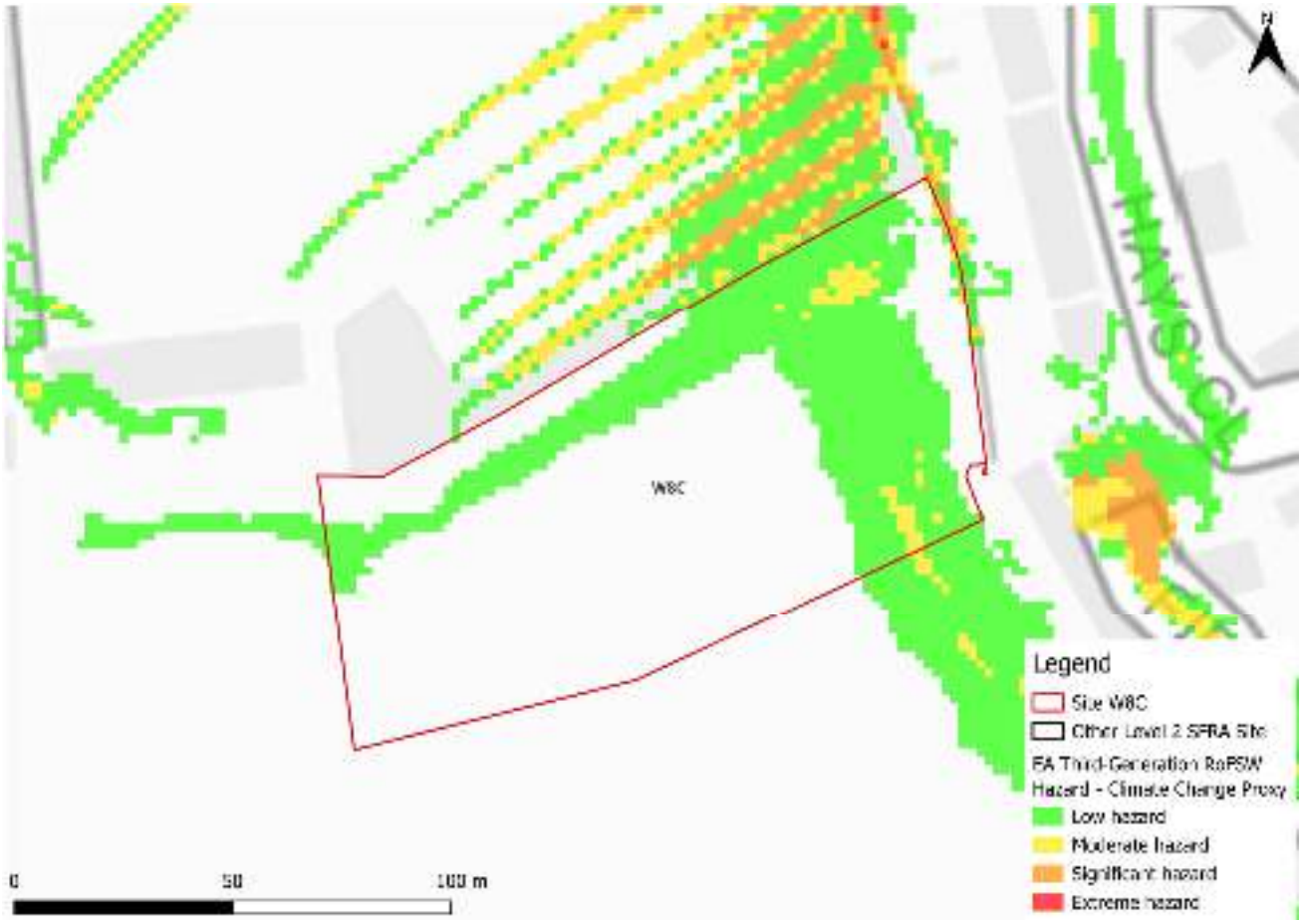

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day 0.1% AEP event surface water flood hazard as a climate change proxy

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There have been 22 recorded sewer flooding incidents within the Campden & Vale Ward.

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

- Current risk to the site is predominantly low, with 66% of the site being outside of the 0.1% AEP surface water flood extent. Surface water risk is present across the site parcels as two distinct flow paths, within the north and east of the site.
- The surface water flow paths through the site and along the course of the ordinary watercourse should be considered and included in site design and left in place to flood naturally when required.
- Risk to the site is shown to increase in extent within the site when considering the impact of climate change.
- The drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or

betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.

- Safe access and escape routes would ideally need to be made available via the south or west 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 Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within a high sensitivity catchment, namely Bretforton Bk - source to conf Broadway-Badsey Bk. Planning considerations for sites at high sensitivity to the cumulative impacts of development can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The entire site is located within an area where there is no risk of groundwater emergence.

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, limestone and sandstone (Figure 5-2). Mudstone and siltstone generally have a low permeability and low level of porosity, reducing infiltration rates. There is no record of superficial deposits in the area.

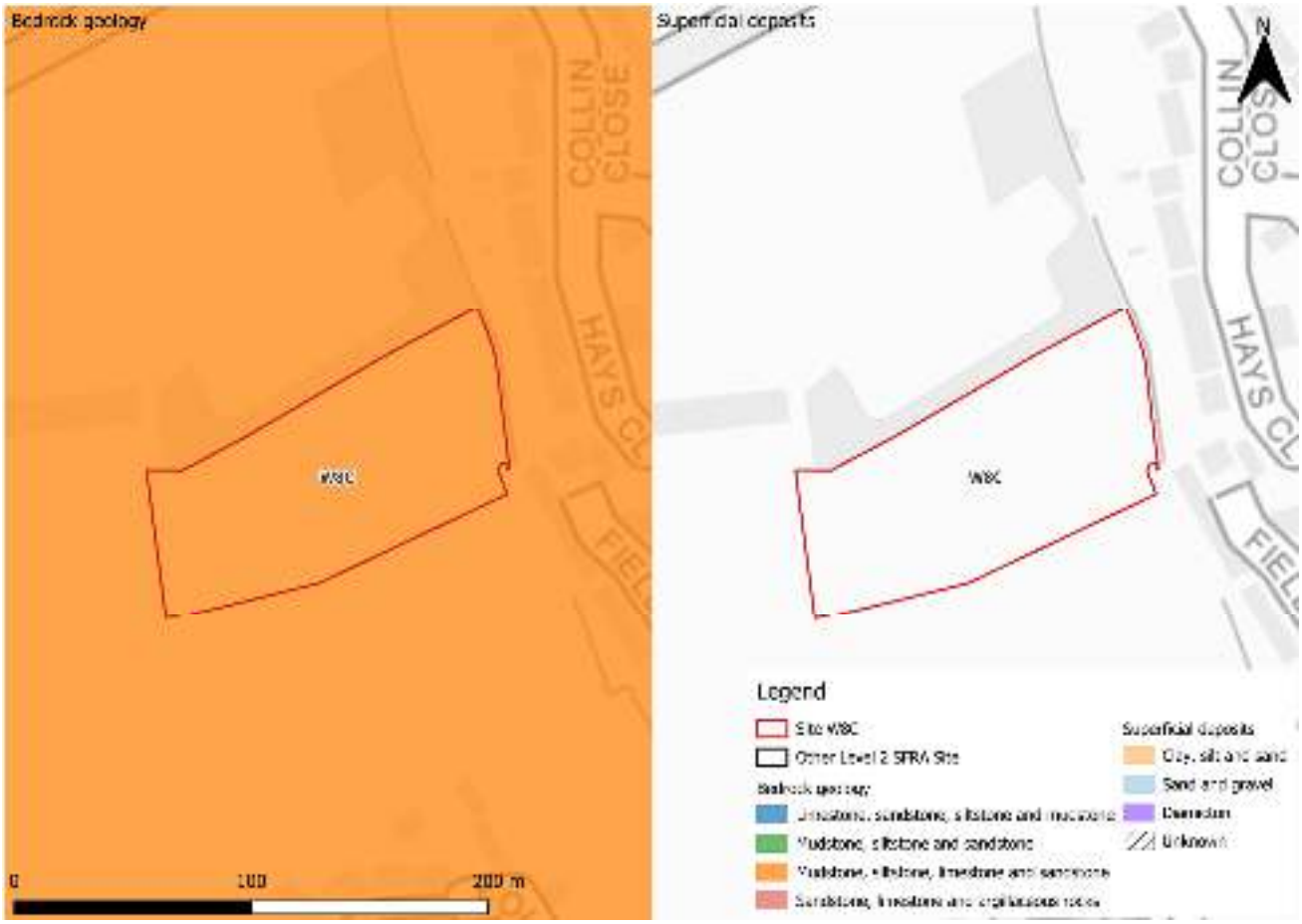

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets.

There is no potential residual risk to the 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. 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 generally considered to be 100 years for residential development and 75 years for non-residential development.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- It should be possible to develop this site for mixed use given its location within Flood Zone 1 and surface water risk confined to two distinct shallow flow paths through the site.
- Ideally, a no development buffer should be in place along the unnamed ordinary watercourse in the form of a blue green corridor, which can provide a flood storage function as well as providing BNG, ecological, amenity, social, and wellbeing benefits.
- Modelling of the unnamed ordinary watercourse adjacent to the site must be carried out to robustly define the risk to the site for both present day and with climate change.
- A drainage strategy must be in place to manage surface water flood risk and runoff rates.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

New settlement to the south of Driffield

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Contract

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This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Rosie Holmes of JBA Consulting carried out this work.

Purpose and Disclaimer

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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 June and August 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 for their assistance with this work.

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Contents

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for the new settlement to the south of Driffield. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 New settlement to the south of Driffield

- Location: Driffield (NGR 407407, 198558)
- Existing site use: Agricultural land
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Mixed use
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 198.8
- Watercourse: Unnamed ordinary watercourses
- Environment Agency (EA) flood model: No detailed model available
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of surface water flood extents, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

