

Land North of Mill Lane, Sawston

Site Promotion

Northwest Biotherapeutics Capital Limited

Document History

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The content of this report is based on information available as of 23 September 2026, the validity of the statements made may therefore vary over time as planning guidance / policies and the evidence base change.



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1 Introduction

1.1 Background and Purpose

1.1.1 This Flood Risk Assessment and SuDS review has been prepared by EAS on behalf of Northwest Biotherapeutics Capital Limited to assess the Site's suitability and viability on flood risk and drainage grounds.

1.1.2 This Flood Risk Assessment and SuDS review has been prepared for a Site promotion for 'Land north of Mill Lane, Sawston, hereafter referred to as 'the Site'.

1.1.3 The Greater Cambridge Local Plan will be examined against the 2024 National Planning Policy Framework (NPPF) and the content of this report is based on this advice as well as Planning Practice Guidance (PPG) *Flood Risk and Coastal Change*, updated in September 2025.

1.2 Site Description

1.2.1 The Site is located to the northwest of the large village of Sawston. To the north and south is agricultural land and the east, the main settlement of Sawston. The Site is bound by the A1301 to the west with agricultural land beyond.

1.2.2 The Site is sized at 6.86ha and is currently undeveloped agricultural land. The Site location plan is in Figure 1.

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Figure 1 – Site Location Plan. Site outlined in red. © OpenStreetMap contributors. Contains public sector information licensed under the Open Government Licence v3.0.

1.3 Proposed Development

1.3.1 The proposed development consists of 3.34ha of developable area with around 200 residential dwellings proposed. Within the Site layout are areas of preserved and enhanced wood and play space.

1.3.2 The Masterplan is enclosed in Appendix A

1.4 Planning Context

1.4.1 The Site is unallocated within the adopted Local Plan (South Cambridgeshire District Local Plan, 2018) and is not proposed within the Regulation 19 Proposed Submission Version of the Greater Cambridge Local Plan.

1.4.2 The Site lies outside of, but immediately adjacent to the settlement boundary of Sawston.

1.4.3 The Site lies entirely within the Cambridge Green Belt, however the Green Belt Assessment that supports the Regulation 19 Evidence Base designated the Site as 'provisional grey belt' in accordance with the definition set out in the NPPF.

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2 Policy Context

2.1 National Planning Policy Framework (2024)

2.1.1 It is understood that the Greater Cambridge Local Plan will be examined against the NPPF from 2024, therefore references to the NPPF henceforth to the 2024 version.

2.1.2 Paragraph 181 of the NPPF discusses the use for Site-specific flood-risk assessments and what the assessment should demonstrate:

"When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a Site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

a) within the Site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;

b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;

c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;

d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan."

2.1.3 Paragraph 181 footnote 63 of the NPPF states:

"A Site-specific flood risk assessment should be provided for all developments in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: Sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use."

2.1.4 Paragraph 170 discusses the suitability of development location, particularly with regards to future risks induced by climate change:

"Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere".

2.1.5 Paragraph 182 of the NPPF discusses the application of sustainable drainage systems:

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"Applications which could affect drainage on or around the Site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity. Sustainable drainage systems provided as part of proposals for major development should:

take account of advice from the Lead Local Flood Authority;

have appropriate proposed minimum operational standards; and

have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development."

2.2 National Standards for Sustainable Drainage Systems

2.2.1 This report is based on the National Standards for Sustainable Drainage Systems (SuDS), published by Defra in June 2025 and updated July 2025.

2.2.2 The National Standards for SuDS set out the requirements for the design, construction, operation and maintenance of sustainable drainage systems, and promote an integrated approach to surface water management which mimics natural drainage processes and delivers wider environmental benefits.

2.2.3 Standard 1 establishes the drainage hierarchy and requires that surface water is discharged in the following priority order, where reasonably practicable:

a) collection for non-potable use;
b) infiltration to ground;
c) discharge to a surface water body;
d) discharge to a surface water sewer or other drainage system; and
e) discharge to a combined sewer as a last resort.

2.2.4 Standard 2 requires that rainfall is managed as close to its source as reasonably practicable, with systems designed to intercept, store, reuse and manage runoff within the Site for the majority of rainfall events.

2.2.5 Standard 3 requires that surface water drainage systems are designed to manage rainfall events up to and including the design event, with appropriate allowances for climate change. The purpose of this system is to manage flood risk so that it is not increased on-Site or elsewhere, and that exceedance flows are safely managed.

2.2.6 Standards 4 to 6 require that SuDS are designed to provide multifunctional benefits, including improvements to water quality, amenity and biodiversity, and that they are integrated into the Site layout and landscape.

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2.2.7 Standard 7 requires that SuDS are designed to be maintainable for the lifetime of the development, with appropriate arrangements in place to ensure their long-term operation and effectiveness.

2.3 South Cambridgeshire Local Plan (Current Adopted)

2.3.1 The South Cambridgeshire Local Plan was adopted in 2018. Policy CC/8 Sustainable Drainage Systems states:

Development proposals must incorporate appropriate sustainable surface water drainage systems (SuDS) appropriate to the nature of the Site. Development proposals will be required to demonstrate that:

a. Surface water drainage schemes comply with the Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems and the Cambridgeshire Flood and Water Supplementary Planning Document or successor documents;

b. Opportunities have been taken to integrate sustainable drainage with the development, create amenity, enhance biodiversity, and contribute to a network of green (and blue) open space;

c. Surface water is managed close to its source and on the surface where it practicable to do so;

d. Maximum use has been made of low land take drainage measures, such as rain water recycling, green roofs, permeable surfaces and water butts;

e. Appropriate pollution control measures have been incorporated, including multiple component treatment trains; and

f. Arrangements have been established for the whole life management and maintenance of surface water drainage systems.

2.3.2 Policy CC/9 Managing Flood Risk states:

1. In order to minimise flood risk, development will only be permitted where:

a. The sequential test and exception tests established by the National Planning Policy Framework demonstrate the development is acceptable (where required).

b. Floor levels are 300mm above the 1 in 100 year flood level plus an allowance for climate change where appropriate and where appropriate and practicable also 300mm above adjacent highway levels.

c. Suitable flood protection / mitigation measures are incorporated as appropriate to the level and nature of flood risk, which can be satisfactorily implemented to ensure safe occupation, access and egress. Management and maintenance plans will be required, including arrangements for adoption by any public authority or statutory undertaker

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and any other arrangements to secure the operation of the scheme throughout its lifetime;

d. There would be no increase to flood risk elsewhere, and opportunities to reduce flood risk elsewhere have been explored and taken (where appropriate), including limiting discharge of surface water (post development volume and peak rate) to natural greenfield rates or lower, and

e. The destination of the discharge obeys the following priority order:

i. Firstly, to the ground via infiltration;

ii. Then, to a water body;

iii. Then, to a surface water sewer;

iv. Discharge to a foul water or combined sewer is unacceptable

2. Site specific Flood Risk Assessments (FRAs) appropriate to the scale and nature of the development and the risks involved, and which takes account of future climate change, will be required for the following:

f. Development proposals over 1ha in size;

g. Any other development proposals in flood zones 2 and 3;

h. Any other development proposals in flood zone 1 where evidence, in particular the Strategic Flood Risk Assessment or Surface Water Management Plans, indicates there are records of historic flooding or other sources of flooding, and/or a need for more detailed analysis

3. FRAs will need to meet national standards and local guidance (including recommendations of the South Cambridgeshire and Cambridge City Strategic Flood Risk Assessment (2010) and the Phase 1 and 2 Water Cycle Strategy or successor documents).

2.4 Other Documents

2.4.1 Other documents which have been reviewed and referred to as part of the preparation of this report include;

- Greater Cambridge Integrated Water Management Study- Level 1 Strategic Flood Risk Assessment (July 2021)
- Cambridgeshire Flood and Water Supplementary Planning Document (November 2016)
- Adoption and Maintenance of Sustainable Drainage Systems in South Cambridgeshire (November 2016)

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3 Background Information

3.1 Flood Zones

3.1.1 Flood Zones shows the extent of land at risk of flooding from rivers and the sea, ignoring the benefits of defences, for a range of probability scenarios as defined in Table 1.

Flood Zone	Definition
Flood Zone 1 (Low Probability)	Land having a less than 0.1% annual probability of river or sea flooding (all land outside Zones 2, 3a and 3b).
Flood Zone 2 (Medium Probability)	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding (land shown in light blue on the Flood Map for Planning).
Flood Zone 3a (High Probability)	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea flooding (land shown in dark blue on the Flood Map for Planning).
Flood Zone 3b (Functional Floodplain)	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • Land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • Land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their strategic flood risk assessments areas of functional floodplain and their boundaries accordingly, in agreement with the Environment Agency (not separately distinguished from Zone 3a on the Flood Map).

Table 1 – Flood Zone definitions.

3.1.2 In addition to present-day Flood Zones, planning policy requires consideration of climate change allowances, which reflect projected increases in peak river flows and sea levels over the lifetime of a development. The climate change flood extent is typically derived from hydraulic modelling using the appropriate Environment Agency allowances and represents a future-baseline Flood Zone, commonly extending beyond the present-day Flood Zone 3a.

3.1.3 The Environment Agency (EA) Flood Map for Planning Figure 2 shows the Site is located in Flood Zone 1, however the southern boundary of the Site and the location of the proposed Site access and egress onto Mill Lane is located within the climate change fluvial flood extent.

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Figure 2 – Flood Map for Planning. Site outlined in red. Flood data © Environment Agency. All licensed under the Open Government Licence (OGL). © OpenStreetMap contributors.

3.2 Vulnerability Classification

3.2.1 Development types are categorised according to their flood risk vulnerability, as defined in Annex 3 of the NPPF.

3.2.2 The vulnerability classification of a proposed development determines whether the Sequential Test and/or Exception Test is required and whether it is appropriate within the relevant Flood Zone.

3.2.3 The proposed residential development will be classified as 'more vulnerable'.

3.3 Hydrological Setting

3.3.1 The nearest watercourse to the Site is River Granta (Main River) which is located approximately 270m southwest of the Site. Another branch of the River Granta is located approximately 1.4km north of the Site.

3.3.2 The River Dern is located approximately 440m north-west of the Site.

3.3.3 Sawston Drain 7 is located approximately 100m south of the Site. This flows into Sawston Drain 2, which is located approximately 200m south-west of the Site.

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3.3.4 The Denford Reservoir is located approximately 1.3km north-west of the Site.

