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Huntingdonshire Level 2 Strategic Flood Risk Assessment Site Summary

Site CfS:372

Final Draft Report

Prepared for

Huntingdonshire District Council

Date

November 2025

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Contract

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This report describes work commissioned by Huntingdonshire District Council by an instruction via email dated 21 July 2025. The Client's representative for the contract was Frances Schulz of Huntingdonshire District Council. Freya Nation 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 21 July 2025 and 6 November 2025 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate.

Acknowledgements

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

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1 Background

This is a Level 2 Strategic Flood Risk Assessment (SFRA) site screening report for Local Plan Site CfS:372. The content of this report assumes the reader has already consulted the 'HDC Level 1 SFRA' (2024) and read the 'HDC Level 2 SFRA Main Report' (2025) and is therefore familiar with the terminology used in this report.

1.1 Site CfS:372

- Location: Land East of Silver Street, Godmanchester
- Existing site use: Agricultural
- Existing site use vulnerability: Less vulnerable
- Proposed site use: Residential
- Proposed site use vulnerability: More vulnerable
- Site area (ha): 5.12
- Watercourse: Stoneyhill Brook (no detailed model)
- Environment Agency (EA) model: N/A
- Summary of requirements from Level 2 SFRA scoping stage:
    - Significant Flood Zone 3b present on site
    - Assessment of fluvial flood depths, velocities and hazards
    - Assessment of surface water flood extents, depths and hazard
    - Assessment of all other sources of flood risk

Figure 1-1: Existing site location boundary

Figure 1-2: Aerial photography

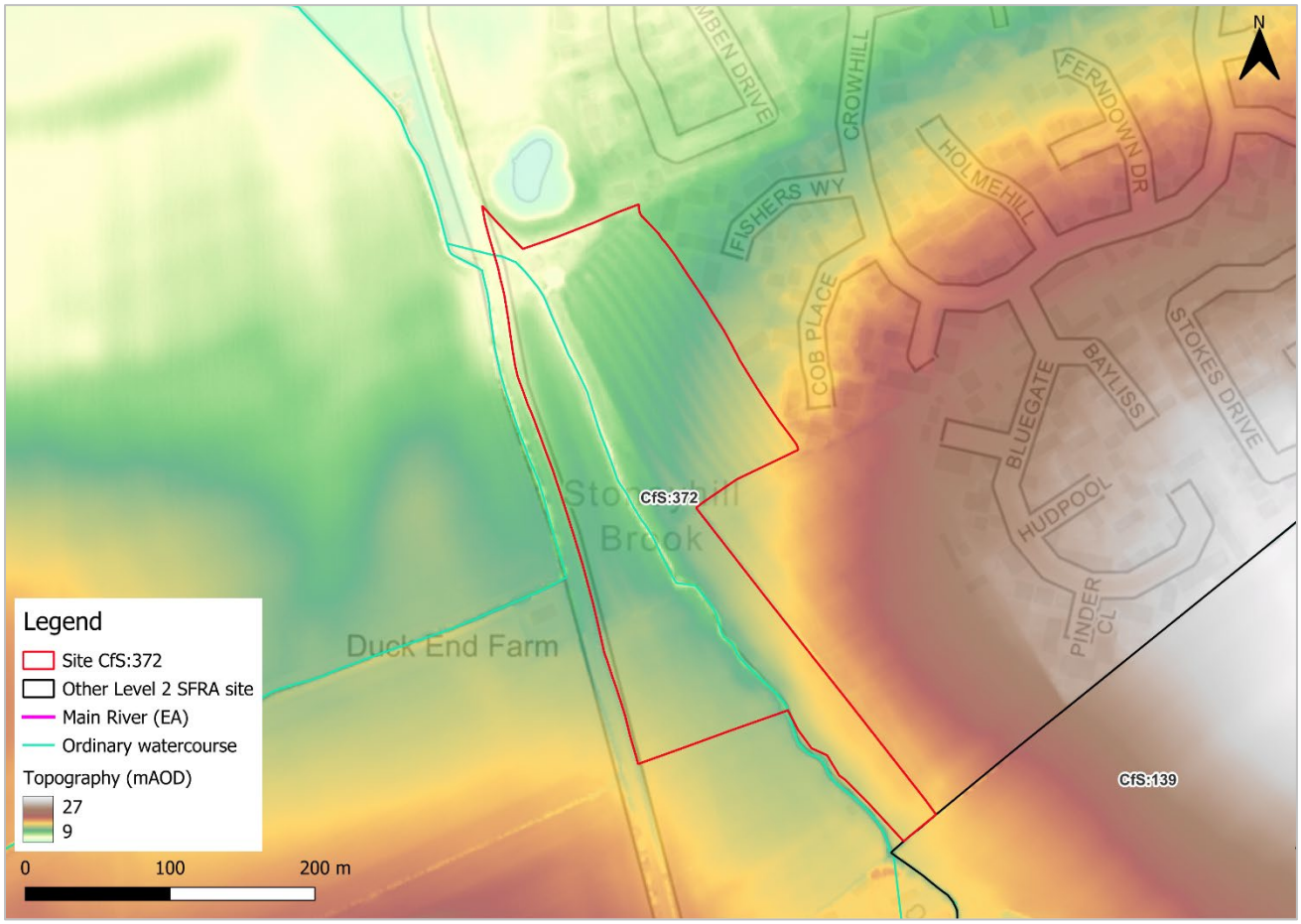

Figure 1-3: Topography

2 Flood risk from rivers

2.1 Existing risk

2.1.1 Flood Map for Planning and functional floodplain

Based on the EA's Flood Map for Planning (accessed July 2025) and Flood Zone 3b (functional floodplain), as updated in this Level 2 SFRA, the percentage areas of the site within each flood zone are stated in Table 2-1 and can be viewed on Figure 2-1. This version of the Flood Map for Planning does not consider flood defence infrastructure (Section 2.2) or the impacts of climate change (Section 2.3).

The site is partially located within Flood Zones 3b, 3a and 2 due to the presence of Stoneyhill Brook which flows through the site. There is no detailed model available for Stoneyhill Brook, therefore the risk is likely based on the EA's New National Model. It is therefore not possible to assess fluvial flood depths or hazards.

Table 2-1: Existing flood risk based on percentage area of site at risk

Flood Zone 1 (% area)	Flood Zone 2 (% area)	Flood Zone 3a (% area)	Flood Zone 3b (% area)
88	3	2	7

Figure 2-1: Existing risk

2.2 Flood risk management

2.2.1 Flood defences

There are no flood defences in the vicinity of the site, according to the EA's Spatial Flood Defences dataset.

2.2.2 Working with Natural Processes

The EA's Working with Natural Processes (WwNP) dataset has been interrogated to identify opportunities for Natural Flood Management (NFM) to reduce flood risk to the site and surrounding areas. These areas are shown in Figure 2-2. Note, the WwNP mapping is broadscale and indicative, therefore further investigation will be required for any land shown to have potential for WwNP. There is potential for floodplain reconnection at the north of the site. There is also potential for floodplain woodland, riparian woodland and wider catchment woodland planting within the site. Tree planting can help reduce runoff.