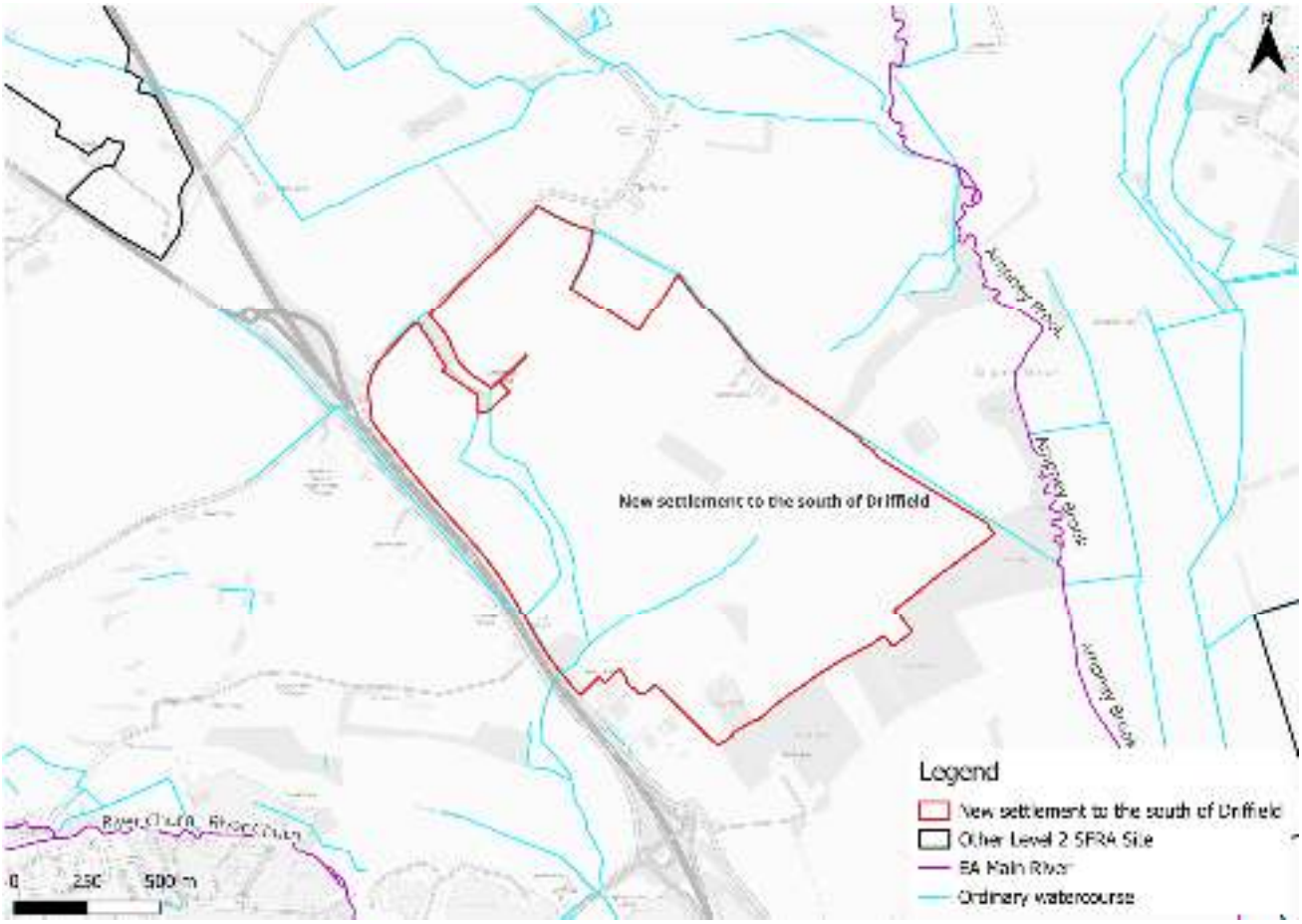

Figure 1-1: Site location boundary

The site is located at a lower elevation than the surrounding areas, with the highest elevation through the north and southeast boundaries of the site. The lowest elevation is at the centre and southwest of the site, sloping towards the River Churn floodplain to the southwest and the Ampney Brook floodplain to the east (Figure 1-2).

Figure 1-2: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 SFRA, the percentage areas of the site within each flood zone are stated in Table 2-1. The site is mainly located within Flood Zone 1 and therefore at low risk of flooding from rivers (Figure 2-1). The Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

The site is partially within the functional floodplain and Flood Zones 3a and 2 due to risk from an unnamed ordinary watercourse. There is no detailed model available for the ordinary watercourse meaning the flood zones here are based on the EA's New National Model (NNM) dataset. Flood depths and hazards therefore are not available for interrogation. The functional floodplain in this location is also based on the NNM dataset 'Rivers and Sea 3.3% defended flood risk extents - present day'. There should be no development within the functional floodplain. There are several other ordinary watercourses on the site that are not modelled, therefore, the potential fluvial risk posed to the site cannot be assessed. Risk should be assessed at the site-specific FRA stage.

Table 2-1: Present day 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

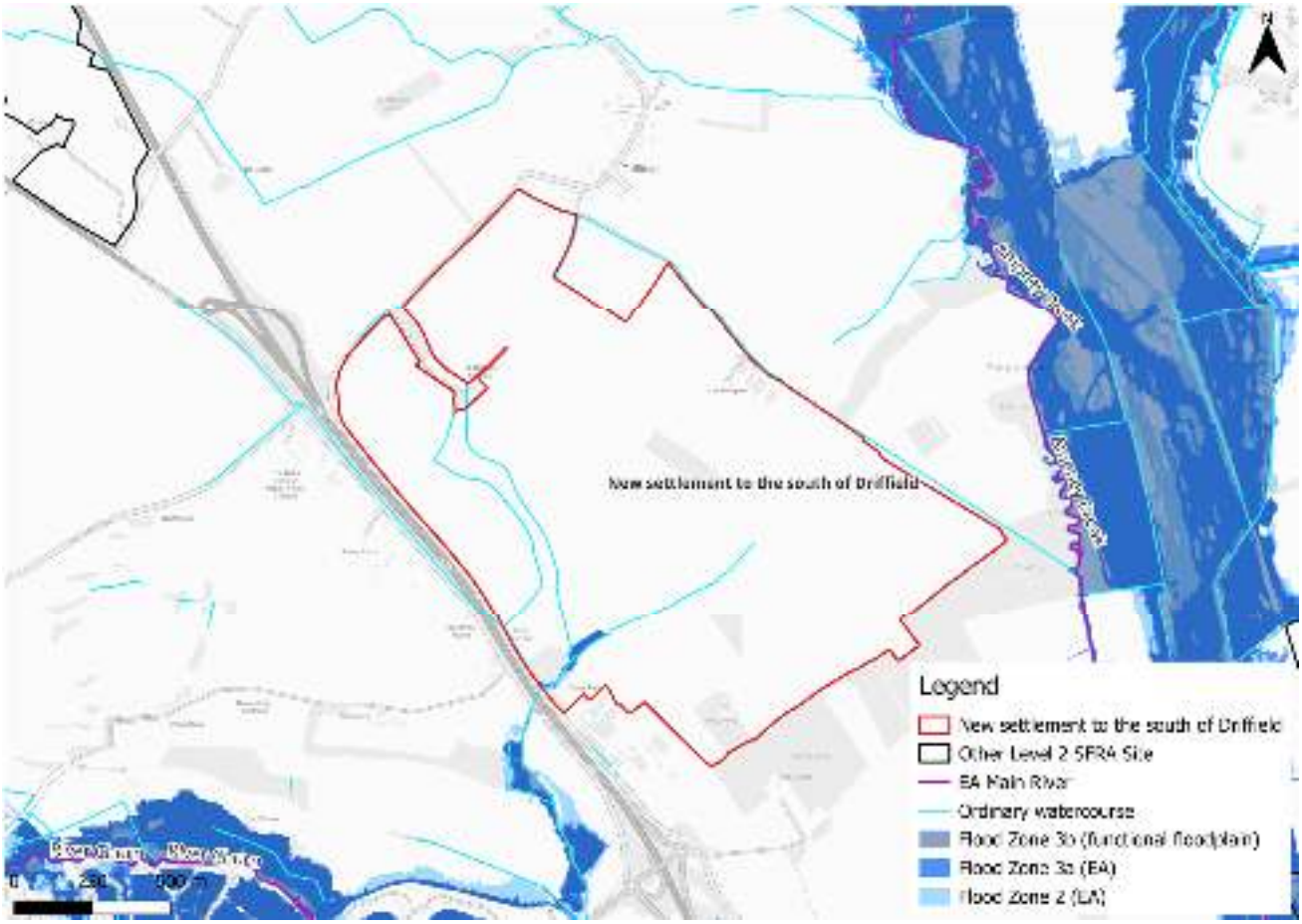

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Gloucestershire and the Vale Management Catchment. The central allowance within this catchment is 26% on peak flows (Table 2-2). There is no local detailed model for the ordinary watercourses through the site, therefore the required event cannot be assessed.

Table 2-2: Modelled climate change allowances for peak river flows within the Gloucestershire and the Vale Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	11	17	33
2050s	11	19	43
2080s	26	41	84

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of climate change on Flood Zone 3a and Flood Zone 2 combined. This shows a slight increase in risk compared to present day though nothing significant.

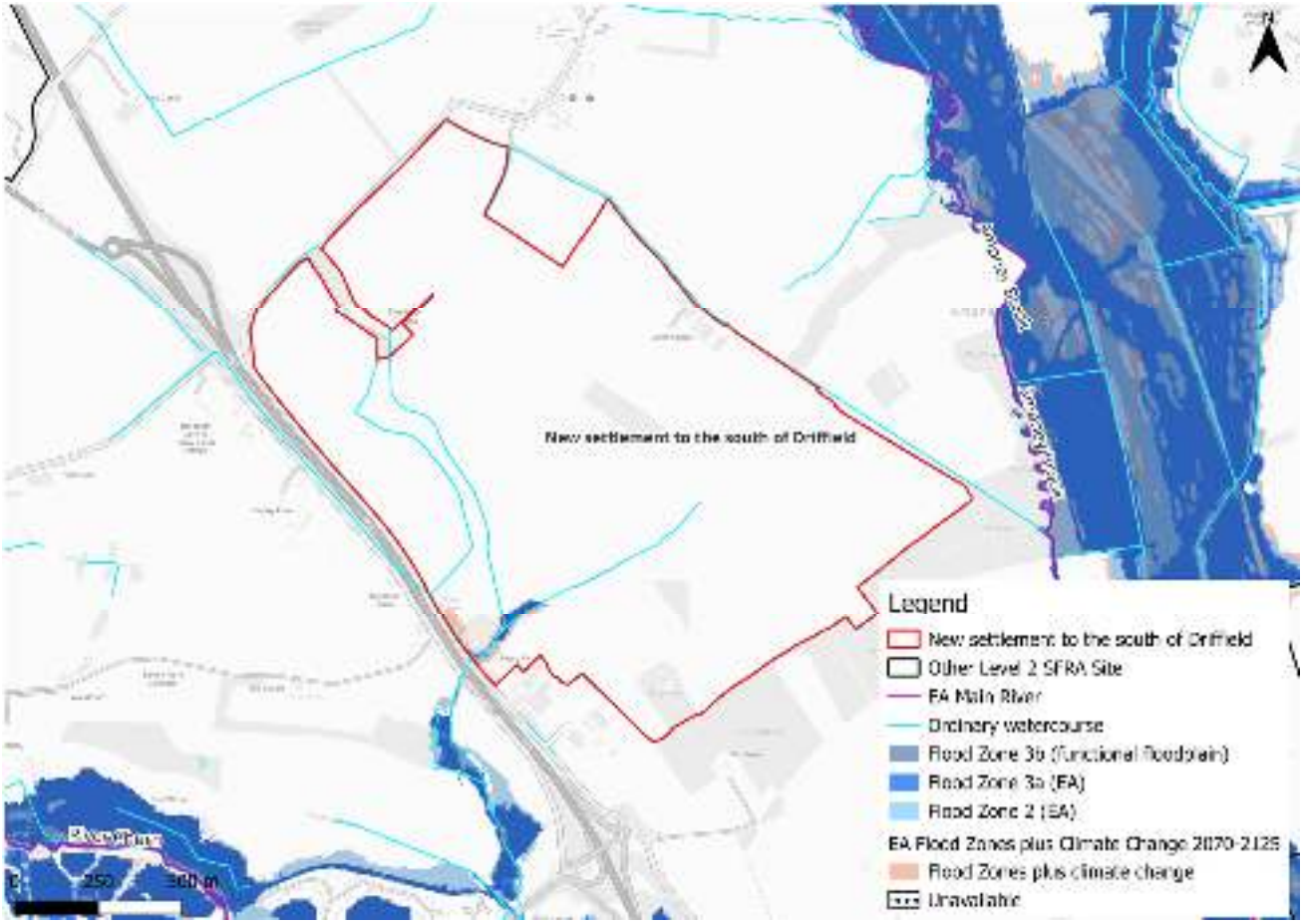

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There are no recorded historic flood events within the vicinity of the site, according to these datasets. The LLFA provided its historic floods register. There have been six recorded flooding incidents within the Siddington & Cerney Rural Ward within which the site is located.