3.3.5 The surface water mapping and LiDAR data suggest a ditch along the western boundary however this feature has not been identified on the topographical survey. It is unclear whether the potential ditch falls within the Site boundary. Further exploration and likely onsite investigation would be required at planning stage to determine the presence, if any of a ditch. An easement would apply between any built development and this ditch. As the ditch is located along the existing tree line, it is anticipated that any easement would fall within the Root Protection Areas (RPAs) of these trees. Therefore, the easement is not anticipated to have an impact on built area more than the RPAs. Such detail would be assessed at the planning application stage.

3.3.6 The British Geological Society (BGS) GeoIndex mapping shows the bedrock geology comprises mainly of Holywell Nodular Chalk Formation-Chalk. Small pockets in the north-western corner of the Site and south-western corner of the Site have a bedrock geology of Zig Zag Chalk Formation-Chalk (Figure 3).

3.3.7 There are no superficial deposits recorded.



Figure 3 – Bedrock Geology. Site outlined in red. Licensed under the Open Government Licence (OGL). © OpenStreetMap contributors.

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3.4 Topography

3.4.1 A topographical survey is enclosed in Appendix B. The high point of the Site is in the central eastern area where levels are around 27m Above Ordnance Datum (AOD). The low point of the Site is in the southwestern corner where levels fall to around 20mAOD. In general, Site levels fall to the west.

3.4.2 The EA's LiDAR data has also been assessed and can be viewed in Figure 4.

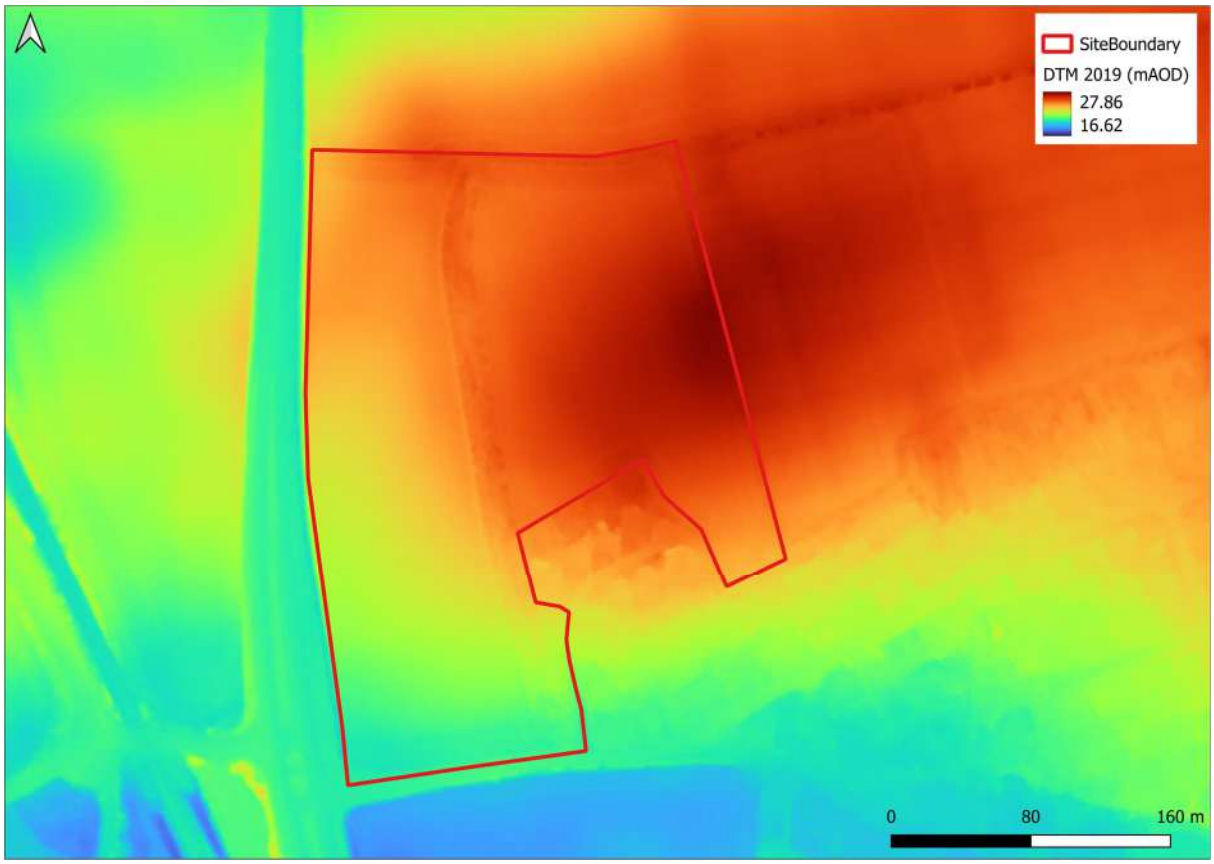


Figure 4 – LiDAR elevation mapping (DTM). Site outlined in red. © Environment Agency. Licensed under the Open Government Licence (OGL). © OpenStreetMap contributors.

3.4.3 The dataset shows that land levels vary across the Site from approximately 27m Above Ordnance Datum (AOD) in the central-eastern area with levels falling across the Site to the west.

3.5 Existing Drainage

3.5.1 The existing Site is undeveloped and therefore there is no formal drainage strategy in place. Assessing Site levels, should the ground become saturated, overland flow would head to the southern western corner of the Site in the low point.

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4 Potential Sources of Flooding

4.1 Fluvial

4.1.1 The Site is shown to be in Flood Zone 1 on the Flood Map for Planning (Figure 3). Flood Zone 1 is defined as having less than a 0.1% annual probability of river flooding.

4.1.2 The southern boundary of the Site and the location of the Site access is located within the climate change fluvial flood extent. The EA has confirmed that the climate change flood extent is sourced from the New National Model. Modelled data from the New Nation Model is considered not appropriate for Site specific analysis and therefore not provided by the EA. Therefore, local flood model data has been used to assess the risk of flooding with climate change as set out below.

4.1.3 The Site is located outside of the EA's historic flood extents for the 1947, 1968 and 2001 flood events based on the Historic Flood Map and Recorded Flood Events datasets (Figure 5). The only event to have reached the Site is the 1947 flood which do not represent current day risk due to changes within the river catchment (e.g. improvement to defences). The later flood events only affected Mill Lane to the south of the Site based on mapped extents.



Figure 5– Historic Flood outlines map. Site outlined in red. © Environment Agency. All licensed under the Open Government Licence (OGL). © OpenStreetMap contributors.

4.1.4 The EA were consulted for this Site to obtain modelled flood level data and has provided the results of the following modelling studies:

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- Cam Urban Flood Modelling - 2023
- Cam Rural Model - 2014

4.1.5 The received EA data is enclosed in Appendix C

Cam Urban Flood Modelling 2023

4.1.6 The modelled flood extents from the Cam Urban Flood Modelling 2023 in Appendix C do not encroach close to the Site for all events up to and including 0.1% AEP + 45% climate change. The Site remains unaffected when the defences are removed for all modelled scenarios (i.e. to the 0.1% AEP event).

Cam Rural Model 2014

4.1.7 The Site is shown to remain EA's mapped maximum flood extents from the Cam Rural Model (2014) for all events up to the 0.1% AEP under present day conditions (Figure 6). This mapping assumes no defences exist and is therefore precautionary.

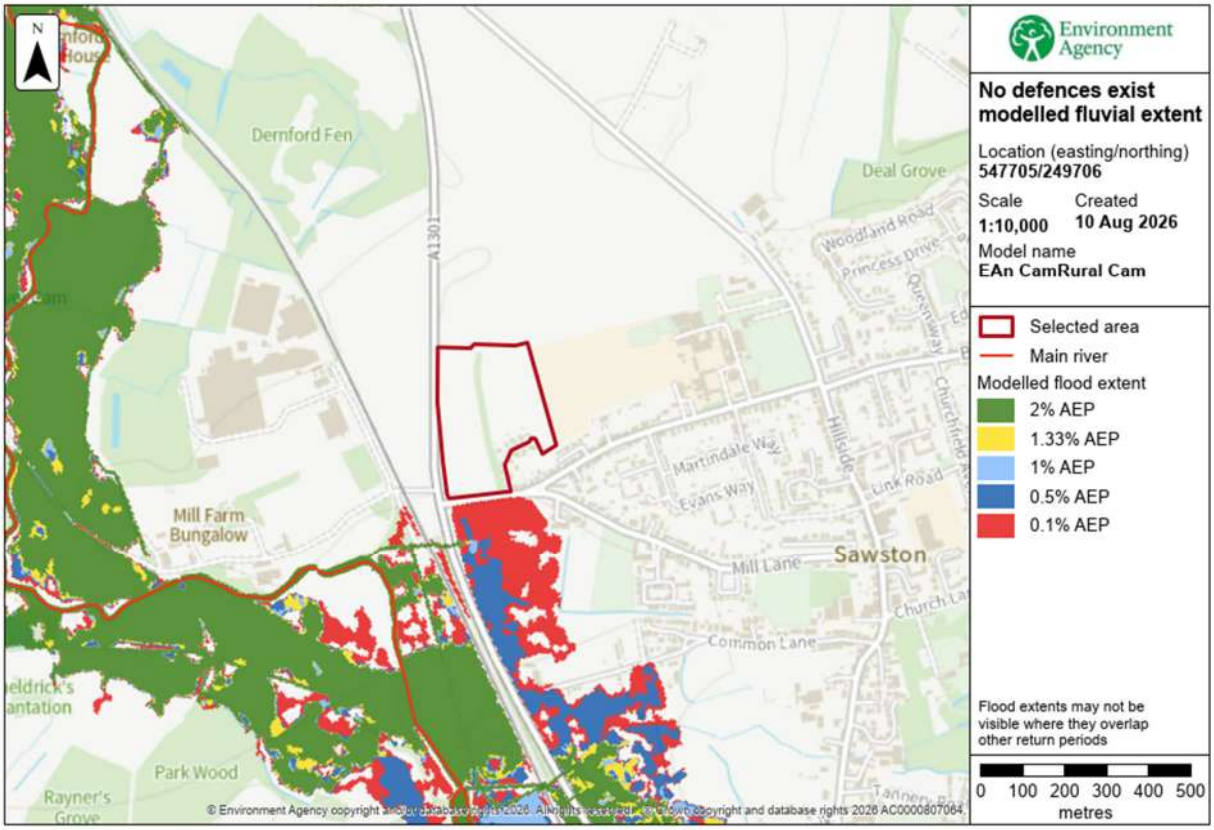


Figure 6 - Cam Rural Model maximum modelled flood extents – present day – no defences exist.