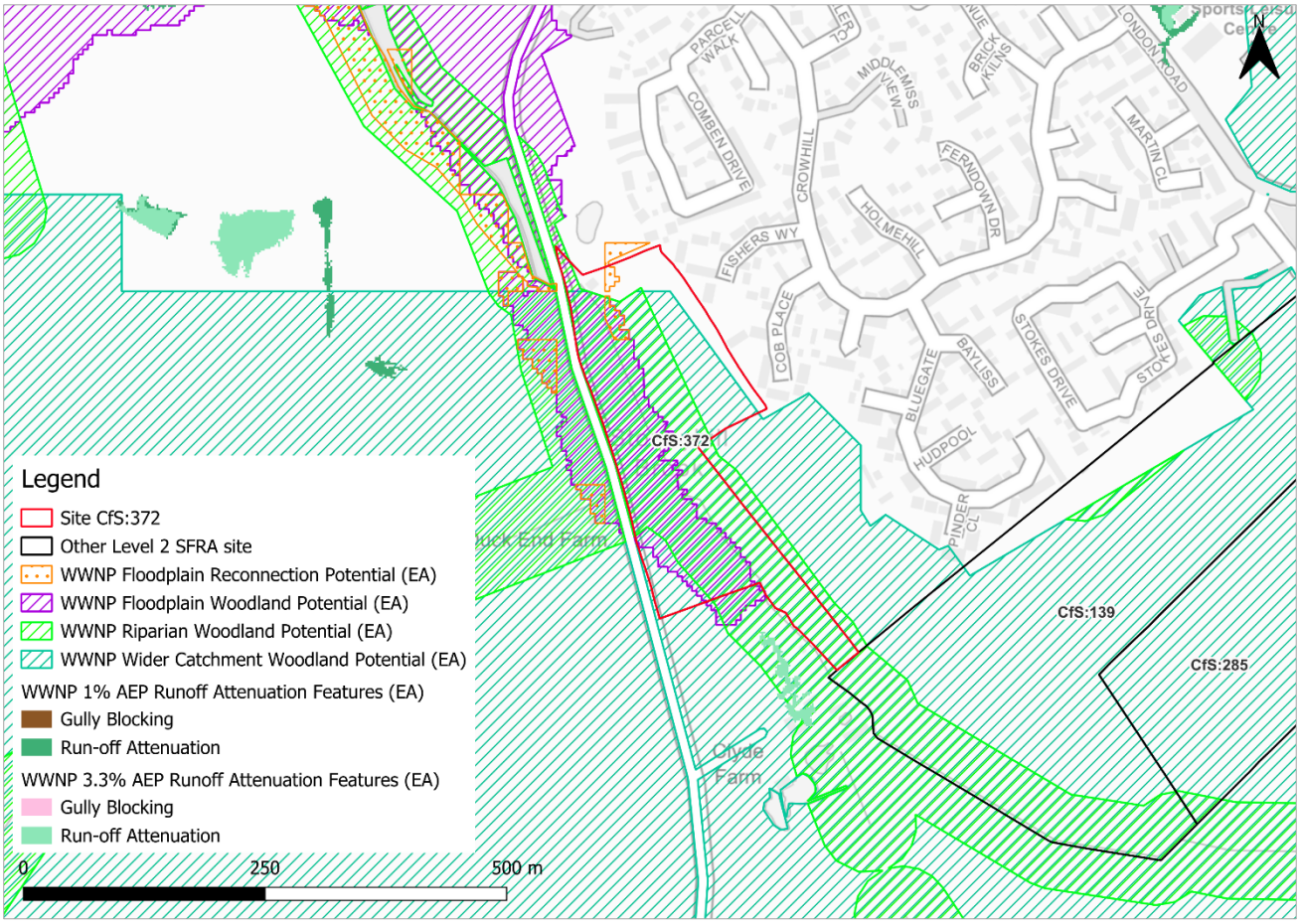

Figure 2-2: Natural Flood Management (NFM) potential mapping

2.3 Impacts from climate change

2.3.1 Fluvial

The EA's SFRA guidance states that SFRAs should assess the central allowance for less, more, highly vulnerable, and water compatible development. The higher central allowance should be assessed for essential infrastructure. However, as there is no existing detailed model of Stoneyhill Brook, modelling of climate change has not been possible.

The impacts of climate change on flood risk from Stoneyhill Brook have been modelled by the EA through the New National Model which models the central allowance (+19% on peak river flows for the Upper and Bedford Ouse EA management catchment) for the 3.3% AEP defended, 1% AEP defended and undefended, and 0.1% AEP defended and undefended fluvial events. The flood extents for the defended and undefended events are identical. For the defended climate change events, risk is modelled to be similar to that shown in Flood Zones 2 and 3a, largely impacting the areas either side of the channel of Stoneyhill Brook as well as the northwestern corner of the site where the watercourse is culverted beneath Silver Street, as shown in Figure 2-3.