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-3 shows that the ordinary watercourses onsite and wider area could benefit from riparian tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

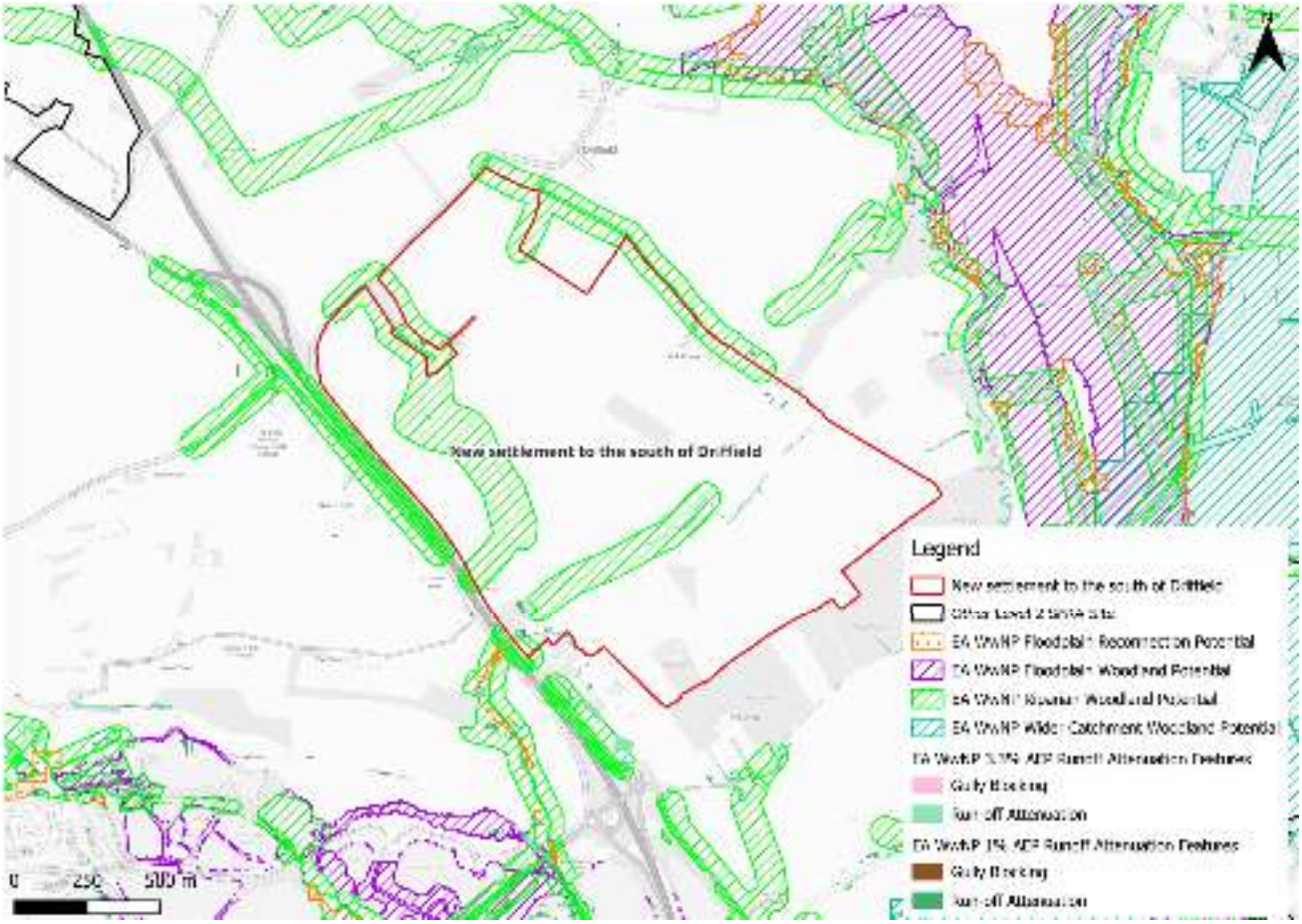

Figure 2-3: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warning and alerts

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 the Flood Map for Planning, safe access and escape routes could likely be achieved during a flood event via multiple locations surrounding the site (Figure 2-4).

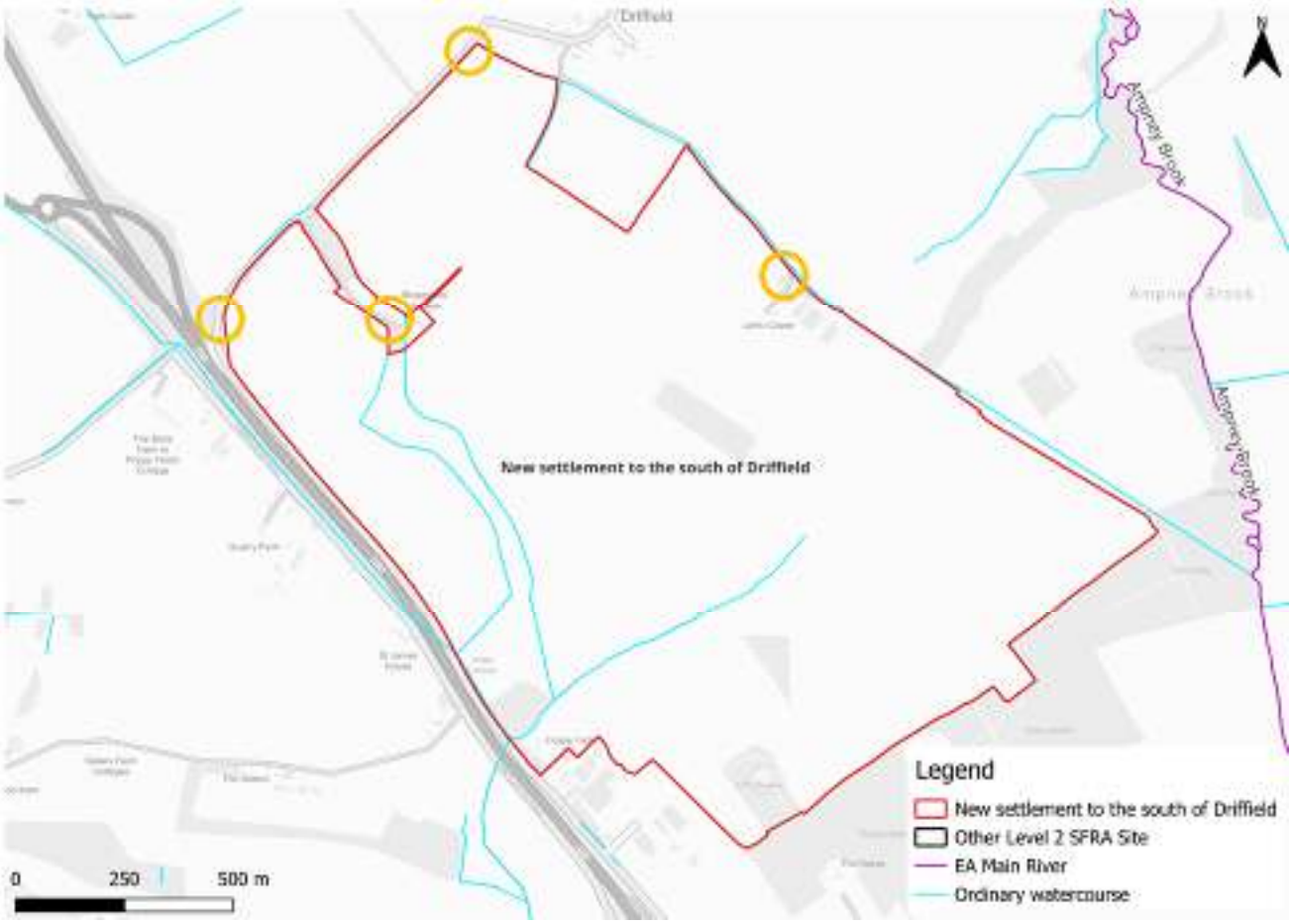

Figure 2-4: Potential access and escape routes

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

- Observations:
  - The site is located mostly within Flood Zone 1 and therefore at low risk of flooding from rivers.
  - The risk from ordinary watercourse in the south of the site is based on the EA's NNM and not detailed modelling which is considered to be the most up to date information on fluvial risk to the site and surrounding area. However, the NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
  - The potential fluvial risk posed by the unnamed ordinary watercourses to the site cannot be assessed given no modelling is available. This should be considered as part of a site-specific FRA.
- Mitigation:

- No development buffers should be in place along the ordinary watercourses in the form of blue green corridors, which can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits. This is reflected in the WwNP mapping showing potential for riparian tree planting along each watercourse.

- Access and escape:
  - Based on current information, safe access and escape routes appear achievable via multiple locations surrounding the site.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths Present Day

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extents map (May 2026), surface water risk across the site is nominal, as shown in Table 3-1 and Figure 3-1. Surface water risk is present across the site as areas of scattered ponding in topographic low spots. There is a surface water flow path within the centre of the site, which is confined to the channel of the unnamed ordinary watercourse.

Greatest surface water flood depths in the 1% AEP event are between 0.9 and 1.2 m (Figure 3-2). Safe access and escape routes are achievable via multiple locations surrounding the site.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
95	2	1	2