4.1.8 When considering the impacts of climate change over the lifetime of the development (100 years), the Site is located within the 'Cam and Ely Ouse Management Catchment' which has a 2080s central climate change allowance of 9%.

4.1.9 The flood data provided by the EA only includes a scenario with a 20% allowance for climate change and therefore are considered to provide a conservative picture of the risk of flooding

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when considering the impacts of climate change. The maximum modelled flood extents for the 1% AEP event + 20% allowance for climate change show the Site to remain unaffected (Figure 7). The access via Mill Lane is also shown to remain unaffected so safe access/egress can be achieved. This scenario assumes no defences exist and is therefore precautionary.

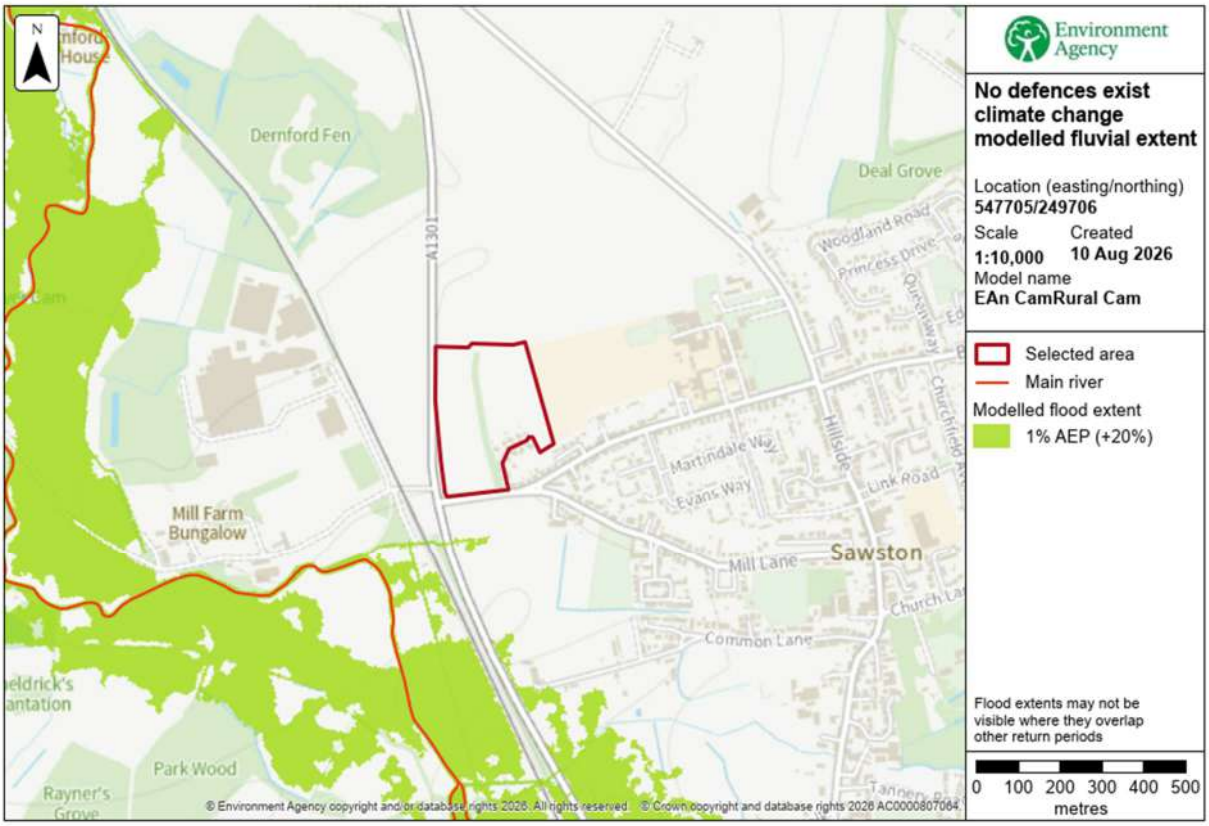


Figure 7 - Cam Rural Model maximum modelled flood extents – including 20% allowance for climate change – no defences exist.

4.1.10 In conclusion, the risk of flooding from rivers is considered to be low.

4.2 Surface Water

4.2.1 Surface water flooding occurs when intense rainfall generates runoff that exceeds the capacity of local drainage systems or is unable to infiltrate the ground, resulting in temporary ponding and flow towards low-lying areas. This type of flooding is also referred to as pluvial flooding.

4.2.2 The Flood Map for Planning Surface Water Spatial Planning datasets are an assessment of where surface water flooding may occur (Figure 8). The design event for surface water is the 1% AEP event including an allowance for climate change.

4.2.3 To assess the impacts of climate change over the lifetime of the development, the mapping includes the 'Upper End' allowance for climate change for the 2070s epoch (2061-2125) in accordance with the EA's guidance Flood risk assessments: climate change allowances.

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4.2.4 The mapping indicates that the Site is mostly unaffected by surface water flooding excluding two minor areas of pooling in locations identified to be the low points of the Site.

4.2.5 There is an isolated are of surface water flooding with depths up to 300mm in the northern central area of the Site adjacent to the existing wooded corridor. There is another isolated area of surface water flooding in the south western corner of the Site where depths also reach up to 300mm.

4.2.6 In the proposed scenario, the introduction of a SuDS system as well as the levelling of the Site is likely to remove the low points and capture runoff at source therefore likely removing the surface water flooding as currently shown.

4.2.7 The Site access also remains outside the modelled surface water flood extent.

4.2.8 In summary, the Site is considered to be at low risk of pluvial flooding.

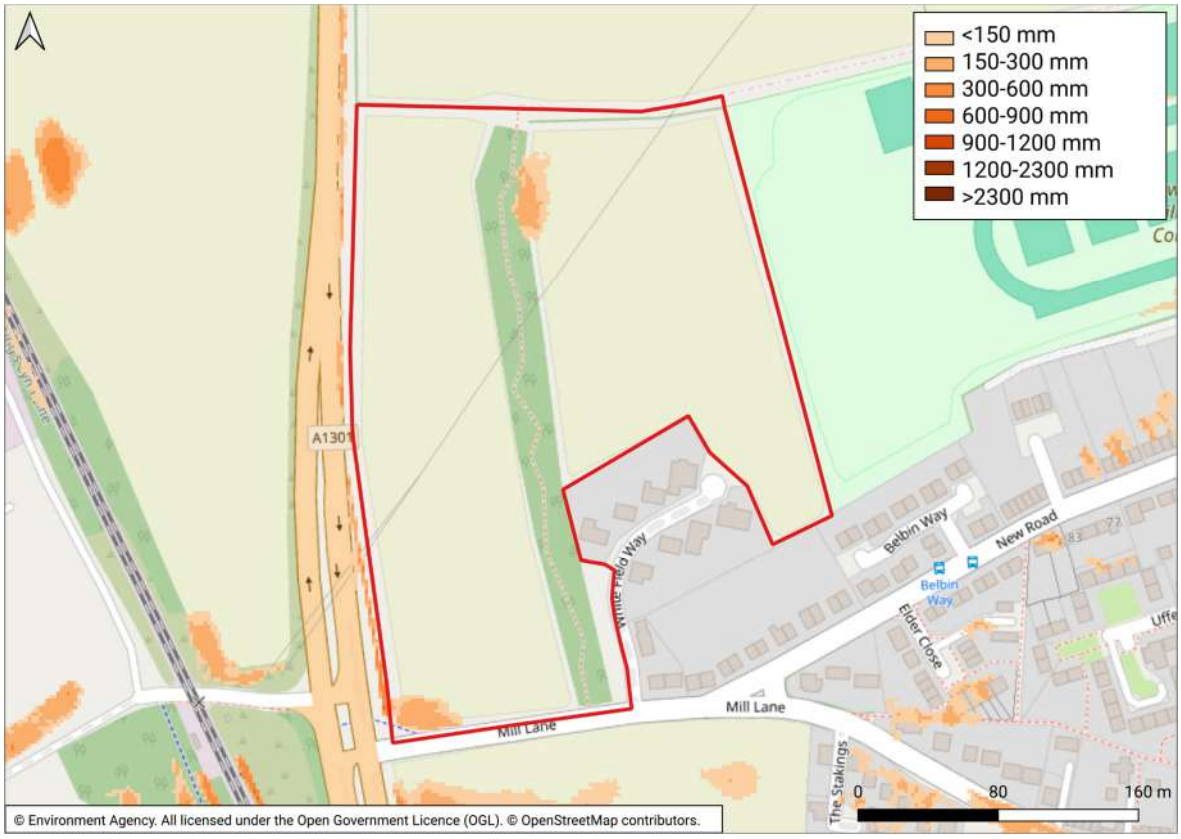


Figure 8 – Depth of flooding for 1 in 100 year event including an allowance for climate change from Flood Map for Planning Surface Water Spatial Planning. Site outlined in red. © Environment Agency. All licensed under the Open Government Licence (OGL). © OpenStreetMap contributors.

4.3 Artificial

4.3.1 Artificial sources of flooding occur when water escapes from man-made structures such as reservoirs, canals, or other engineered watercourses. This can result from extreme inflows,

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structural failure, or overtopping, leading to flooding of downstream areas, including properties, infrastructure, and low-lying land.

4.3.2 The EA's Risk of Flooding from Reservoirs mapping shows the Site is not located in an area at risk from the failure of a large, raised reservoir.

4.4 Groundwater

4.4.1 Groundwater flooding occurs when the water table rises to the surface. It can result from water moving through permeable rock or through fractures and other discontinuities, often following prolonged or heavy rainfall that exceeds the natural drainage capacity of the ground. This can cause water to appear in low-lying areas, wells, or building basements.

4.4.2 The nearest borehole record is located approximately 130m west of the Site (BGS Reference: TL44NE255) and records a water strike at 1.10m below ground level. The trial pit logs comprise of silty sand, chalk and gravel to a depth of 3m below ground level.

4.4.3 Another nearby borehole record located approximately 140m east of the Site (BGS Reference: TL44NE145) records a water strike at approximately 7m below ground level. No trial pit log is available.

4.4.4 Appendix D10 Map 24 of the SFRA notes that the majority of Site is located in an area with 'potential for groundwater flooding of property situated below ground level'. In the far south-western corner of the Site, it is noted that there is 'potential for groundwater flooding to occur at surface'. This is likely attributable to this area being the low point.