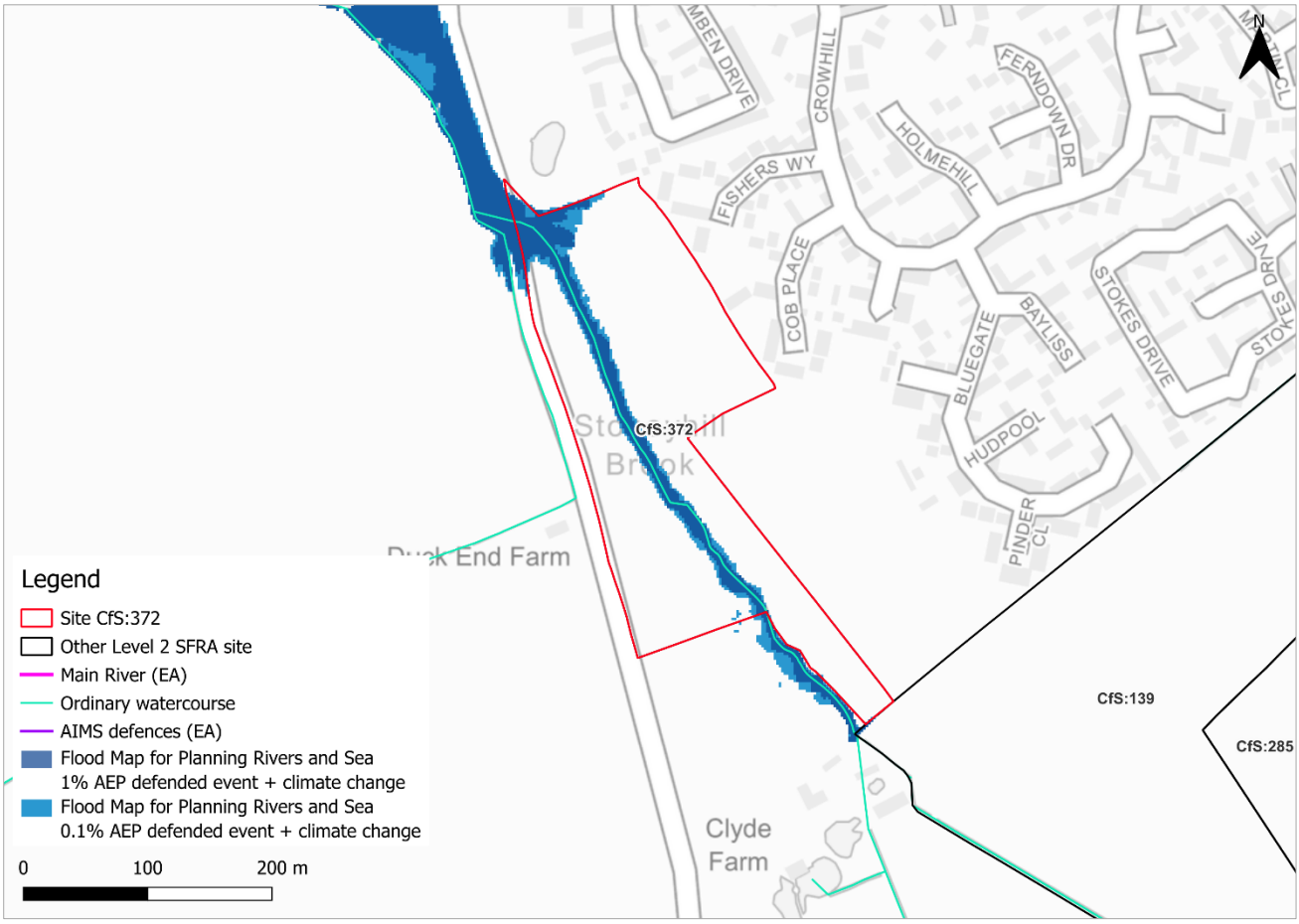

Figure 2-3: Flood Map for Planning 1% and 0.1% AEP defended flood events +19% (central climate change allowance)

2.3.2 Tidal

The EA's Flood Map for Planning shows the site is not at risk from tidal climate change.

2.4 Historic flood incidents

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered and mapped in Figure 2-4 which shows that the northwestern corner of the site flooded in March 1947. The cause of this flood event is unknown.

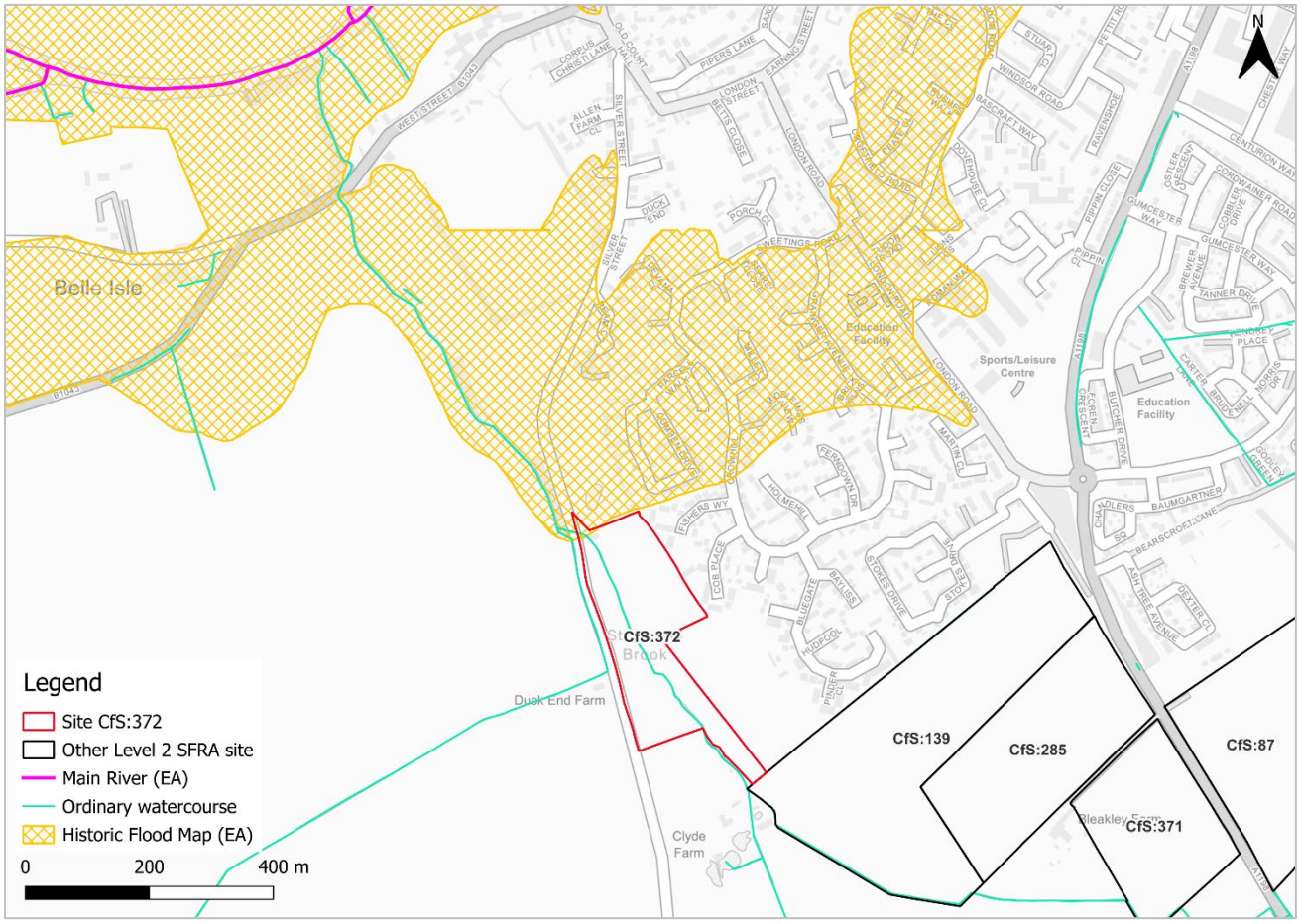

Figure 2-4: Recorded historic flood events onsite and around the site

2.5 Emergency planning

2.5.1 Flood warning

The EA operates a Flood Warning Service for properties located within a Flood Warning Area (FWA) for when a flood event is expected to occur. As shown in Figure 2-5, this site is located within a FWA, namely the Wider area at risk from the River Great Ouse at Godmanchester FWA.

Flood alerts may be issued before a flood warning for properties located within a Flood Alert Area (FAA) to provide advance notice of the possibility of flooding. A flood alert may be issued when there is less confidence that flooding will occur in an FWA. As shown in Figure

2-5, this site is located within a FAA, namely the River Great Ouse in Cambridgeshire from Brampton to Earith FAA.