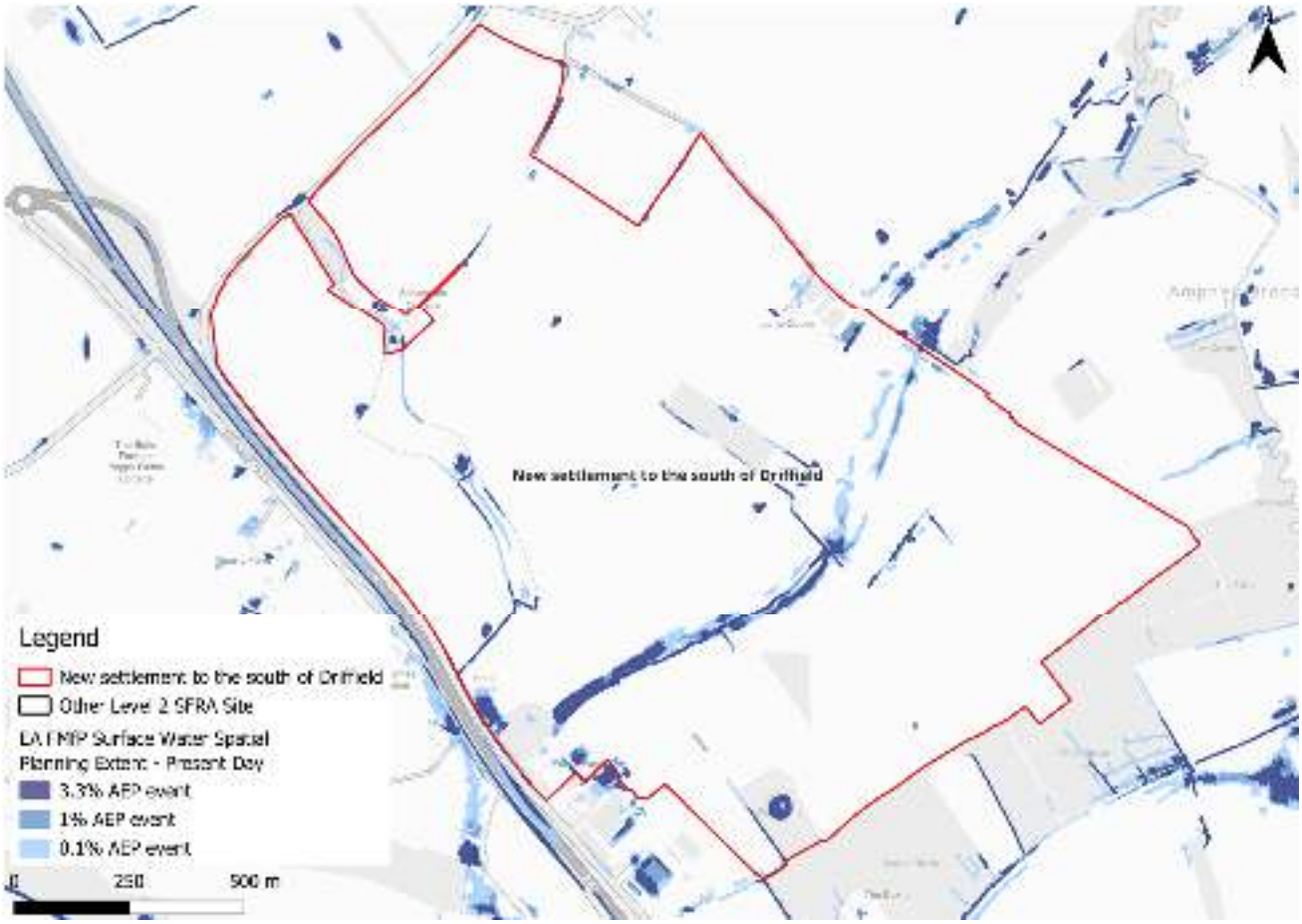

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

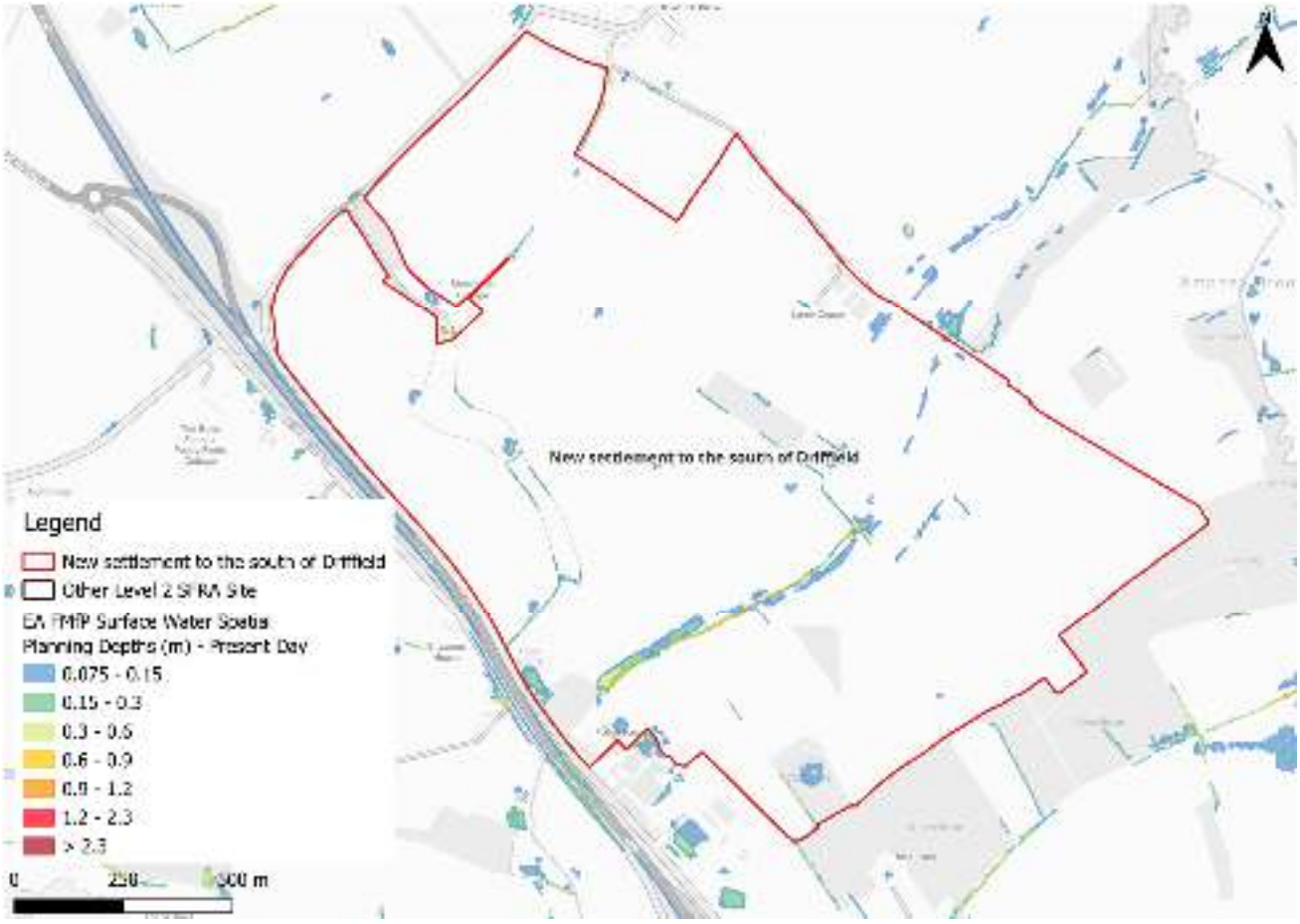

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows there to be an area of 'significant' flood hazard (Figure 3-3). There are differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping whereby the RoFSW shows a much larger area to be at risk. Given the differences between the two datasets, the hazard information should be discounted and assessed further at the FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day 1% AEP event surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRA's should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Gloucestershire and the Vale management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Gloucestershire and the Vale Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. Surface water risk is not shown to increase significantly across the site when considering climate change. Flood depths are shown to remain at between 0.9 and 1.2 m (Figure 3-5). Safe access and escape routes would likely remain achievable via several locations surrounding the site.