4.4.5 No basement levels are proposed therefore minimising risk to property.

4.4.6 At a later stage, Site specific ground investigations are required to confirm the onSite geology and the presence, if any, of groundwater. This would inform both mitigation measures and the surface water drainage strategy.

4.4.7 The Site is located above a Principal Aquifer with 'High' groundwater vulnerability. The SuDS design will therefore ensure robust treatment stages in line with CIRIA Guidance and the National SuDS Guidance.

4.5 Sewer

4.5.1 Sewer flooding occurs when the capacity of the sewer network is exceeded or when flows are obstructed within the system. This can arise from hydraulic overload, where rainfall or inflow volumes surpass the design capacity of the sewer during heavy storm events, causing water to surcharge and potentially emerge at the surface through manholes, gullies or internal drainage systems. Sewer flooding can also occur due to blockages within the network, such as accumulations of debris, or structural defects that restrict flow and cause wastewater to back up.

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4.5.2 Anglian Water sewer mapping has been obtained and is enclosed in Appendix D. A 6-inch foul sewer is located across the southern boundary of the Site.

4.5.3 This sewer is located in the low point of the Site therefore should a sewer flood event occur, flows are unlikely to enter the Site and the preferential route will be onto Mill Lane.

4.5.4 At a later stage, a build over agreement will be applied for to facilitate the proposed Site access.

4.5.5 In summary, the Site is considered to be at low risk of sewer flooding.

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5 Flood Mitigation Measures

5.1 Assessment Overview

5.1.1 Following the assessment of flood risk from all sources, the mitigation measures set out in Table 2 are recommended to be incorporated into the scheme.

Mitigation Measures	Required?	Comments
Sequential Approach	Y	The Site has been shown to be at low risk of flooding and therefore the Sequential Approach is applied in that development will be located in the lowest risk areas.
Flood Warning and Evacuation	N	Safe dry access/egress is possible to/from the development.
Management of Surface Water Runoff	Y	The proposals for development will be required to incorporate Sustainable Drainage Systems into the scheme in line with the National standards for sustainable drainage systems (SuDS). This is discussed in Section 6.
Permits and Consents	Y	A build over agreement with Anglian Water will be required at a later stage Subject to the status of the ditch along the watercourse, land drainage consent or a suitably applied easement from this may be required.

Table 2 – Flood Mitigation Measures.

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6 Sequential and Exception Test

6.1 Sequential Test

6.1.1 The Sequential Test will be applied by the Local Planning Authority as part of the Site allocation process.

6.2 Exception Test

6.2.1 The entire Site is located in Flood Zone 1 and therefore based on Table 2 of the PPG an Exception Test would not be required.

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Surface Water Drainage Strategy

6.3 National and Local SuDS Standards

6.3.1 The SuDS Drainage Strategy for the proposed development Site shall be designed in accordance with the Defra's National Standards for Sustainable Drainage Systems (SuDS) and Cambridgeshire's Flood and Water Supplementary Planning Document (November 2016).

6.4 Surface Water Runoff Destinations

6.4.1 A 'SuDS approach' shall be adopted to manage surface water runoff from the proposed development Site and identify the most appropriate discharge destination. In accordance with Standard 1 of the National Standards for SuDS an assessment of feasible runoff destinations has been undertaken and is summarised in Table 3.

Runoff Destination Hierarchy	Description	Achievable?	Comments
Priority 1	Collected for non-potable use	☑	Rainwater harvesting could be incorporated into property design at a detailed stage.
Priority 2	Infiltrated to ground	☑	The local geology of chalk suggest infiltration will be a viable. At this stage a generic rate for chalk has been applied and at a detailed stage, Site specific ground investigation will need to be undertaken to confirm the suitability of infiltration.
Priority 3	Discharged to an above ground surface water body	☒	Infiltration has been proposed at this stage thus, all surface water runoff shall be disposed via Priority 1 and Priority 2.
Priority 4	Discharged to a surface water sewer, or another piped surface water drainage system	☒	As infiltration is viable all surface water runoff shall be disposed via Priority 1 and Priority 2.
Priority 5	Discharged to a combined sewer	☒	As infiltration is viable all surface water runoff shall be disposed via Priority 1 and Priority 2.

Table 3 – Surface Water Disposal Hierarchy.

6.4.2 As discussed above, rainwater harvesting is proposed where possible, however not all surface water runoff from the proposed development Site can be stored and collected for re-use, as such disposal via priorities 2 to 5 shall be considered.

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6.4.3 Infiltration testing to BRE 365 Standards will need to be taken at a later stage. This geotechnical report should also confirm the presence, if any, of groundwater. Should groundwater be present, monitoring may be required to inform the detailed design. A geotechnical engineer should, as part of the onSite investigation, provide the required easements from development associated with any identified soluble rock risk or dissolution features.

6.4.4 Should infiltration not be viable, an alternative outfall in line with the hierarchy will need to be explored.

6.5 Design Parameters

6.5.1 The following design parameters, contained in Table 4 below, have been used to undertake the hydraulic calculations to size and measure attenuation volume requirements for proposed SuDS components accordingly.

Parameter	Comments
Rainfall Data	As per para. 3.34 of the National Standards for SuDS, FEH 22 shall be used.
Climate Change Allowance	The 2070s 'Upper End' Climate Change allowance is 40% and shall be applied to the hydraulic drainage network design.
C_v (Coefficient of volumetric run-off)	The CV Value for Winter and Summer Storms has been set to 1.0 to represent 100% of runoff from impermeable areas entering the proposed drainage system. A robust approach.
Factor of Safety	CIRIA SuDS Manual Table 25.2 sets out recommended Factor of Safety for use of infiltration systems. For drained areas over 1000m^2 where minor damage to external areas or minor inconvenience the consequence of failure could be, a Factor of Safety (F) of 5 is recommended.
Half-Drain-Times	Either 50% capacity available 24hrs after 1:100yr event OR capacity to store subsequent 1:10yr event after 1:100yr event.
Surcharged Outfall	N/A
Urban Creep	N/A
SuDS Proforma	☒ At present, the Lead Local Flood Authority are not believed to have a SuDS Profroma requirement

Table 4 – SuDS design Parameters.

6.6 SuDS Selection

6.6.1 The CIRIA SuDS Manual presents a framework for selecting and designing SuDS so that they deliver benefits across the four key pillars (often referred to as the four design objectives or pillars of SuDS):

- **Water Quantity** – Managing runoff rates and volumes to reduce flood risk, mimic natural drainage, and protect downstream receptors.

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- **Water Quality** – Treating runoff to remove pollutants before discharge to groundwater or receiving watercourses or sewer network.
- **Amenity** – Creating attractive, usable spaces that provide social, recreational, and educational value.
- **Biodiversity** – Supporting habitats and ecological networks through the use of vegetated and natural drainage features.

6.6.2 Table 5 presents the SuDS components considered to be viable for managing surface water runoff from the proposed development Site.

SuDS Feature	Viable SuDS Components
Water Quantity	Rainwater harvesting, Green roofs, Raingardens and raingarden planters (Bioretention systems), Tree pits, Infiltration systems (soakaways, infiltration basins and pervious pavement that uses infiltration).
Water Quality	Green roofs, Raingardens and raingarden planters (Bioretention systems), Pervious pavements, infiltration basins, Ponds and wetlands, Swales, Filter strips and Filter drains.
Amenity	Green roofs, Raingardens and raingarden planters (Bioretention systems), infiltration basins, Swales, Tree pits.
Biodiversity	Green roofs, Raingardens and raingarden planters (Bioretention systems), infiltration basins (where suitable planting is proposed), Swales, Tree pits.

Table 5 – SuDS Selection.

6.6.3 The proposed SuDS components therefore provide benefits across the four key SuDS pillars.

6.6.4 At this stage, infiltration basins have been modelled however the SuDS features detailed in Table 5 should be incorporated into the detailed SuDS design as a scheme is developed for a planning application. Many SuDS features that manage runoff at source should be utilised with features evenly distributed across the Site and incorporated into landscaping.

6.7 Greenfield Runoff Rates and Discharge Volume

6.7.1 Greenfield runoff rates were estimated using the ReFH2 (Revitalised Flood Hydrograph 2) method using Causeway Flow software based on a proposed impermeable area of 3.34 ha (excl. urban creep). The GRR results are included in Appendix E and are summarised in Table 6 and include the greenfield runoff volume for a 1 in 100yr 360min duration storm event:

Storm Event	GRR per ha	GRR scaled to proposed development impermeable area
1 in 1yr Greenfield Runoff Rate	0.5 L/s/ha	1.67L/s
1 in 2yr Greenfield Runoff Rate	0.6 L/s/ha	2.00L/s
1 in 30yr Greenfield Runoff Rate	2.1 L/s/ha	7.01L/s
1 in 100yr Greenfield Runoff Rate	2.9 L/s/ha	9.68L/s

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Storm Event	GRR per ha	GRR scaled to proposed development impermeable area
Discharge Volume (1 in 100yr 360min Storm)	36m³/ha	120.24m³

Table 6 – Greenfield Runoff Rates.

6.8 Proposed Peak Runoff Rate

6.8.1 The greenfield runoff rates are very low and reflect the local geology of chalk. As it is proposed to infiltrate, no discharge from the Site is proposed.

6.8.2 In the absence of infiltration test results, the lowest acceptable infiltration rate for chalk of 1 x 10^{-6}m/s has been applied to initial infiltration basin calculations.

6.9 SuDS Hydraulic Modelling

6.9.1 The proposed SuDS Layout is included in Appendix F and the supporting hydraulic calculations, undertaken in Causeway Flow, are contained in Appendix G.

6.9.2 At present, two infiltration basins have been sized to manage the proposed impermeable Site area of 3.34ha. As the Site plan develops, additional upstream SuDS features will be incorporated into SuDS design such as roadside swales, raingardens or even smaller infiltration basins evenly distributed across the Site.

6.9.3 Interception of first 5mm of rainfall will be achieved via the use of pervious pavements and raingarden planters.

6.9.4 As outlined in Table 5 above and shown on the SuDS layout in Appendix F, a number of SuDS components will be developed into the detailed Site plan.

6.9.5 For the purposes of this report, the infiltration basin has been modelled with 1:3 side slopes to a depth of 1.5m. A 300mm freeboard has been achieved, with the maximum water level in the 100yr+40%CC storm event with a consecutive 10yr storm calculated as 1.17m. The indicative two basins cover a total area of 3743.8m² (measured to the top of bank and not including the 3.5m maintenance track) and provides up to 1987m³ of storage volume.