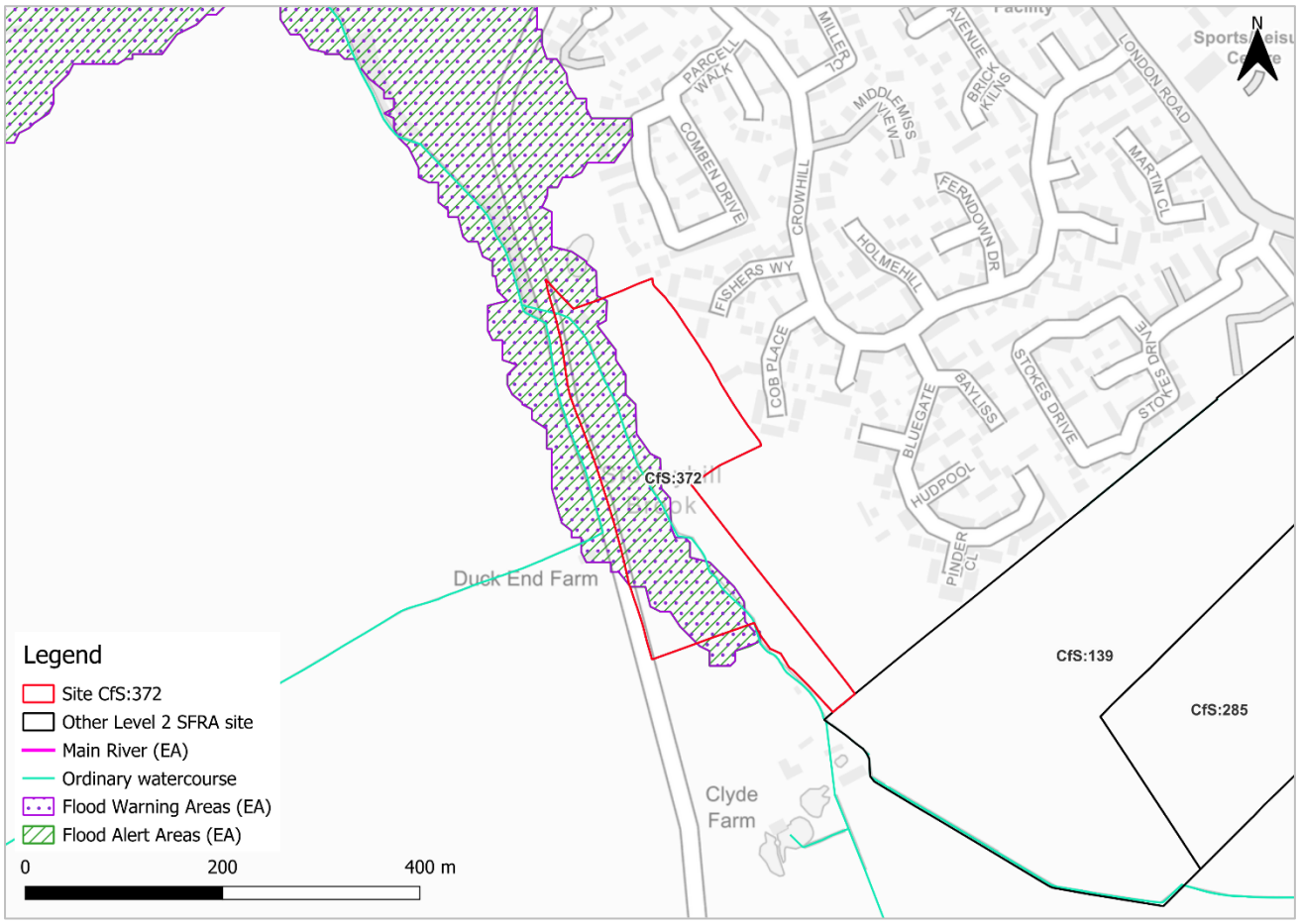

Figure 2-5: EA Flood Warning Areas and Flood Alert Areas

2.5.2 Access and escape routes

Based on available information, safe access and escape routes from the eastern side of the site could likely be achieved during a flood event via Silver Street to the east, travelling south. Safe access and escape from the western side of the may be achievable via Cob Place or Fishers Way, as shown by the orange circles in Figure 2-6. Any crossings over Stoneyhill Brook shall be required to demonstrate that there is no restriction to flow and no increase in flood risk to the site as a result. Flood warnings and alerts should remain in place to ensure site users can be safe and evacuate the site during the 0.1% AEP fluvial event plus climate change.