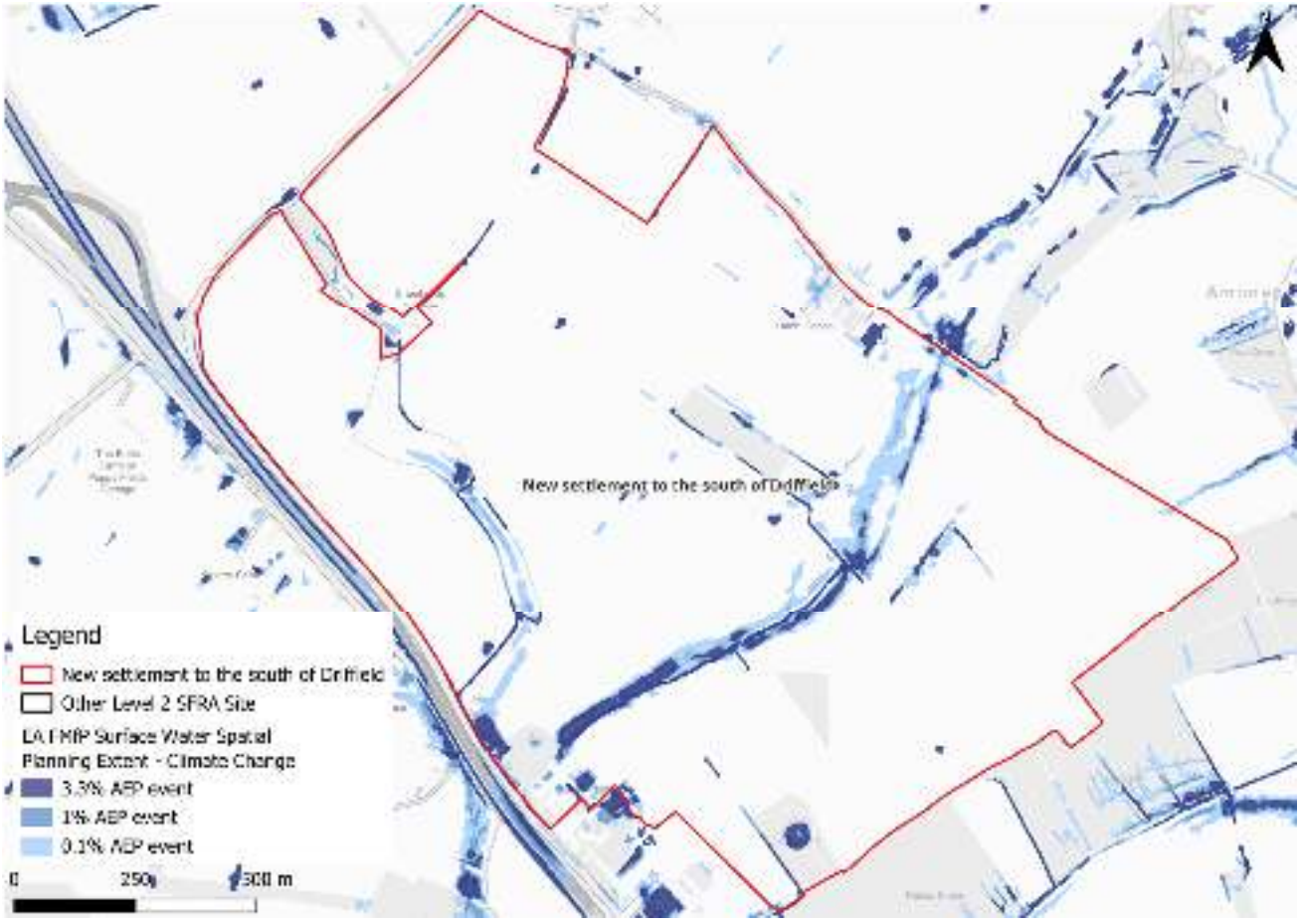

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

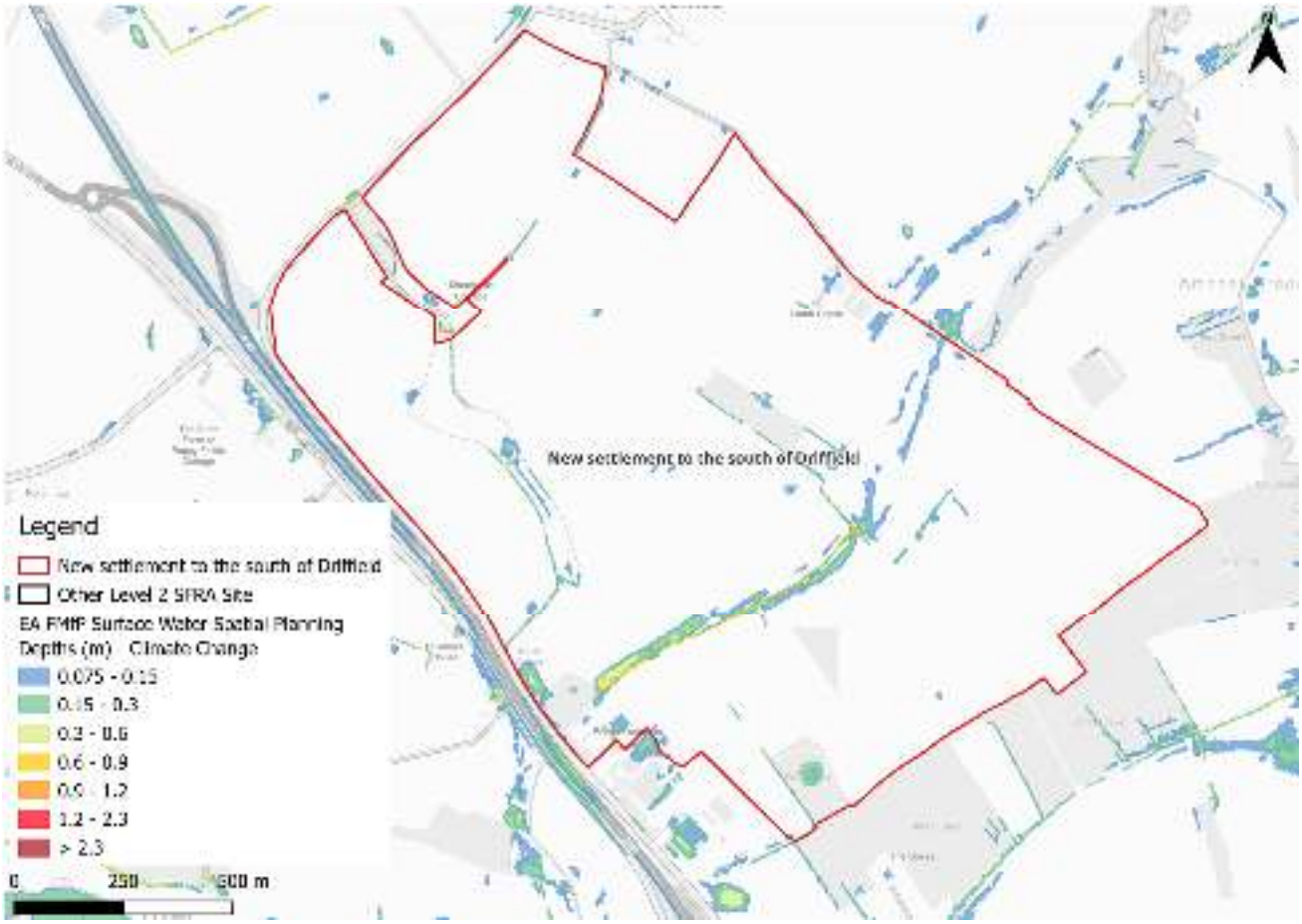

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event surface water flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is categorised as 'moderate' outside of the ordinary watercourse channel (Figure 3-6).

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day 0.1% AEP event surface water flood hazard as a climate change proxy

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There have been no recorded sewer flooding incidents within the Siddington & Cerney Rural Ward.

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

- Current risk to the site is predominantly low, with 95% of the site being outside of the 0.1% AEP surface water flood extent. Surface water risk is largely present as areas along the ordinary watercourses and areas of scattered ponding across the site.
- Topographic low spots, and the surface water flow paths along the course of the ordinary watercourses onsite, should be considered and included in site design and left in place to flood naturally when required.
- Risk to the site is not shown to increase significantly in extent within the site when considering the impact of climate change.

- A drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield runoff rates or betterment should apply. The developer should consult the LLFA and follow local and National SuDS guidance.
- Safe access and escape routes would likely be achievable via multiple locations when considering surface water risk.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within two catchments, namely Churn (Baunton to Cricklade) and Ampney and Poulton Brooks (Source to Thames). These have been identified as high and low sensitivity catchments respectively. Planning considerations for sites at high and low sensitivity to the cumulative impacts of development can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

The majority of the site is located within an area where there is a risk of groundwater emergence to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The majority of the underlying bedrock within the site is sandstone, limestone and argillaceous rocks, with an area of the site being mudstone, siltstone and sandstone (Figure 5-2). Sandstone and limestone can have high permeability and porosity, increasing infiltration rates, though the permeability of limestone can vary widely. Superficial deposits include clay and silt which have low permeability. Based on the groundwater emergence map, infiltration SuDS at this site may not be an option, though the drainage strategy for the site should fully investigate water table levels through standpipe monitoring during the period of highest groundwater levels e.g. November to April.

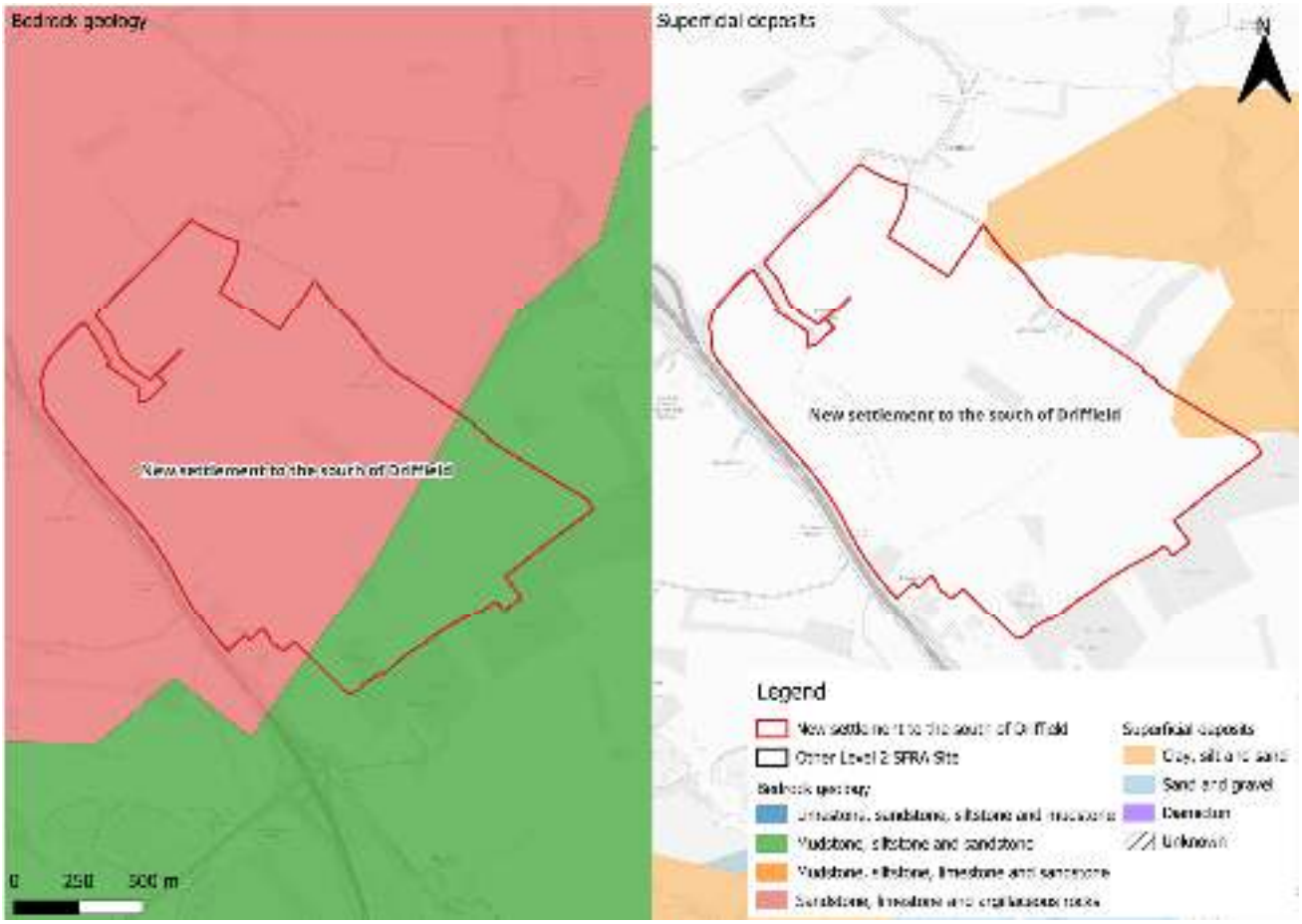

Figure 5-2: BGS Geology - Bedrock and superficial deposits

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. defence breaches, or blockages of culverts or drainage assets.

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

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. 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 partially located within Flood Zone 3a. Based on current information, the site would likely pass the Exception Test given fluvial risk is confined to the ordinary watercourse in the south. However, modelling of the unmodelled ordinary watercourses should be carried out at the FRA stage. Were new information to made available, the Exception Test should be reapplied.

7.2 Main recommendations and site-specific FRA requirements

Based on the evidence presented in the Level 1 SFRA (2026) and this Level 2 SFRA:

- It should be possible to develop this site for residential uses given its location largely within Flood Zone 1 and nominal surface water risk.
- Ideally, no development buffers should be in place along the unnamed ordinary watercourses in the form of blue green corridors, which can provide a flood storage function as well as providing BNG, ecological, amenity, social, and wellbeing benefits.
- Modelling of the unnamed ordinary watercourses onsite should be carried out to robustly define the risk to the site for both present day and with climate change.
- Groundwater conditions must be investigated further through the site-specific FRA. This should be assessed through standpipe monitoring during the period of highest groundwater levels e.g. November to April.
- Safe access and escape routes appear achievable from several locations, based on current information.
- The site-specific FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the CDC 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; the water companies; the highways authorities; and the emergency services.

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Cotswold Level 2 Strategic Flood Risk Assessment Site Summary

Site CC10A - Land East of Chandlers, Station Road

Final Draft Report

Prepared for	Date
Cotswold District Council	August 2026

COTSWOLD
District Council

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Contract

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This report describes work commissioned by Cotswold District Council by an instruction dated 28 May 2026. The Client's representative for the contract was Joanne Corbett of Cotswold District Council. Laura Thompson-Jones of JBA Consulting carried out this work.

Purpose and Disclaimer

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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 June and August 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 for their assistance with this work.

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Contents

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CC10A. The content of this report assumes the reader has already consulted the 'Cotswold Level 1 SFRA' (2026) and the 'Cotswold Level 2 SFRA Main Report' (2026) and is therefore familiar with the terminology used in this report.