6.10 Exceedance Event

6.10.1 The proposed surface water drainage strategy has been designed to accommodate the 1 in 100 year rainfall event, including a 40% allowance for climate change, whilst ensuring that all SuDS components achieve half-emptying within 1440 minutes. In the unlikely event that rainfall exceeds the design standard, exceedance flows would be conveyed in a south westerly direction following the natural topography of the Site.

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6.11 Water Quality

6.11.1 In accordance with the National Standards for SuDS Standard 4, the proposed SuDS strategy must demonstrate how it meets the water quality requirements. This will be completed through the Simple Index Approach as set out by Tables 26.2 and 26.3 of the CIRIA SuDS Manual C753.

6.11.2 The proposed Site comprises residential roofs and individual property driveways and low traffic road. In accordance with CIRIA table 26.2, the land use hazard rating is low. The pollution indices are set out in Table 7 below:

Land Use	Hazard Level	Pollution Indices		
		Suspended Solids	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05
Individual property driveways and low traffic roads and non residential parking with infrequent use such as schools and offices (i.e <300 traffic movements/day).	Low	0.5	0.4	0.4
Pollution Mitigation Required		0.5	0.4	0.4

Table 7 – Land Use Pollution Indices Assessment.

6.11.3 Permeable paving alongside the use of raingardens will manage the first 5mm and SuDS features will be incorporated across the Site to manage runoff as close to source as possible. Suitable catchpits and filters will be located upstream of the infiltration basins to prevent sedimentation as detailed in Table 26.4 of the CIRIA SuDS Manual C753. Between the base of the infiltration device and the anticipated maximum groundwater level, there should be a minimum of 1m. Site specific ground investigation to occur at a detailed stage will inform the depths of the chosen infiltration devices.

6.11.4 In line with table 26.4 of the CIRIA SuDS Manual C753, the pollution mitigation indices are calculated as shown in Table *8* below. This is an example and not an exhaustive list of the treatment stages likely to present in the detailed SuDS design and the scheme will meet the requirements for water quality as set out in the CIRIA SuDS Manual.

SuDS component	Pollution Mitigation Indices		
	Suspended Solids	Metals	Hydrocarbons
Constructed permeable pavement (where a suitable filtration layer is included that provides treatment, and including a geo-textile at the base separating the foundation from the subgrade) underlain by a	0.7	0.6	0.7

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SuDS component	Pollution Mitigation Indices		
soil with good contaminant attenuation potential of at least 300mm in depth			
Bioretention underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.4*	0.4*	0.4*

*Table 8 – Land Use Pollution Mitigation Assessment. *Note that components downstream of the first water quality device have their indices halved*

6.12 SuDS Maintenance and Management Plan

6.12.1 All SuDS components and drainage features located within private residential curtilage shall be maintained by the individual property owner. All other SuDS components and drainage features serving communal areas and estate roads are likely to be maintained by a management company. It is anticipated that a private management company will be appointed to undertake the required inspection and maintenance activities, with the associated costs recovered from residents through a service charge arrangement, as appropriate.

6.12.2 The future management of the SuDS should follow local policy guidance found in 'Adoption and Maintenance of Sustainable Drainage Systems in South Cambridgeshire'. Anglian Water do offer adoption and early consultation is required should this be something that wishes to be pursued.

6.12.3 Regular inspections and maintenance should be carried out for each of these elements, particularly after periods of heavy rainfall. Maintenance tasks and frequencies for the SuDS components proposed are detailed in the CIRIA SUDS Manual (C753) and have been summarised in Appendix H.

6.12.4 It is recommended that during the first 12 months of operation, all SuDS and drainage features are visually inspected on a monthly basis to determine any seasonal patterns. This includes all SuDS features, inspection chambers, inlets and outlets. This will determine whether or not the recommended service intervals set out by CIRIA in Appendix H will be sufficient for maintenance beyond the first year.

6.12.5 After the first 12 months, the maintenance schedule should be designed to at least meet the requirements set out by CIRIA based on the outcome of the monitoring.

6.12.6 Should the Site experience an exceedance event, the appointed responsible party should ensure that all drainage and SuDS components are in a fully functional working condition.

6.12.7 Should the maintenance schedule not be followed or there is a failure to respond to a blockage or a pollution event, the drainage system and SuDS features could fail. This could increase the risk of flooding within the Site and elsewhere and could cause a pollution incident where pollution enters watercourses or groundwater.

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6.12.8 Manholes, Sewers and Inspection Chambers: All inspection chambers and manholes, including the orifice plate/vortex flow control device chambers, should be inspected on a bi-annual basis with further visual checks carried out throughout the year, such as in November after the heaviest leaf-fall has occurred. Should a blockage occur at any time, it is advised to seek professional help to jet the drainage system to clean and clear the system.

6.12.9 Gutters and Downpipes: It is good practice to ensure that these are occasionally inspected to ensure they are in good order and free of leaves and debris. Once every 6 months should be sufficient.

TRANSPORT PLANNING | HIGHWAY DESIGN | FLOOD RISK DRAINAGE | ENERGY | SUSTAINABILITY | AIR QUALITY

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7 Conclusions

7.1 Flood Risk Summary and Mitigation Measures

7.1.1 The Site is located wholly in Flood Zone 1 with the southernmost boundary and access and egress route onto Mill Lane located within the Climate Change Flood Zone extent. No built development is proposed within this area, thus sequentially locating development to the most appropriate areas within the Site. In line with the NPPF 2026, a Sequential Test is required at planning stage.

7.1.2 An assessment of local EA modelled fluvial data proved the Site, as well and Mill Lane, is located outside the 0.1%AEP and 1%AEP+20%climate change modelled flood extents.

7.1.3 The Site is largely unaffected by surface water flooding with isolated and minor area of flooding in the identified low points of the Site. The introduction of a SuDS as well as the likely removal of low points during the development of the Site, concludes these areas of surface water flooding are likely to be eliminated and it can be concluded the Site is at low risk of surface water flooding.

7.1.4 Site specific ground investigations will be required at a later stage to assess the presence, if any of groundwater. The relevant Flood Risk Assessment at Planning stage will need to address these findings with suitable mitigation measures incorporated into the Site plans if required.

7.1.5 From a flood risk perspective, the Site is considered appropriate and suitable for development and is suitable for allocation in the Greater Cambridge Local Plan.

7.2 SuDS Strategy Summary

7.2.1 An infiltration strategy is proposed and at present. Two infiltration basins have been sized based on the proposed impermeable area of the current masterplan in line with design guidance. At a detailed stage, a suite of SuDS features will be incorporated into the landscaping design such as permeable paving, raingardens and swales.

7.3 Conclusion

7.3.1 The Site is considered suitable for allocation on flood risk and drainage grounds.

TRANSPORT PLANNING | HIGHWAY DESIGN | FLOOD RISK DRAINAGE | ENERGY | SUSTAINABILITY | AIR QUALITY

EAS, EAS Consulting Engineers and The SuDS Design Centre are trading names of EAS Transport Planning Ltd registered 5751442

Appendices

TRANSPORT PLANNING | HIGHWAY DESIGN | FLOOD RISK DRAINAGE | ENERGY | SUSTAINABILITY | AIR QUALITY

EAS, EAS Consulting Engineers and The SuDS Design Centre are trading names of EAS Transport Planning Ltd registered 5751442

Appendix A - Proposed Site Plans

EAS, SuDS Design Centre and Two Eighty are trading names of EAS Transport Planning Ltd registered in England and Wales, No. 5751442



KEY

- Site Boundary (6.86ha)
- Primary Road
- Secondary Road / Private Drive
- Proposed Site Access
- Proposed Emergency Access
- Proposed Internal Footpaths
- Existing Bus Stop
- Play Space
- Attenuation Basin
- Developable Area & Frontages (3.34ha)
- Preserved & Enhanced Wood
- Existing Public Footpath
- Utilities Corridor
- Tree Protection Order
- Greenway
- Grade II Listed Building

PLANNING ISSUE, NOT FOR CONSTRUCTION

Rev.	Date.	Details.

GENERAL
Do not scale from this drawing.
All dimensions to be checked on site.
This plan is to be read with all accompanying documentation.
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Northwest Biotherapeutics

Northwest Biotherapeutics Capital Limited

BIDWELLS

Masterplanning, Landscape & Assessment
Bidwell House, Trumpington Road, Cambridge, CB2 9LD

LAND AT MILL LANE, SAWSTON

FRAMEWORK MASTERPLAN

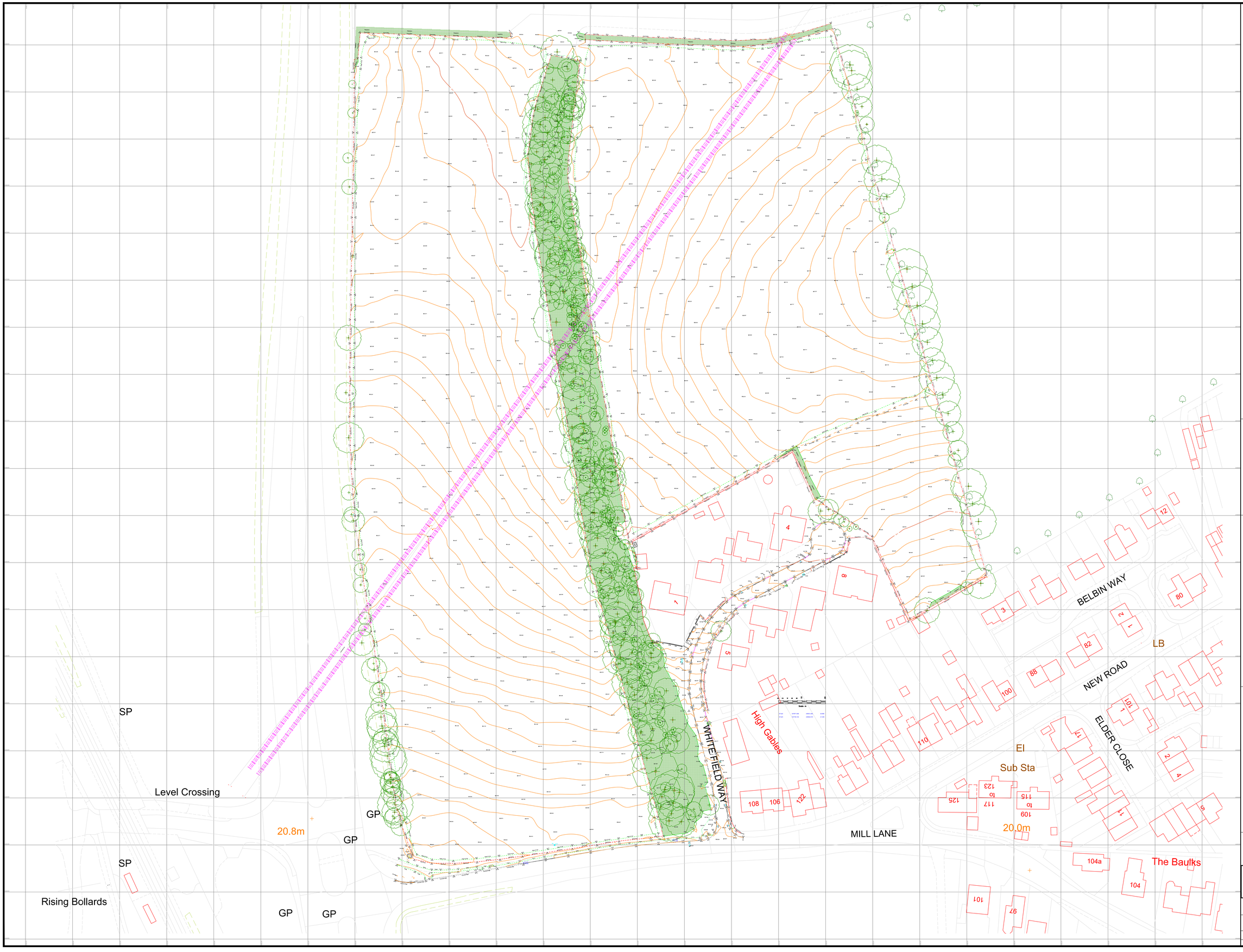
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Project Phase:	Date:	Drawn By:	Checked By:
PLANNING	16.09.26	TB	DP