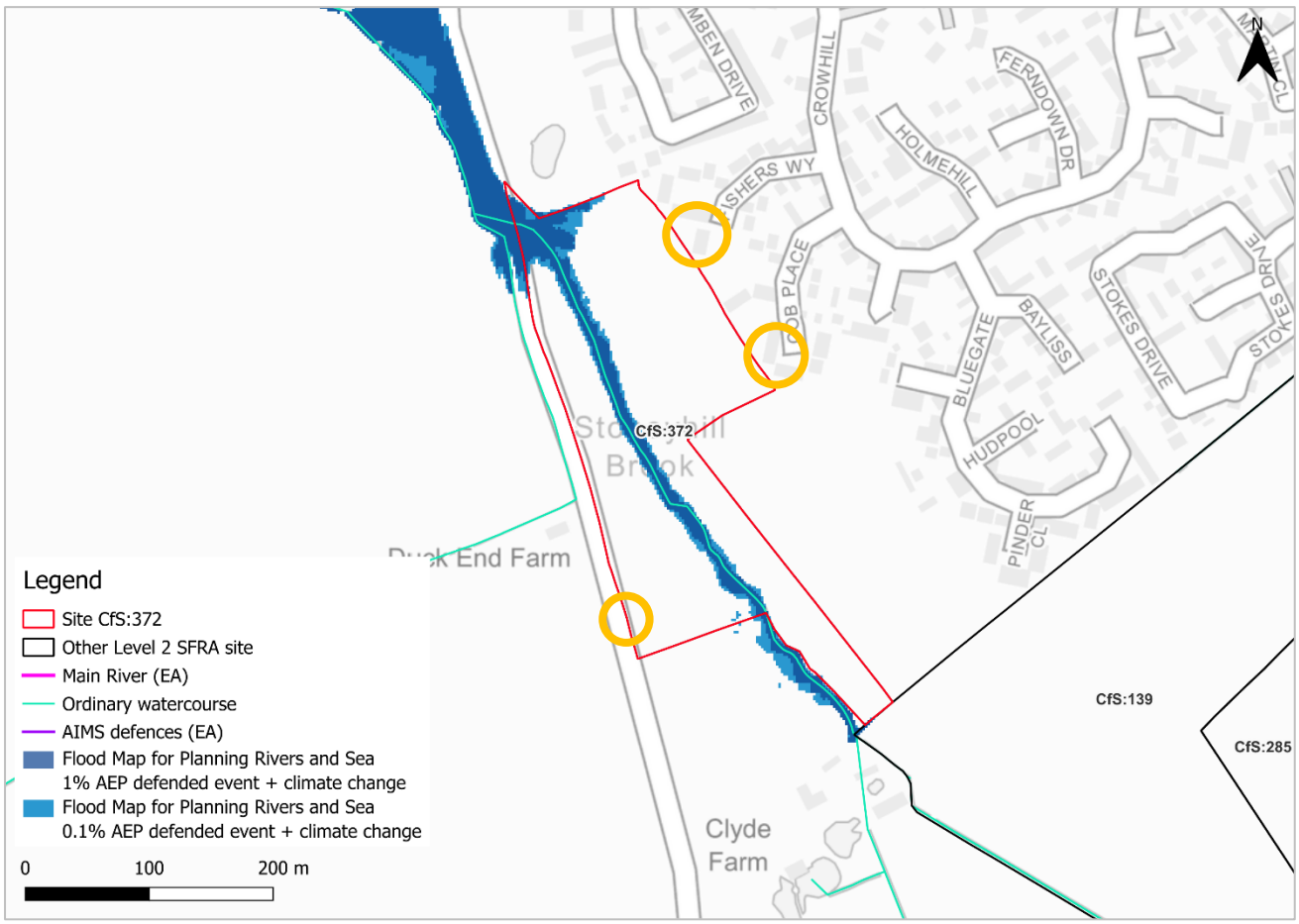

Figure 2-6: Potential access and escape route

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

- Observations:
  - The proposed development of the site would see a change in the risk classification from less vulnerable to more vulnerable, according to the NPPF.
  - The site is partially located within fluvial Flood Zone 3a and therefore must be subject to the exception test.
  - Stoneyhill Brook runs directly through the site. There is no detailed model available for Stoneyhill Brook. The flood zones, including for climate change, are likely to be based on the EA's New National Model.
  - A FWA and FAA are in place at the northwest of the site.
- Defences:
  - There are no defences protecting the site, according to the EA's Spatial Flood Defences dataset.
- Mitigation:
  - The risk area and the watercourse should be included in site design as a blue green corridor, offering multifunctional benefits including ecological, social and amenity value to the site.

- The site-specific FRA should develop a detailed model of Stoneyhill Brook to fully understand the onsite fluvial risk and look to include the channel and risk areas within a blue green corridor.
- Were development of this site to proceed, given the proximity of this site to neighbouring sites CfS:139 CfS:285 and CfS:371, it would be prudent to formulate a strategy to develop these sites in tandem and for consultation between each landowner to take place to ensure a joined-up approach for sustainable development is in place.
- If works are proposed on or near a river or flood defence, a separate permission may be required. The type of permission needed and whether it must be sought from the Environment Agency, Lead Local Flood Authority or Internal Drainage Board will depend on the activity and location proposed. The developer should check if they need permission to do work on a river or flood defence.

- Access and escape:
  - Safe access and escape routes must be available at times of flood and appear to be available from the southwest of the site, via Silver Street which is the only available access route. Safe access and escape should also be provided from the western side of the site and may be achievable via Cob Place and Fishers Way. A FWA and FAA are in place at the northwest of the site. These should provide advanced warning for site users to evacuate ahead of a flood event in the short term.
  - EA flood warnings and alerts should continue to be in place to ensure early evacuation of site users before an extreme flood event occurs.

3 Flood risk from surface water

3.1 Existing risk

The NaFRA2 Risk of Flooding from Surface Water (RoFSW) mapping received a significant update and was published January 2025, including for surface water flood extents and depths. However, at the time of writing, the EA has confirmed that the depth information available is not structured in a way that is suitable for planning purposes. Therefore, this Level 2 SFRA considers the third generation RoFSW depth and hazard mapping in addition to the NaFRA2 extents, as agreed with the EA. Surface water depth and hazard should be modelled at the site-specific FRA stage.

3.1.1 Risk of Flooding from Surface Water - NaFRA2 extents

Based on the EA's national scale RoFSW map, as updated in January 2025, the majority of the site is at very low risk of flooding from surface water. However, there are flow paths along the northern and western site boundaries, as well as some surface water encroachment in the southern area of the site. Unlike the downstream section (including within the site) the upstream section of Stoneyhill Brook has not been removed from the NaFRA2 RoFSW mapping, hence the large flow path shown southeast of the site, associated with the watercourse.

Table 3-1: Existing surface water flood risk based on percentage area at risk using the NaFRA2 RoFSW map

Very low risk (% area)	Low risk (% area)	Medium risk (% area)	High risk (% area)
89	6	3	2