1.1 Site CC10A

- Location: Land East of Chandlers, Station Road (NGR 416250, 239353)
- Existing site use: Open greenspace
- Existing site use vulnerability: Water compatible
- Proposed site use: Residential
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 0.73
- Watercourse: The Cam (ordinary watercourse)
- Environment Agency (EA) flood model: N/A
- Summary of requirements from Level 2 SFRA scoping stage:
    - Assessment of fluvial flood depths, velocities and hazards (not possible as no detailed model available for The Cam)
    - Assessment of surface water flood extent, depths and hazards
    - Assessment of all other sources of flood risk
    - Assessment of flood risk management measures and natural flood management

Figure 1-1: Site location boundary

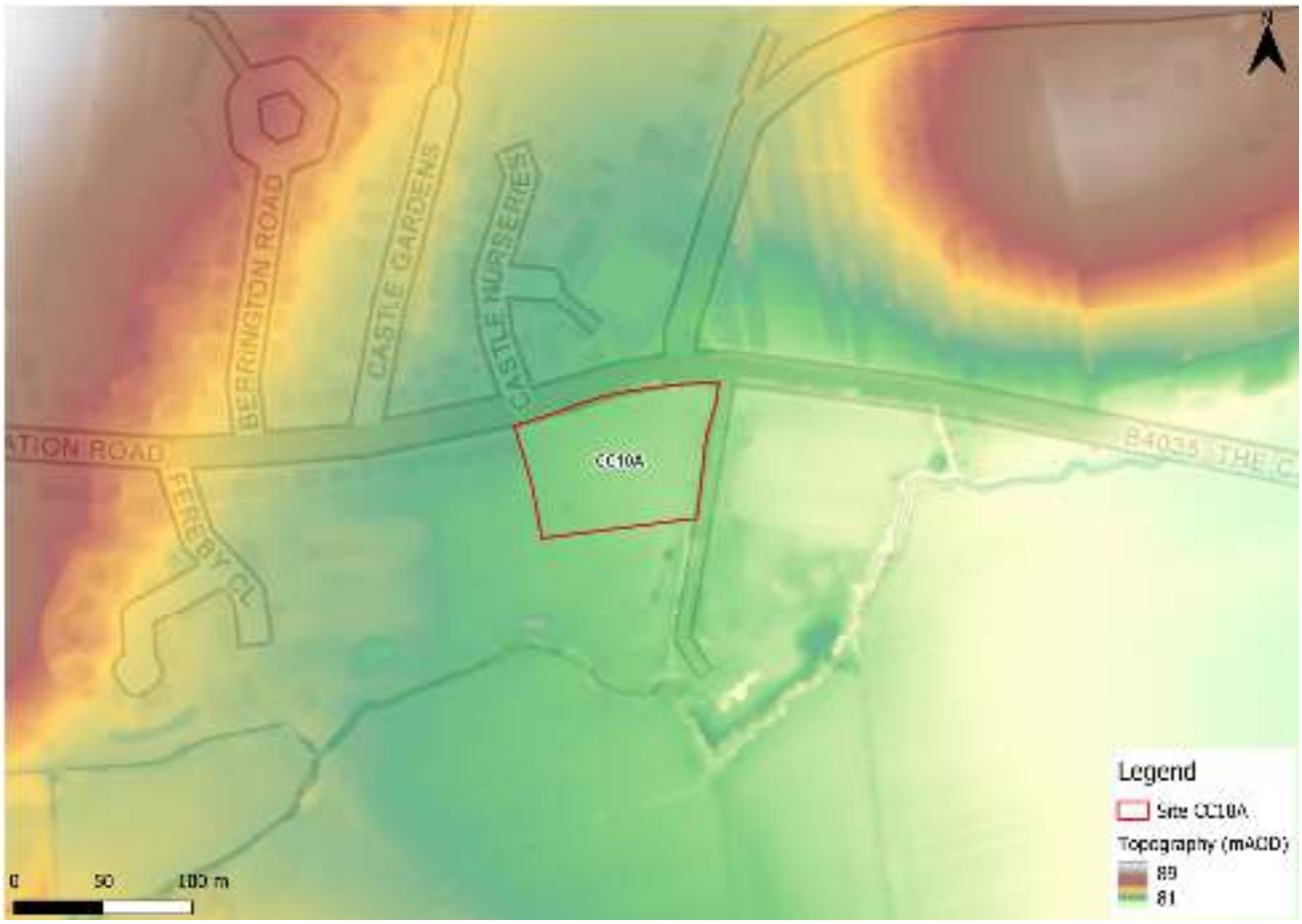

Figure 1-2: Topography

The topography of the site slopes from west to east towards the floodplain of The Cam.

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed May 2026) and Flood Zone 3b (functional floodplain), as updated through the Cotswold Level 1 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. The Flood Map for Planning does not consider flood defence infrastructure (Section 2.4).

The site is partially within Flood Zones 3a and 2 due to risk from The Cam, which is an ordinary watercourse. There is no detailed model available for The Cam meaning the flood zones here are based on the EA's New National Model (NNM) dataset. Flood depths and hazards therefore are not available for interrogation.

Table 2-1: Present day 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)
45	33	22	0

Figure 2-1: Present day risk

2.2 Impacts from climate change

The EA's SFRA guidance states that SFRAs should assess the central allowance for the 2080s epoch for peak river flows. The site is located within the Avon Warwickshire Management Catchment. The central allowance within this catchment is 21% on peak flows (Table 2-2). There is no local detailed model for The Cam therefore the required event cannot be assessed.

Table 2-2: Modelled climate change allowances for peak river flows within the Avon Warwickshire Management Catchment

Epoch	Central (%)	Higher (%)	Upper (%)
2020s	7	12	22
2050s	8	14	31
2080s	21	32	59

2.2.1 Flood Map for Planning - Flood Zones plus Climate Change

Figure 2-2 shows the Flood Map for Planning - Flood Zones plus Climate Change dataset which includes the central allowance for the 2080s epoch. This represents the impact of

climate change on Flood Zone 3a and Flood Zone 2 combined. There is a slight increase in risk to the site as a result of climate change.

Figure 2-2: EA Flood Zones plus Climate Change

2.3 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered. There is one recorded event, according to these datasets, caused by channel capacity exceedance of The Cam in July 1968 (Figure 2-3). The LLFA provided its historic floods register. There are ten recorded flooding incidents within the Campden & Vale Ward within which the site is located.

Figure 2-3: EA Historic Flood Map

2.4 Flood risk management

2.4.1 Flood defences

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

2.4.2 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. Figure 2-4 shows that there are large areas around the site that could benefit from riparian and floodplain tree planting. Tree planting can help to slow the flow to benefit areas downstream. The WwNP mapping is broadscale and indicative. Further investigation is required for any land shown to have potential for WwNP.

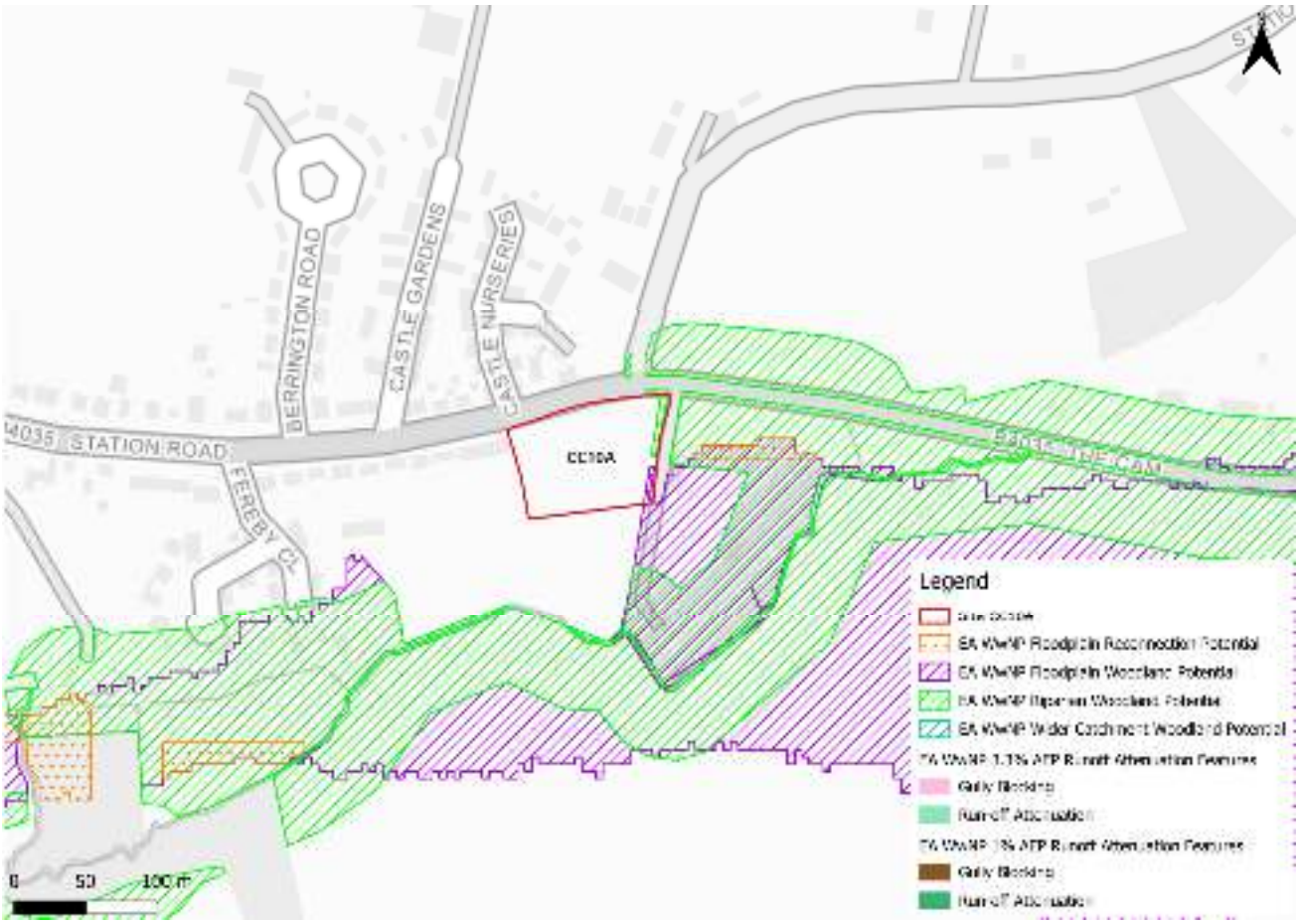

Figure 2-4: Working with Natural Processes

2.5 Emergency planning

2.5.1 Flood warnings and alerts

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 floodplain of The Cam including the southern boundary of the site are located within a FAA, namely the ' River Stour in South Warwickshire' FAA (Figure 2-5).

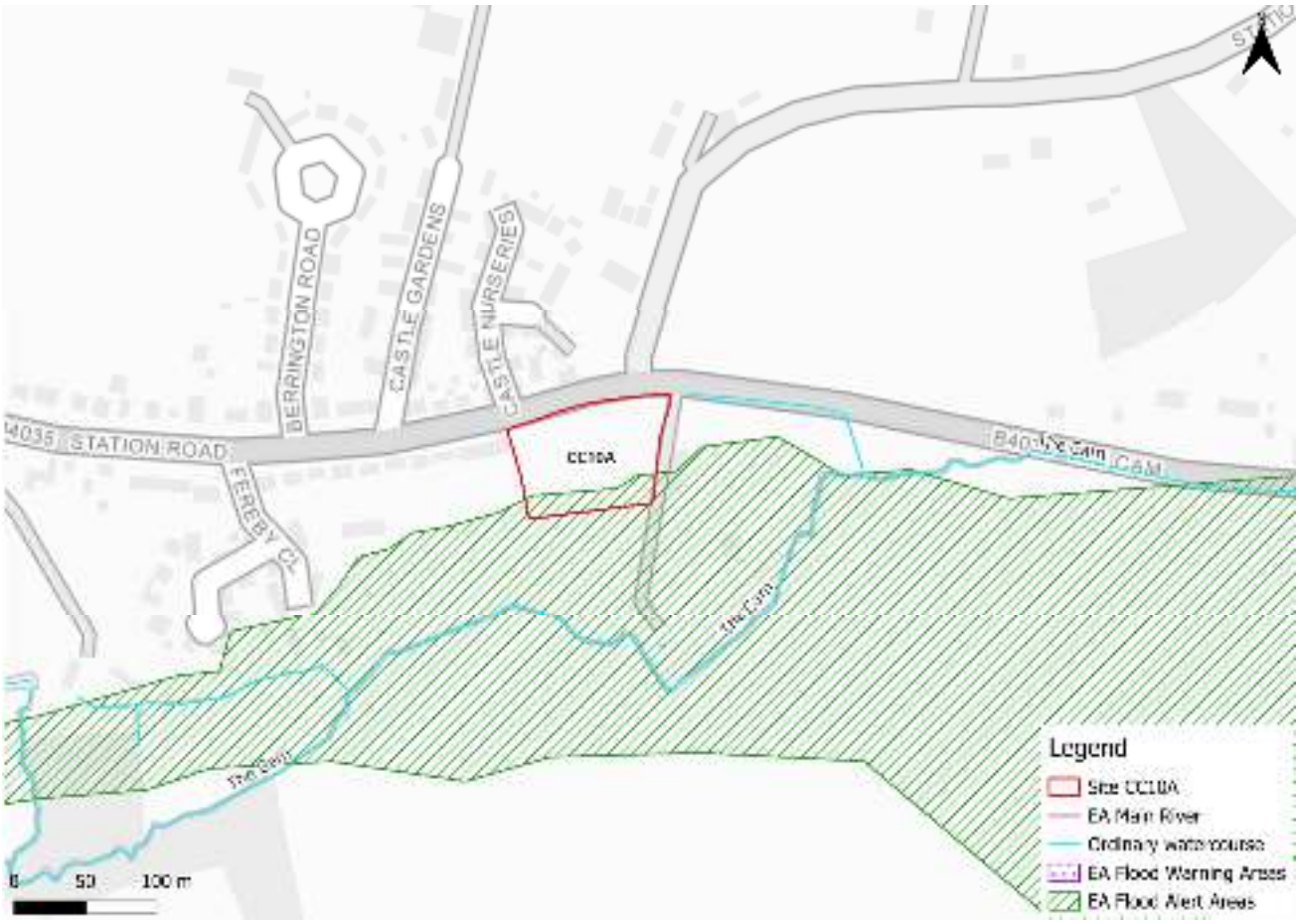

Figure 2-5: Flood warnings and alerts

2.5.2 Access and escape routes

Based on the Flood Map for Planning, safe access and escape routes are available during a flood event via existing routes to Station Road (Figure 2-6).