Drawing Number:	Revision:
MLA116310-A3-0201	-

Appendix B - Topographical Survey

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Appendix C - EA Data

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Flood risk assessment data

Location of site: 547705 / 249706 (shown as easting and northing coordinates)
Document created on: 10 August 2026
This information was previously known as a product 4.
Customer reference number: AEA4VU83X8UM

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods

- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- modelled data
- modelled climate change data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Other sources of flooding

To find out about other factors that might affect the flood risk of this location, you should check:

- reservoir flood risk
- groundwater flood risk - you could use the British Geological Survey groundwater flooding data, groundwater: current status and flood risk and the guide on mining and groundwater constraints for development - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's strategic flood risk assessment (SFRA), which includes future flood risk

Your lead local flood authority is Cambridgeshire County.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: EAn_Cam Package_CamUrban_JBA_2023
Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial
Date: 28 July 2023

Model name: EAn_CamRural_Cam_2014
Scenario(s): No defences exist fluvial, no defences exist climate change fluvial
Date: 1 January 2014

These models contain the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occuring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 1.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

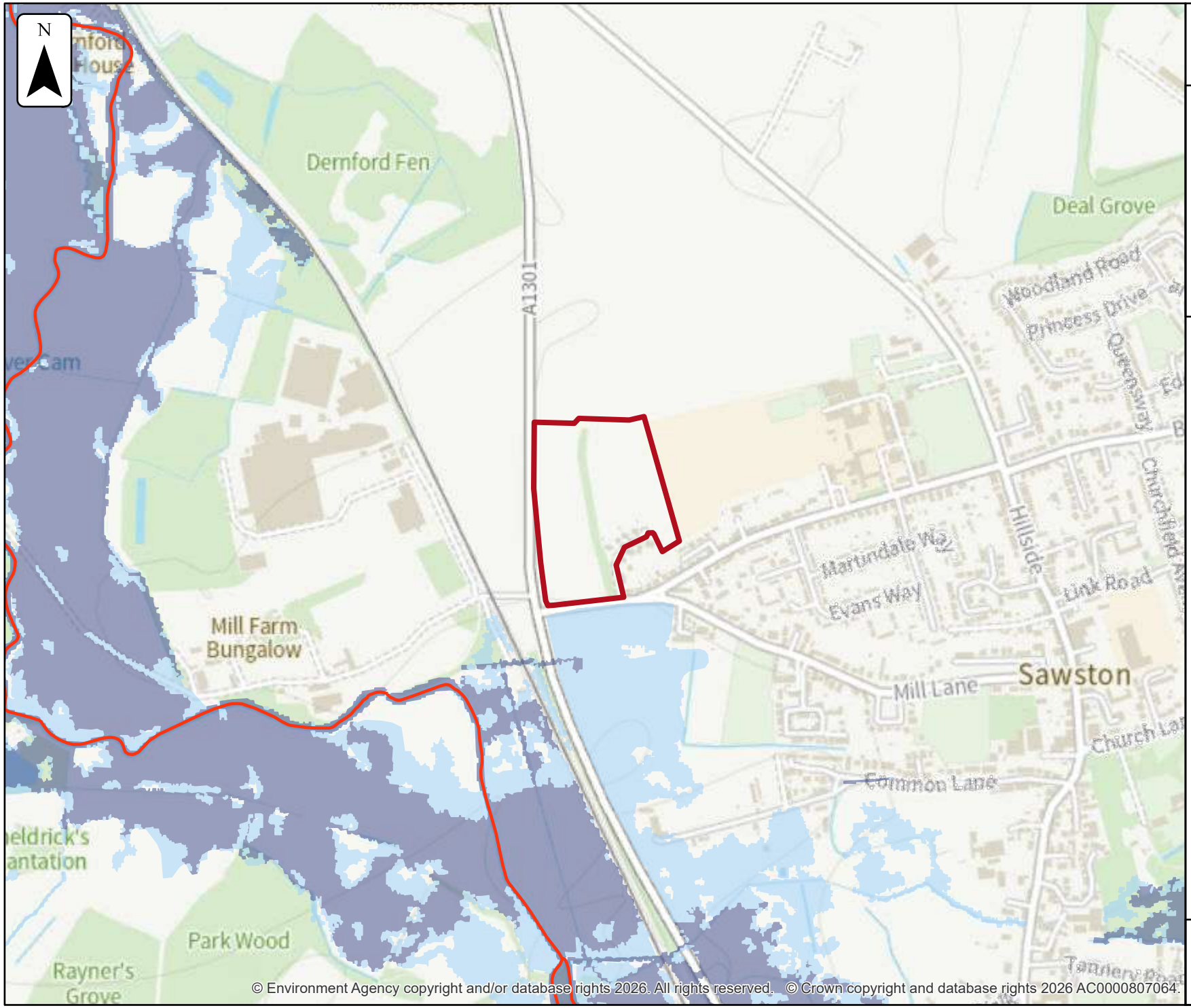
- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



Environment Agency

Flood map for planning

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

- Selected area
- Main river
- Flood Zone 3
- Flood Zone 2

0 100 200 300 400 500
metres

Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

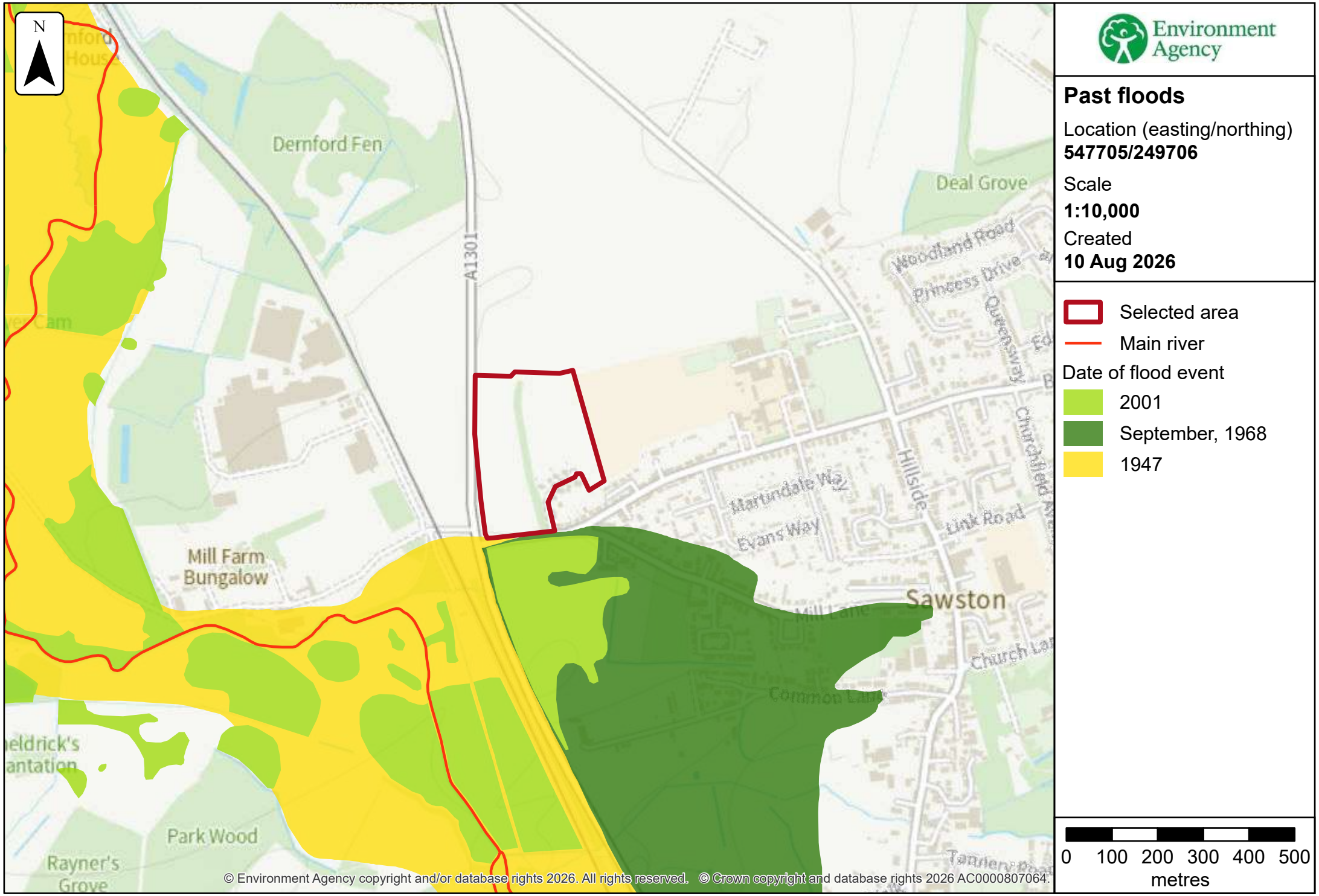
The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