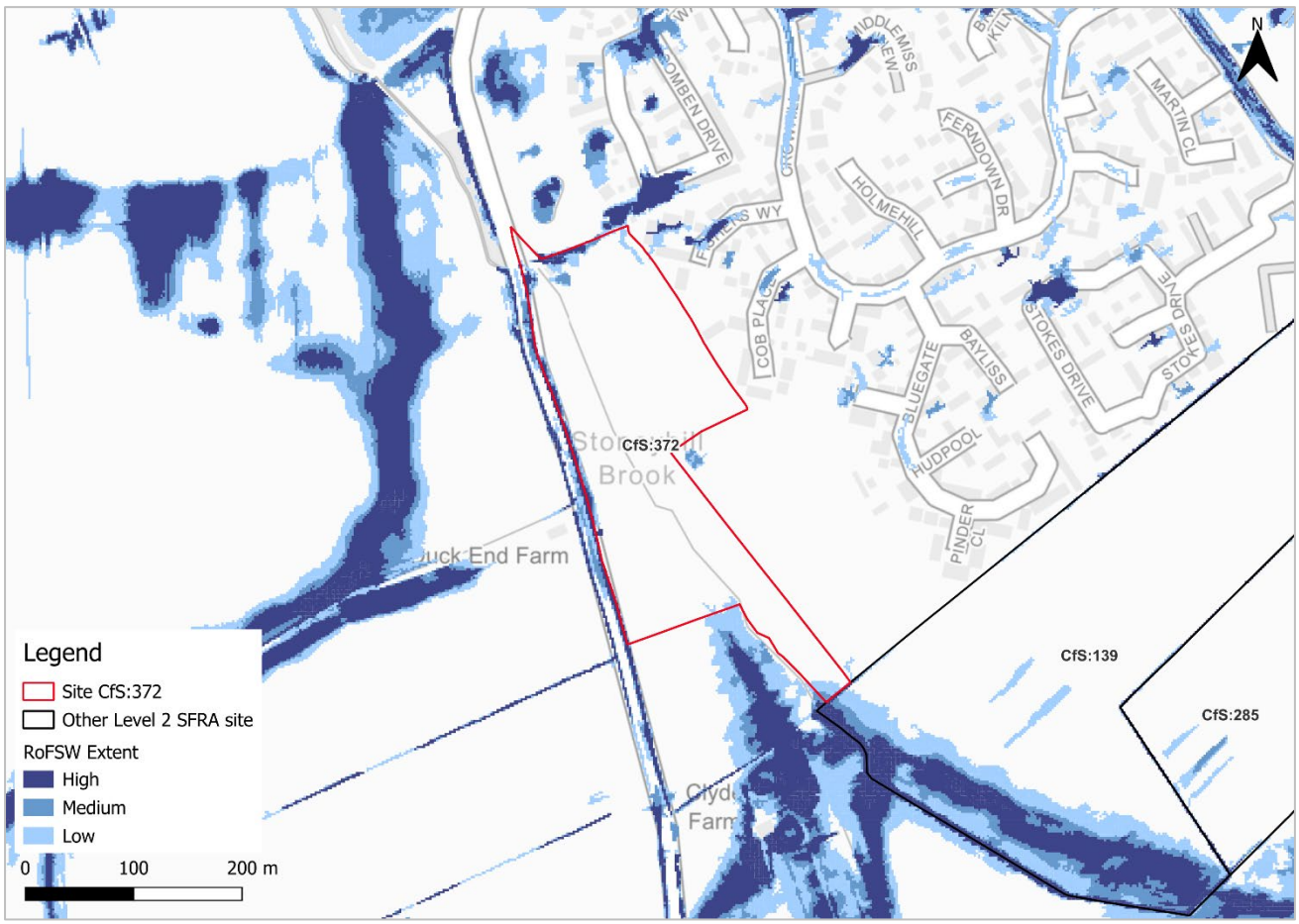

Figure 3-1: Surface water flood extents (NaFRA2 - Risk of Flooding from Surface Water map)

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

The third generation mapping includes Stoneyhill Brook. Based on the EA's national scale third generation RoFSW map, medium flood risk depths outside of the channel of Stoneyhill Brook, largely remain below 0.6m (Figure 3-2) with some areas of ponding at the north of the site having a significant flood hazard rating. Along Silver Street flood hazard is predominantly modelled to be low (Figure 3-3).

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

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

3.2 Impacts from climate change

The NaFRA2 RoFSW mapping now includes one modelled climate change scenario, the 2050s central allowance for the high, medium and low risk events. However, the upper end allowance on peak rainfall for the 2070s should be assessed in SFRAs. Therefore, at the time of writing, the available national surface water climate change mapping is unsuitable for consideration in development planning. This Level 2 SFRA considers the low risk surface water event as a conservative proxy for the medium risk event plus climate change, as agreed with the EA. The impact of climate change on surface water flood risk should be fully accounted for at the site-specific FRA stage.

Based on the information available, surface water flood risk to the site may increase with climate change. The flow paths along the northern and western site boundaries may encroach further into the site though the depths and hazards mapping do not represent the NaFRA2 RoFSW map, therefore the depth and hazard mapping may not be fully

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

representative of potential risk. This reinforces the requirement for detailed assessment of surface water at the FRA stage.

There is flooding modelled to Silver Street though risk is predominantly low (Figure 3-6).

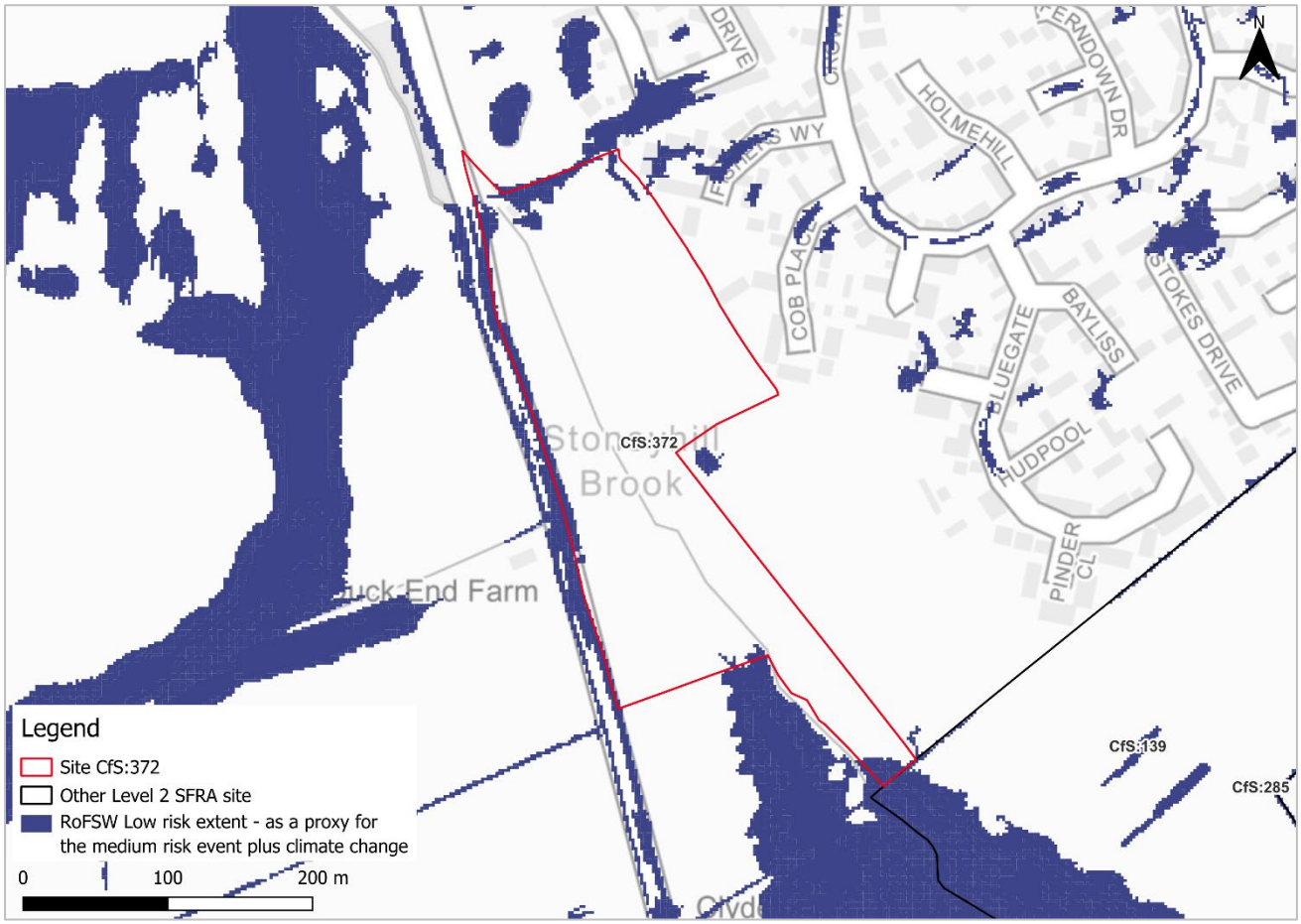

Figure 3-4: Low risk event surface water flood extent, as a proxy for the medium risk event plus climate change (NaFRA2 - Risk of Flooding from Surface Water map)

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

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

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

- Current risk to the site is predominantly very low, with 89% of the site being at very low surface water flood risk. Surface water risk in the high and medium risk events is largely confined to flow paths along the northern and western site boundaries.
- In the low risk surface water event, there are some additional areas of shallow surface water ponding at the south of the site.
- The effects of climate change on surface water have not been modelled for this SFRA, however the low risk surface water event has been used as a proxy for the medium risk event plus climate change. Risk is largely similar to the medium risk event, with a greater extent of ponding at the south of the site.
- Surface water flood depths, hazards, including for the impact of climate change should be considered further through the site-specific FRA and drainage strategy. Any surface water modelling at the FRA stage should consider flood depths and hazards.
- The drainage strategy must ensure there is no increase in surface water flood risk elsewhere as a result of new development. Greenfield rates will apply, and

the developer should follow the National SuDS guidance and any local guidance available from the LLFA.