Figure 2-6: Potential access and escape routes

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

- Observations:
  - The site is at risk from flooding from The Cam ordinary watercourse.
  - The risk from The Cam is based on the EA's NNM and not detailed modelling which is considered to be the most up to date information on fluvial risk to the site and surrounding area. However, the NNM does not contain depth or hazard information, therefore risk cannot be robustly defined at this stage.
- Mitigation:
  - The risk area should remain as open greenspace that is designed to mitigate floodwater. This can provide a flood storage function as well as providing Biodiversity Net Gain (BNG), ecological, amenity, social, and wellbeing benefits.
  - All development should be directed to Flood Zone 1 outside of the climate change risk area. However, this will limit the number of plots available on the site.
  - Were development in the risk area to be considered, the EA will likely expect detailed modelling of The Cam to be carried out at the site-specific FRA stage

to robustly inform on present day and future risk to the site, including flood depths and hazards.
    - EA flood alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.
- Access and escape:
    - Based on current information, safe access and escape routes are available via Station Road.

3 Flood risk from surface water

3.1 Existing risk

3.1.1 Flood Map for Planning - Surface Water Spatial Planning Extents and Depths

Based on the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Extent map (May 2026), the site is at significant risk of surface water flooding as shown in Table 3-1 and Figure 3-1 and also the depth map in Figure 3-2. Maximum flood depths are greater than 0.3m in the centre and east of the site.

The provision of safe access and escape routes via Station Road will require further investigation at the FRA stage.

Table 3-1: Existing surface water flood risk based on percentage area at risk based on the Flood Map for Planning - Surface Water Spatial Planning dataset

Less than 0.1% AEP event (% area)	0.1% AEP event (% area)	1% AEP event (% area)	3.3% AEP event (% area)
32	16	7	45

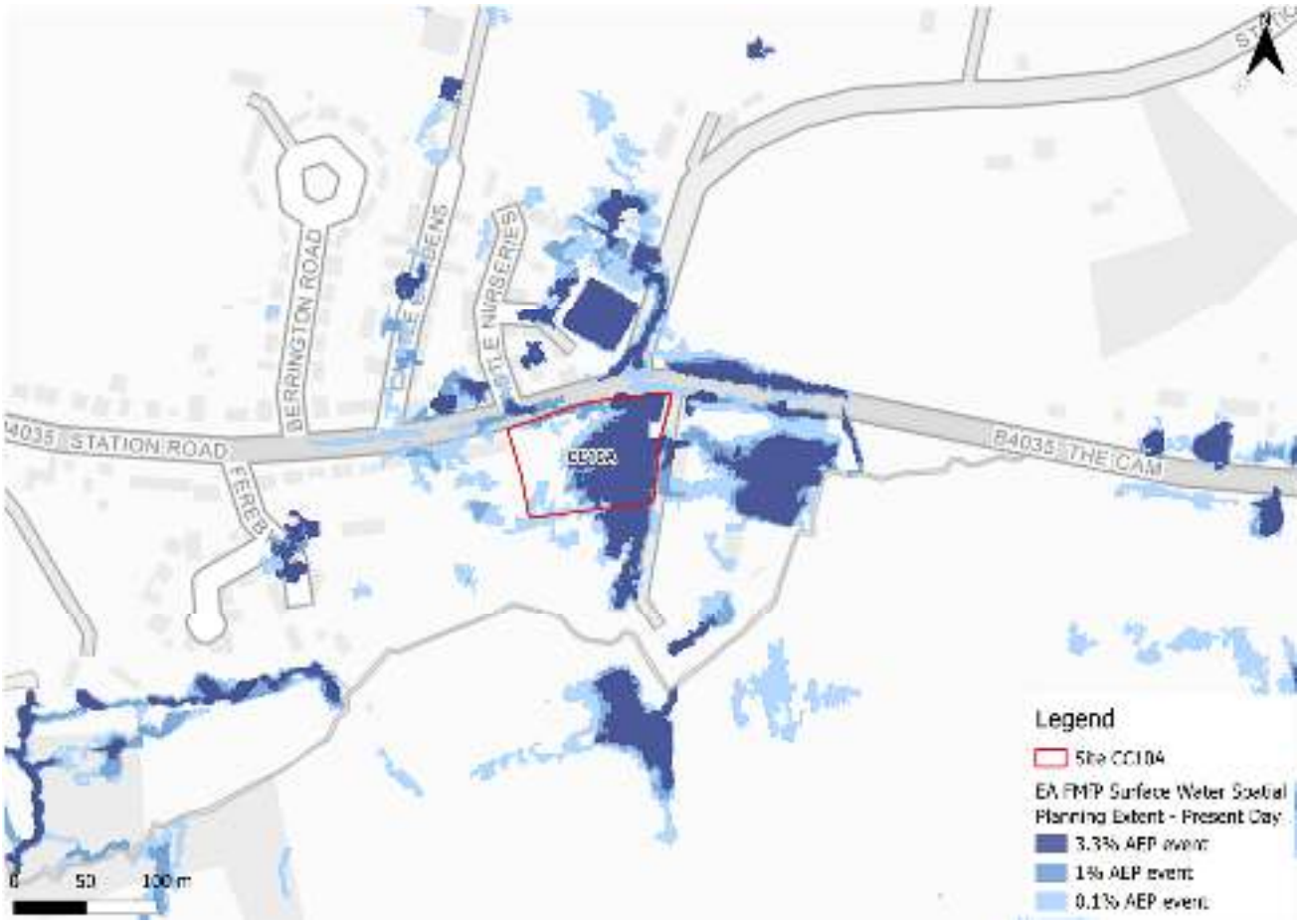

Figure 3-1: Flood Map for Planning - Surface Water Spatial Planning Extents Present Day

Figure 3-2: Flood Map for Planning - Surface Water Spatial Planning Present Day 1% AEP event surface water flood depths (m)

3.1.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning data does not include hazard information suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation Risk of Flooding from Surface Water (RoFSW) hazard mapping in addition to the Flood Map for Planning - Surface Water Spatial Planning extents and depths, as the best available information.

The RoFSW map shows there to be a moderate flood hazard in the east of the site. Access via Station Road is low hazard and therefore should remain a viable route (Figure 3-3). There are differences between the Flood Map for Planning - Surface Water Spatial Planning map and the third generation RoFSW hazard mapping. However, updated surface water hazard information should be confirmed at the site-specific FRA stage.

Note: the Flood Map for Planning - Surface Water Spatial Planning data does not map flooding less than 0.075m (7.5cm) in depth. Therefore, where the map may show no flooding, there may be shallow flooding up to a depth of 0.075m. In contrast, the third generation RoFSW does not map flooding with a hazard rating of less than 0.575.

Figure 3-3: Third generation - Risk of Flooding from Surface Water map present day medium risk surface water flood hazard[1]

3.2 Impacts from climate change

3.2.1 Flood Map for Planning - Surface Water Spatial Planning extents and depths

The EA's climate change allowance guidance states that SFRAs should assess the upper end peak rainfall allowance for the 2070s epoch. This dataset is now included in the EA's national scale Flood Map for Planning - Surface Water Spatial Planning Climate Change dataset (May 2026). The peak rainfall intensity allowances for the Avon Warwickshire management catchment are shown in Table 3-2. The allowance for the 0.1% AEP event is not stated in the EA guidance.

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.

Table 3-2: Peak rainfall intensity allowances for the Avon Warwickshire Management Catchment

Return period	Central allowance 2070s (% increase)	Upper end allowance 2070s (% increase)
3.3%	25	35
1%	25	40

Figure 3-4 shows the surface water flood extents for the 2070s upper end climate change scenario. The site is at significant additional risk from surface water climate change.

Flood depths of greater than 0.3m increase in extent across the site (Figure 3-5).

Safe access and escape routes would likely remain achievable via Station Road.