Download the complete recorded flood outlines dataset, which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Cambridgeshire County Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



Environment Agency

Past floods

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

- Selected area
- Main river

Date of flood event
- 2001
- September, 1968
- 1947

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Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
2001	2001	unknown	unknown	No
15 September 1968	19 September 1968	unknown	unknown	No
1947	1947	unknown	unknown	Yes

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest flood risk assessment climate change allowances. Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

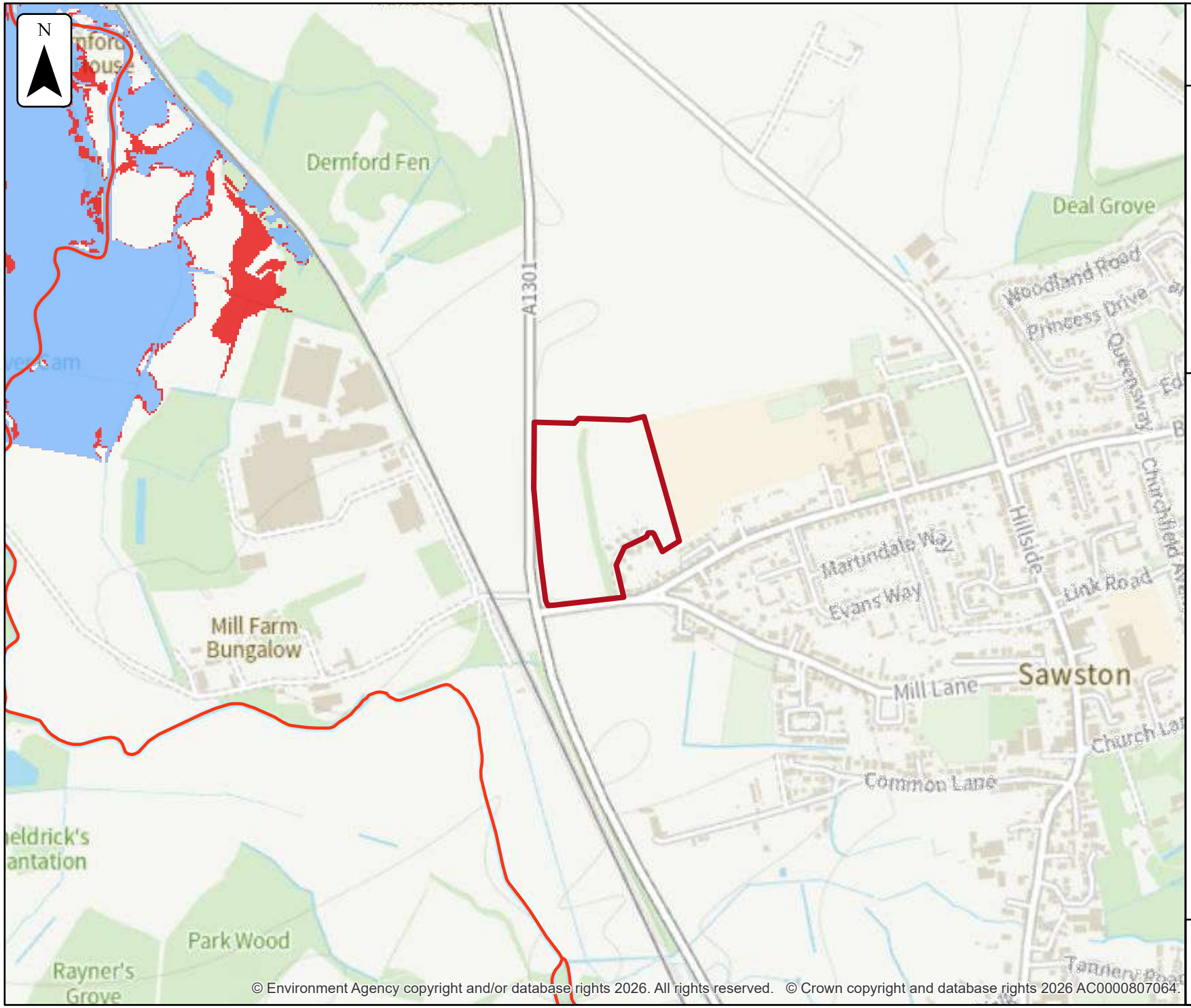
- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change

No data available

We do not have any height or depth data at this location for the following models:

Model name: EAn_Cam Package_CamUrban_JBA_2023
Scenario(s): Defences removed modelled fluvial, Defended climate change modelled fluvial, Defended modelled fluvial

Model name: EAn_CamRural_Cam_2014
Scenario(s): No defences exist climate change modelled fluvial, No defences exist modelled fluvial



Environment Agency

Defences removed modelled fluvial extent

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

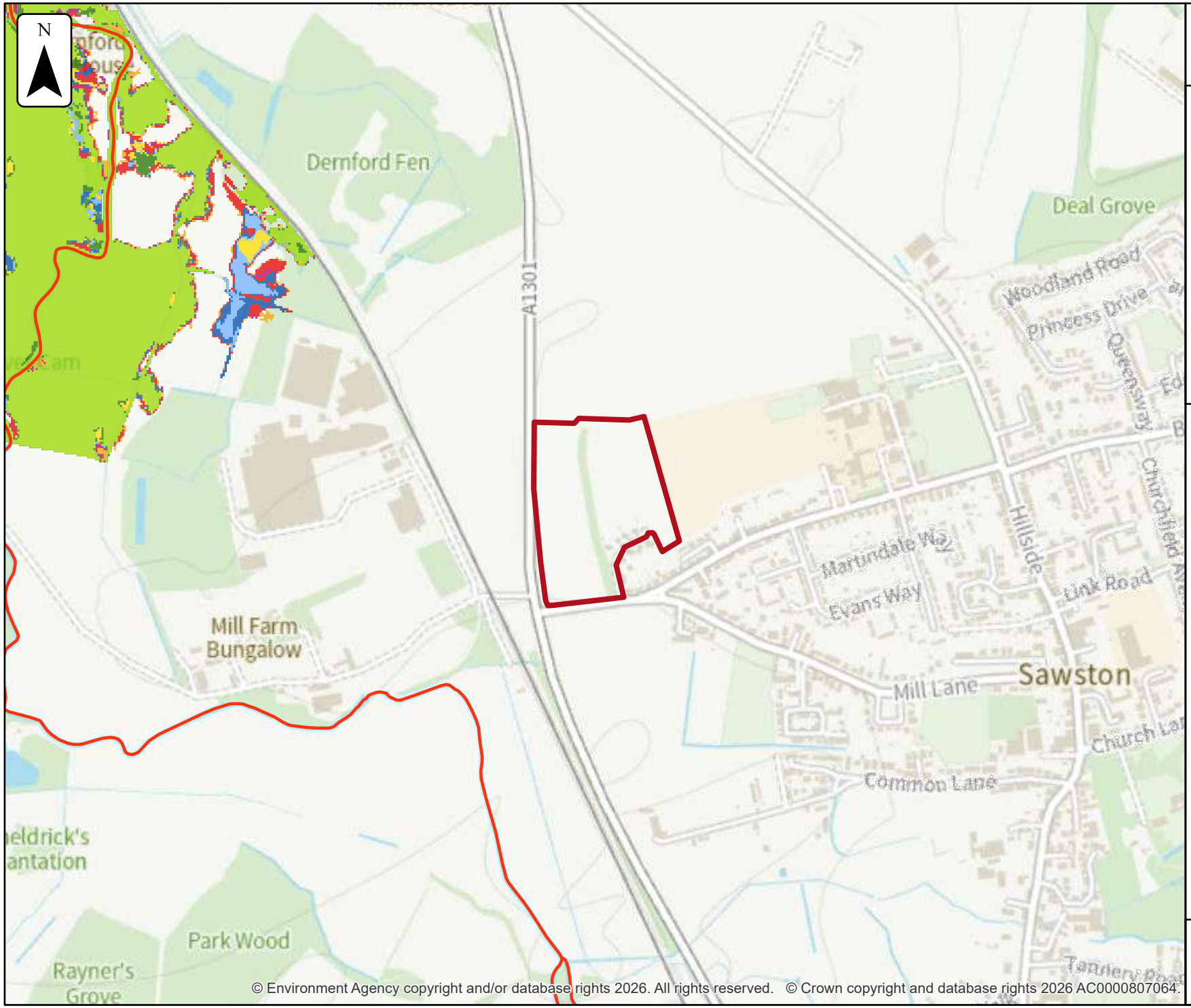
- Selected area
- Main river

Modelled flood extent

- 1% AEP
- 0.1% AEP

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defended climate change modelled fluvial extent