- Topographic low spots and flow paths should be retained onsite.
- The RoFSW map is not suitable for identifying whether an individual property will flood and is therefore indicative. The RoFSW map is not appropriate to act as the sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies, modelling, or evidence.

4 Cumulative impacts assessment and high risk catchments

4.1 Level 1 cumulative impacts assessment

A cumulative impact assessment was completed through the Huntingdonshire Level 1 SFRA (2024), which aimed to identify catchments sensitive to the cumulative impact of new development. This site is located within one catchment, namely, the Ouse (Roxton to Earith) catchment. This catchment is ranked as a high sensitivity catchment. Planning considerations for sites at high sensitivity to the cumulative impacts of development can be found in Appendix G of the Level 1 SFRA. Cumulative impacts of development should also be considered as part of a site-specific FRA.

5 Groundwater, geology, soils, SuDS suitability

Risk of groundwater emergence is assessed in this SFRA using JBA's 5m Groundwater Emergence Map. This dataset is recommended for use by the EA in the SFRA Good Practice Guide[2]. Figure 5-1 shows the map covering this site and the surrounding areas. Table 5-1 explains the risk classifications.

Figure 5-1: JBA 5m Groundwater Emergence Map

The majority of the site is classified as no risk of groundwater emergence. Any infiltration SuDS should therefore be suitable across the majority of this site.

The northwestern corner of site is shown to have groundwater levels at or very near (within 0.025m of) the ground surface in the 100-year return period flood event. infiltration SuDS are therefore unlikely to be appropriate in this area. The site-specific FRA should further investigate groundwater levels through percolation testing in both wet and dry weather conditions across the northern area of the site.

2 Strategic flood risk assessment good practice guide. ADEPT. December 2021.

Table 5-1: Groundwater Hazard Classification

Groundwater head difference (m)*	Class label
0 to 0.025	Groundwater levels are either at very near (within 0.025m of) the ground surface in the 100-year return period flood event. Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.
0.025 to 0.5	Groundwater levels are between 0.025m and 0.5m below the ground surface in the 100-year return period flood event. Within this zone there is a risk of groundwater flooding to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.
0.5 to 5	Groundwater levels are between 0.5m and 5m below the ground surface in the 100-year return period flood event There is a risk of flooding to subsurface assets, but surface manifestation of groundwater is unlikely.
>5	Groundwater levels are at least 5m below the ground surface in the 100-year return period flood event. Flooding from groundwater is not likely.
N/A	No risk. This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits.
*Difference is defined as ground surface in mAOD minus modelled groundwater table in mAOD.	

Figure 5-2: Soils and geology

6 Residual risk

Although a site may be afforded some protection from defences and / or drainage infrastructure, there is always a residual risk of flooding from asset failure i.e. breaching / overtopping of flood defences, blockages of culverts or drainage assets.

Residual risk at this site comes from the potential blockage of the structure beneath Silver Street.

6.1 Potential blockage / breach

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

Figure 6-1: Potential blockage / breach locations

6.2 Flood risk from reservoirs

The EA's Reservoir Flood Maps (RFM) (2021) show where water may go in the unlikely event of a reservoir or dam failure. Figure 6-2 shows the RFM in a 'dry day' and 'wet day' scenario. A 'dry day' scenario assumes that the water level in the reservoir is the same as

the spillway level or the underside of the roof for a service reservoir and the watercourses upstream and downstream of the reservoir are at a normal level. A 'wet day' scenario assumes a worst-case scenario where a reservoir releases water held on a 'wet day' when local rivers have already overflowed their banks.

The site is potentially at risk from Grafham Water in Huntingdonshire.

The EA's SFRA guidance states that where a proposed development site is shown to be at potential risk from reservoir failure, then an assessment into whether the reservoir design or maintenance schedule needs improving should be carried out. Expert advice may be required from an all-reservoirs panel engineer. The Council should consult Anglian Water Ltd. to ascertain whether the proposed development could affect the reservoir's risk designation, it's design category or how it is operated. The Council, as category 1 responders, can access more detailed information about reservoir risk and reservoir owners using the Resilience Direct system.