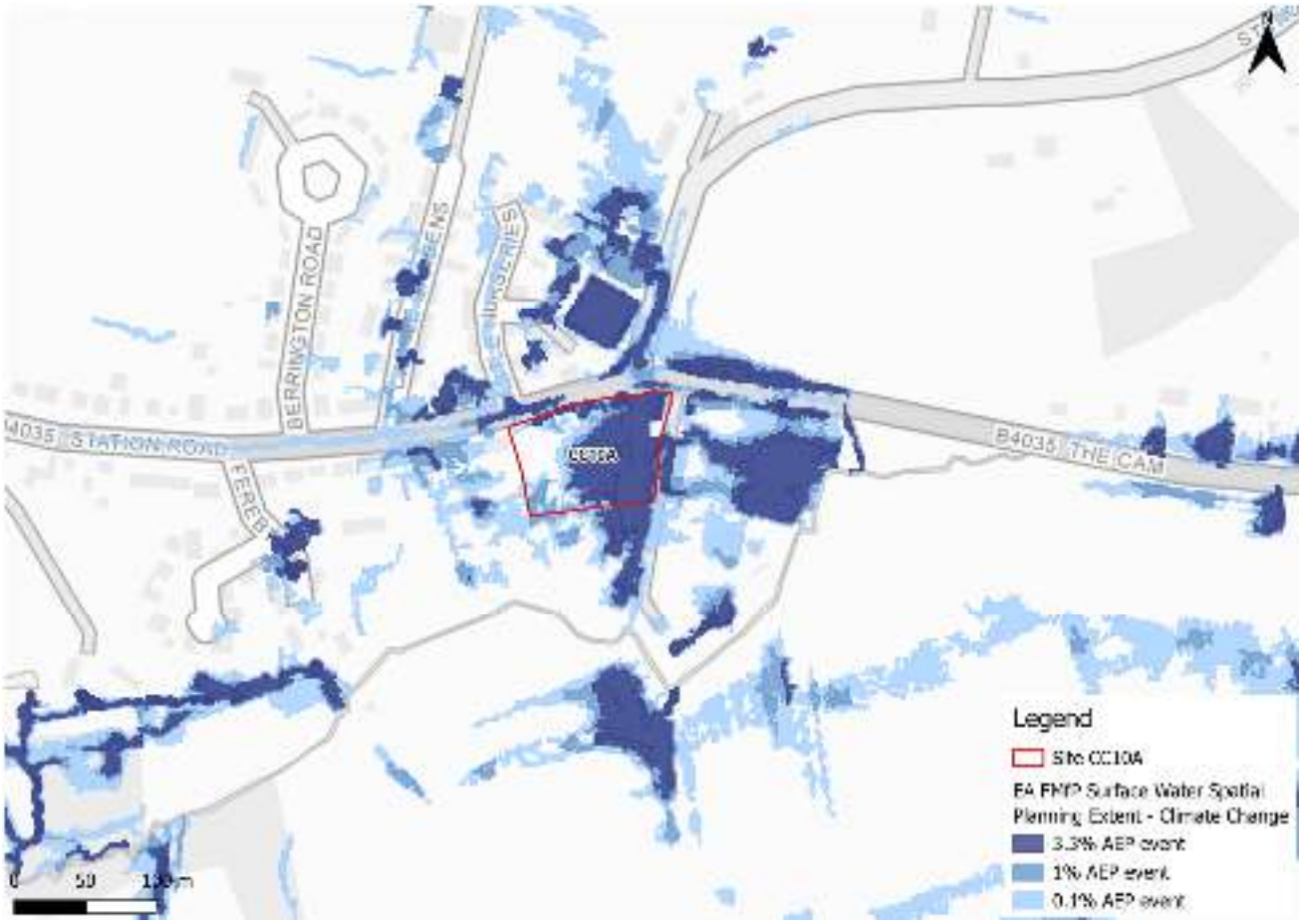

Figure 3-4: Flood Map for Planning - Surface Water Spatial Planning Extents Climate Change

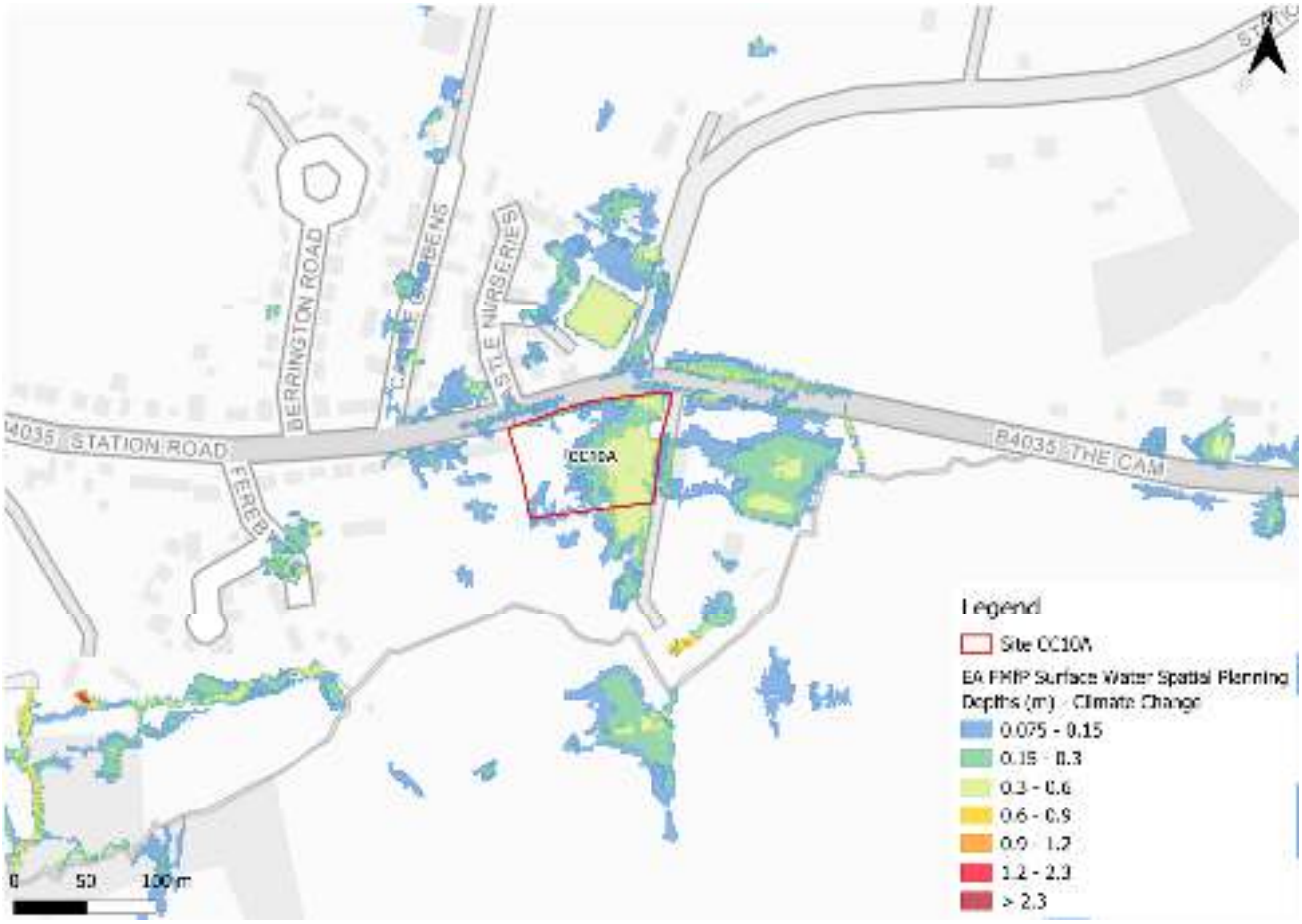

Figure 3-5: Flood Map for Planning - Surface Water Spatial Planning Climate Change 1% AEP event flood depths (m)

3.2.2 Risk of Flooding from Surface Water - Third Generation Hazard

At the time of writing, the EA's latest Flood Map for Planning - Surface Water Spatial Planning Climate Change data does not include hazard information suitable for planning purposes. This Level 2 SFRA therefore considers the low risk RoFSW surface water event as a conservative proxy for the RoFSW medium risk event plus climate change, as the best available information to assess surface water flood hazards. The impact of climate change on surface water flood hazards should be considered at the site-specific FRA stage.

Using the RoFSW low risk event as a proxy, surface water flood hazard in the medium risk event is mainly categorised as moderate and significant (Figure 3-6).

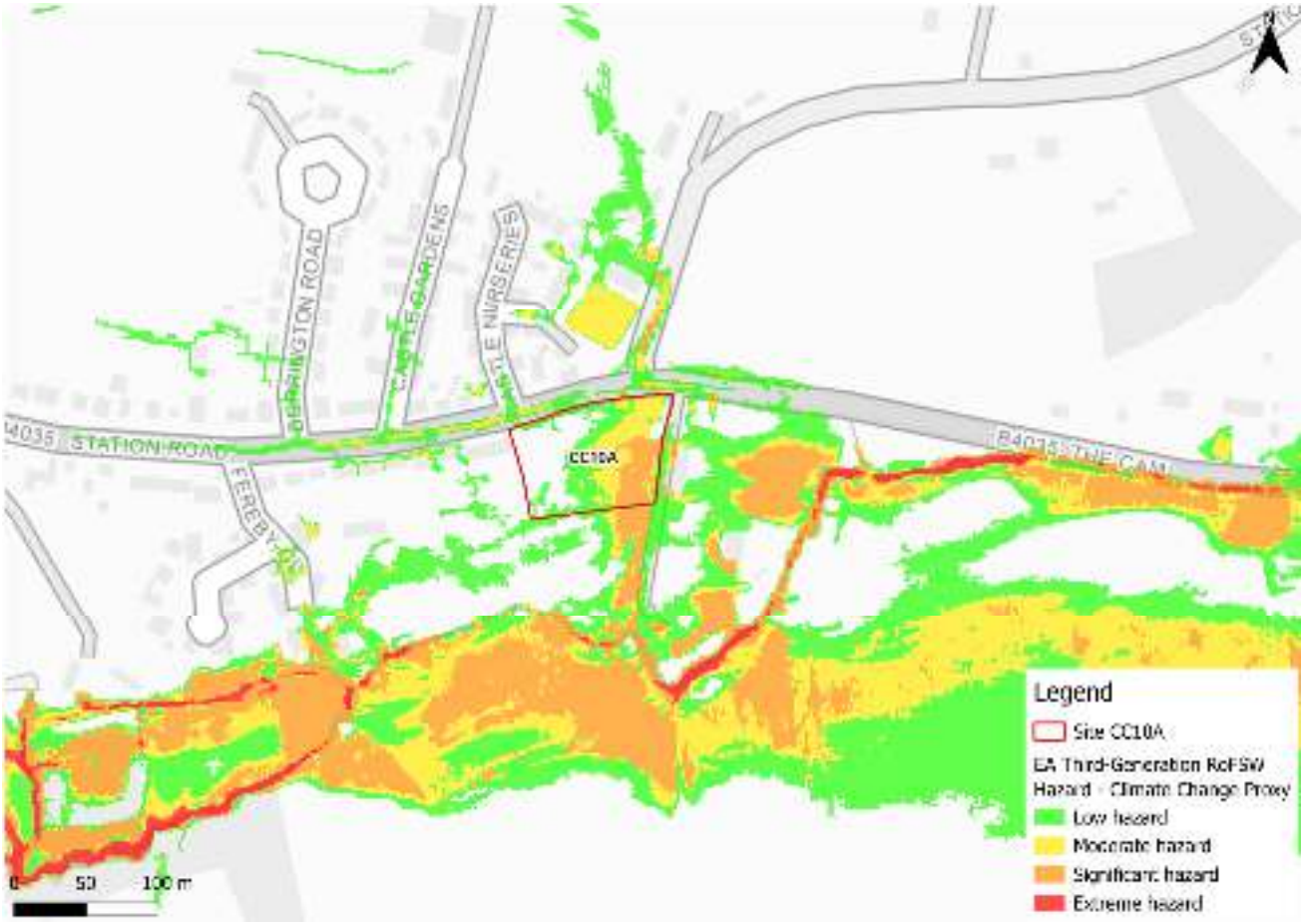

Figure 3-6: Third generation - Risk of Flooding from Surface Water map present day low risk surface water flood hazard as a proxy for climate change

3.3 Sewer flood risk

The water companies provided their historic risk registers which were aggregated by ward. There are 22 recorded sewer flooding incidents within the Campden & Vale Ward.

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

- Current risk to the site is significant, with 45% of the site being within the 3.3% AEP surface water flood extent. Only 32% of the site is outside of the 0.1% AEP flood extent and considered low risk.
- Risk to the site is shown to increase within the site when considering the impact of climate change.
- Much of the risk area coincides with the fluvial risk area and should be safeguarded for flood storage.
- Safe access and escape routes may be achievable via Station Road.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Cotswold Level 1 SFRA (2026), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within one catchment, namely, the Knee Bk - source to conf Blockley Bk catchment. This catchment is ranked as a high sensitivity catchment. Planning considerations for all sites can be found in Appendix F of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology and SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications. The site is shown to be at no risk of groundwater emergence.

Figure 5-1: JBA 5m Groundwater Emergence Map

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.	

The underlying bedrock within the site is mudstone, siltstone, limestone and sandstone (Figure 5-2) which will have variable permeability and porosity. There is no record of superficial deposits in the area.

Figure 5-2: BGS Geology - Bedrock and superficial deposits