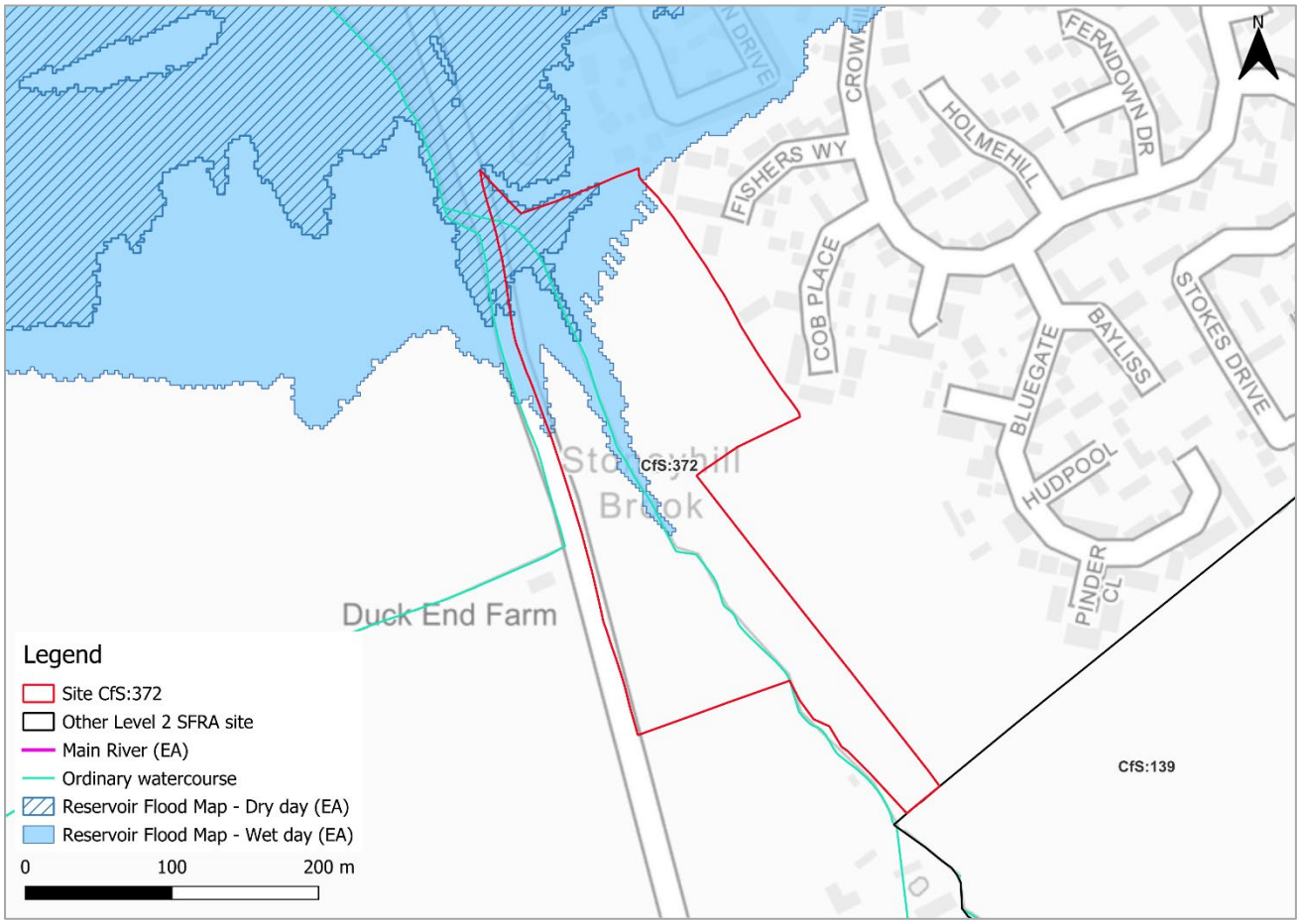

Figure 6-2: EA Reservoir Flood Map

7 Overall site assessment

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

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

7.2 Recommendations summary

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

- Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information detailed in this SFRA on existing and future flood risk from the Stoneyhill Brook is fully ascertained.
- A detailed drainage strategy will be required for any new development, given the large area of the site and the fact it is currently greenfield.
- Stoneyhill Brook and its floodplain should be included within the site design as a blue green corridor. Infilling of drainage ditches should be avoided.
- There is potential residual risk to the site from a blockage of the culvert beneath Silver Street along Stoneyhill Brook which must be investigated.
- Groundwater conditions must be investigated further through the site-specific FRA. The potential use of infiltration SuDS should be investigated.
- Opportunities for NFM features to reduce flood risk to the site and surrounding areas should be explored at the site-specific FRA stage.
- Safe access and escape routes should be defined west of Stoneyhill Brook to ensure safe evacuation of site users during a flood event.
- Any crossings over Stoneyhill Brook shall be required to demonstrate that there is no restriction to flow and no increase in flood risk to the site as a result.

7.3 Site-specific FRA requirements and further work

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

- Full detailed flood modelling of Stoneyhill Brook to assess up to date risk to the site.
- Further modelling to understand the impacts of climate change on fluvial and surface water flood risk to the site.

- Investigation into groundwater conditions and the production of a detailed drainage strategy.
- Further consideration of surface water flood risk, including a drainage strategy. Discharge rates should remain at greenfield rates at a minimum.
- A condition assessment of the culvert adjacent to the western site boundary and investigation into the impact of a potential blockage of the structure.
- The requirement of a permit for developing near an ordinary watercourse should be investigated.
- FRA should be carried out in line with the latest versions of the NPPF; FRCC-PPG; EA online guidance; the HDC Local Plan, and national and local SuDS policy and guidelines.
- Throughout the FRA process, consultation should be carried out with, where applicable, the local planning authority; the lead local flood authority; emergency planning officers; the Environment Agency; Anglian Water; the highways authorities; and the emergency services.

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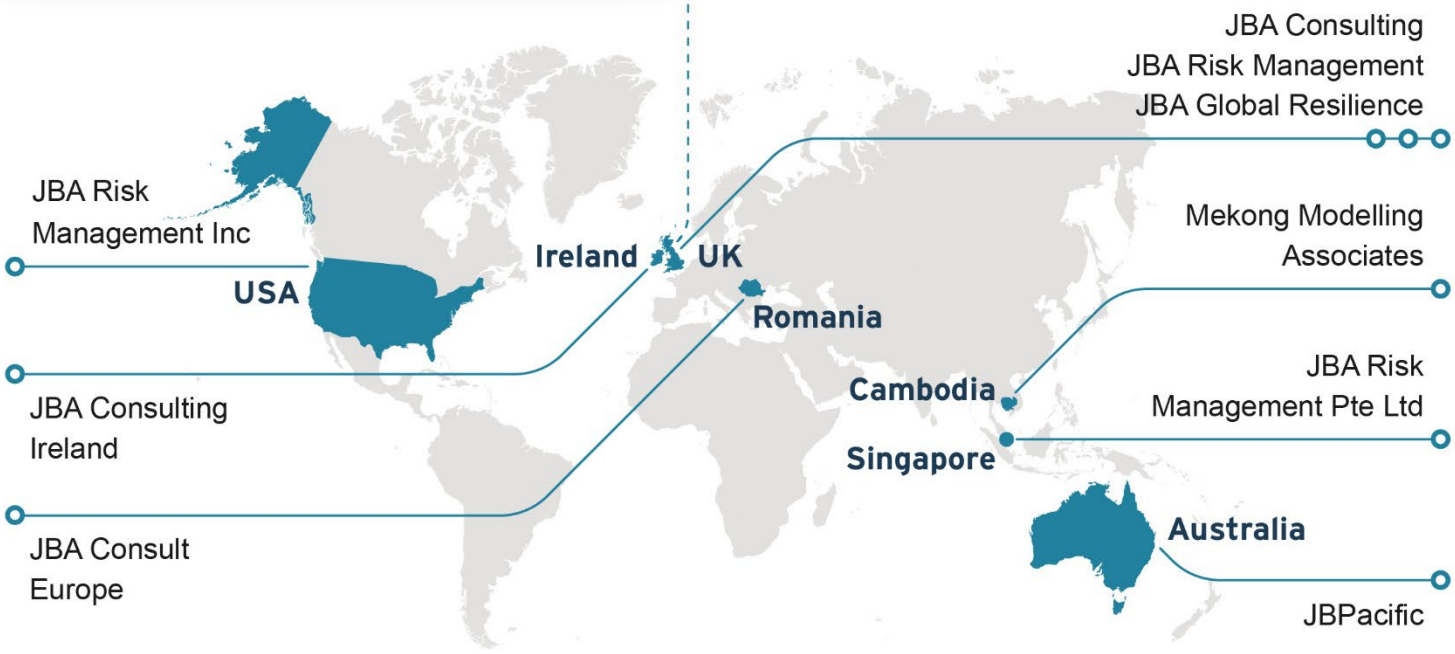

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