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

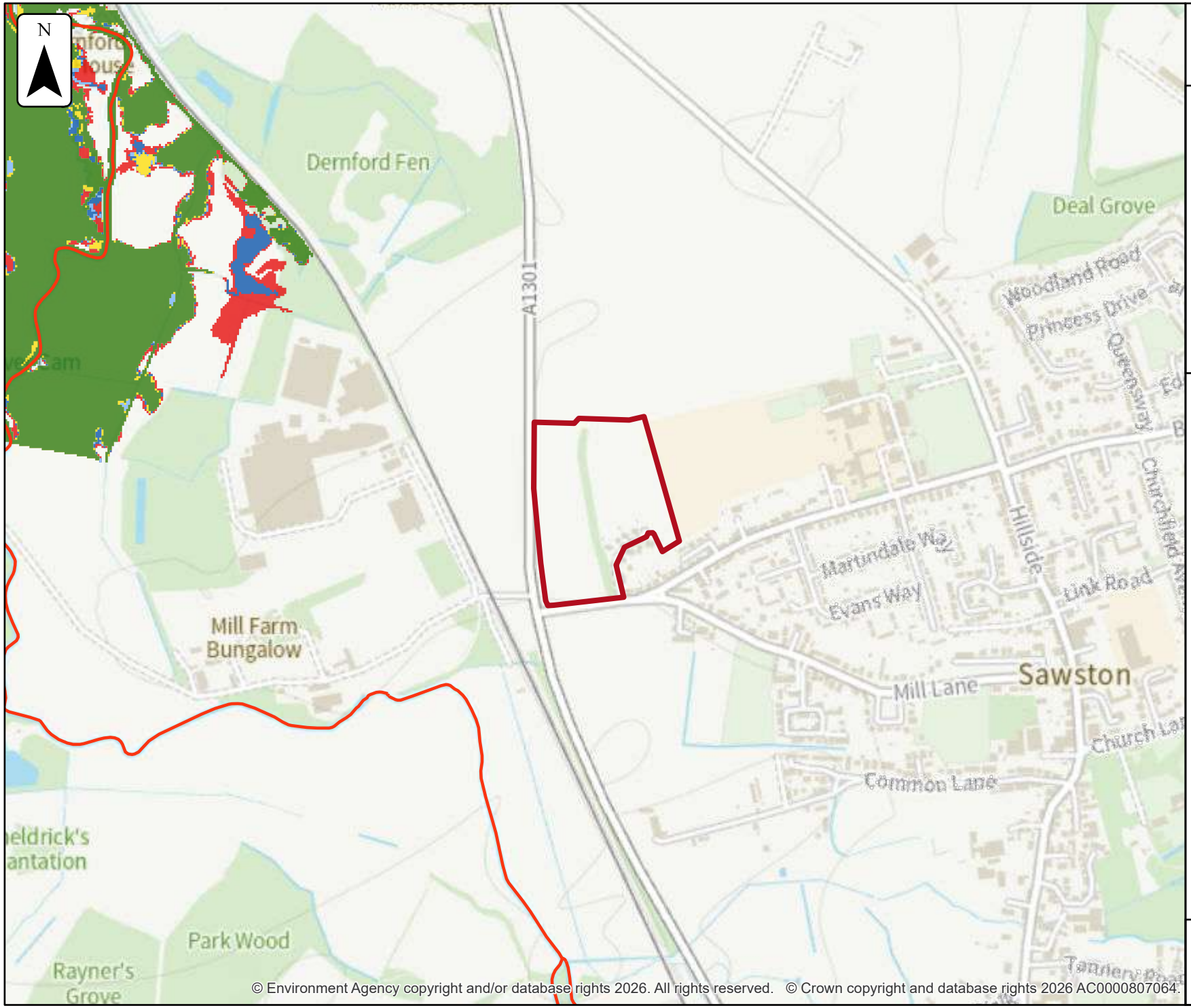
- Selected area
- Main river

Modelled flood extent

- 5% AEP (+19%)
- 5% AEP (+45%)
- 1% AEP (+9%)
- 1% AEP (+19%)
- 1% AEP (+45%)
- 0.1% AEP (+9%)
- 0.1% AEP (+19%)
- 0.1% AEP (+45%)

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defended modelled fluvial extent

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

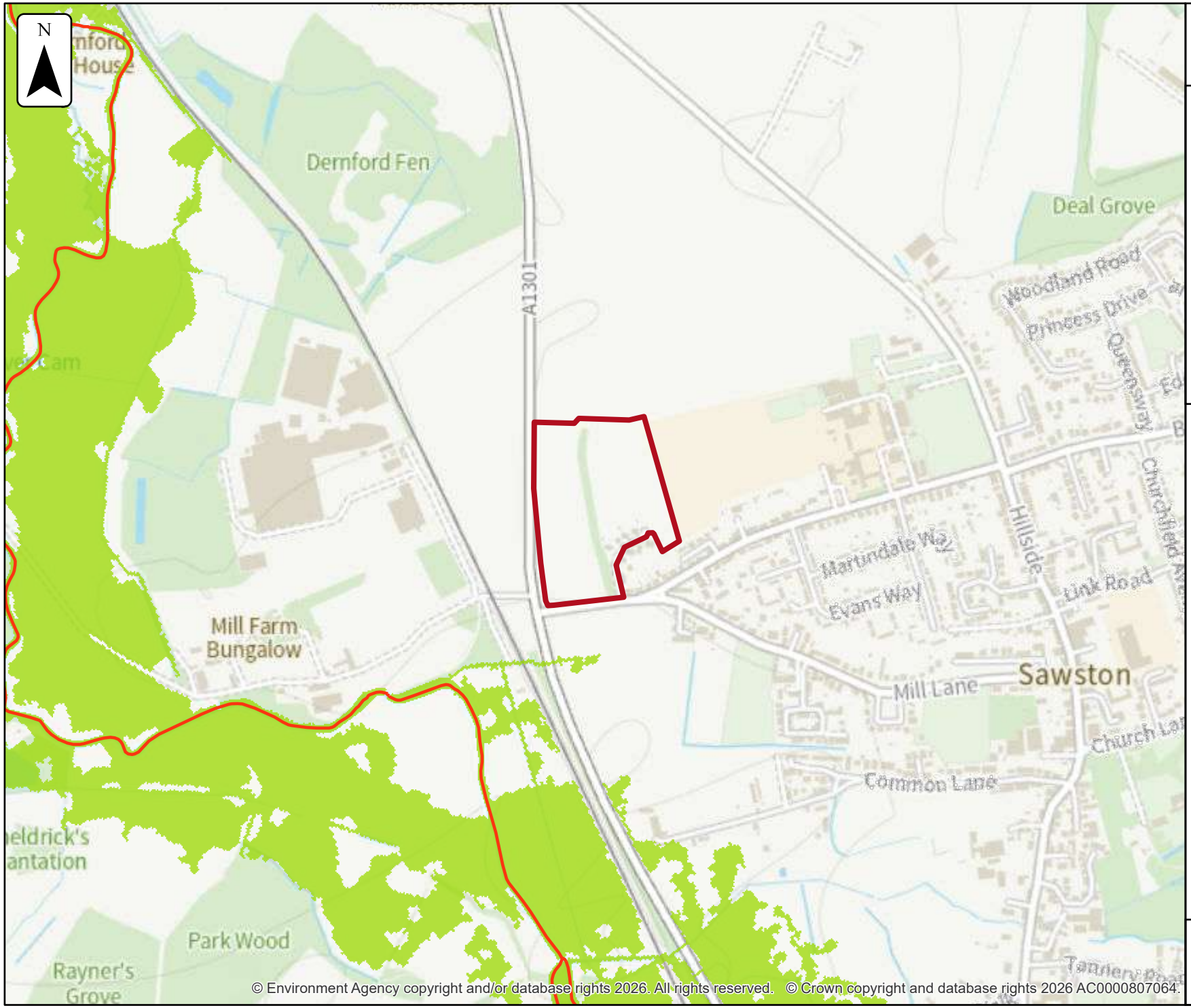
- Selected area
- Main river

Modelled flood extent

- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

No defences exist climate change modelled fluvial extent

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn CamRural Cam

Selected area

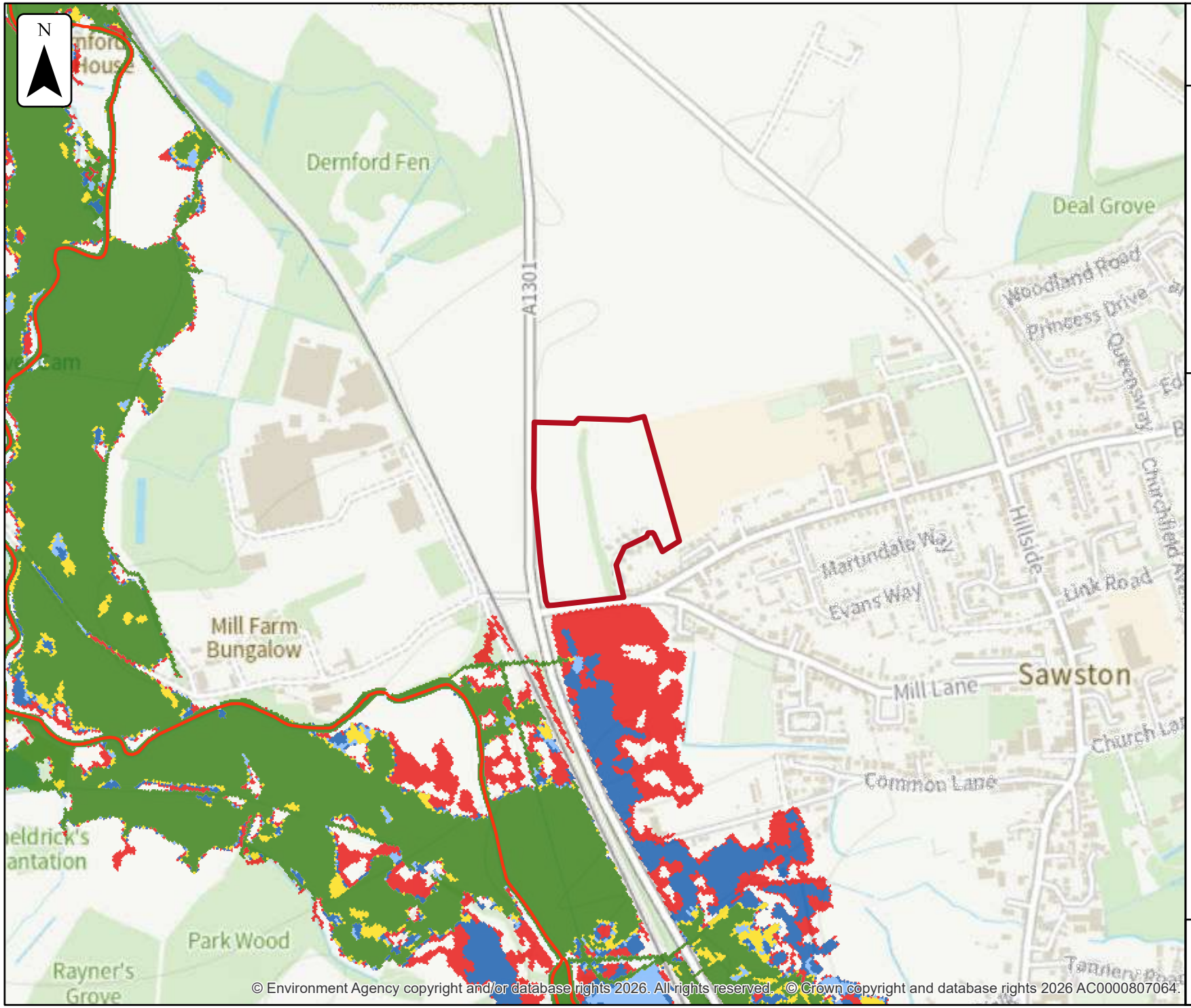
Main river

Modelled flood extent

1% AEP (+20%)

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

No defences exist modelled fluvial extent

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn CamRural Cam

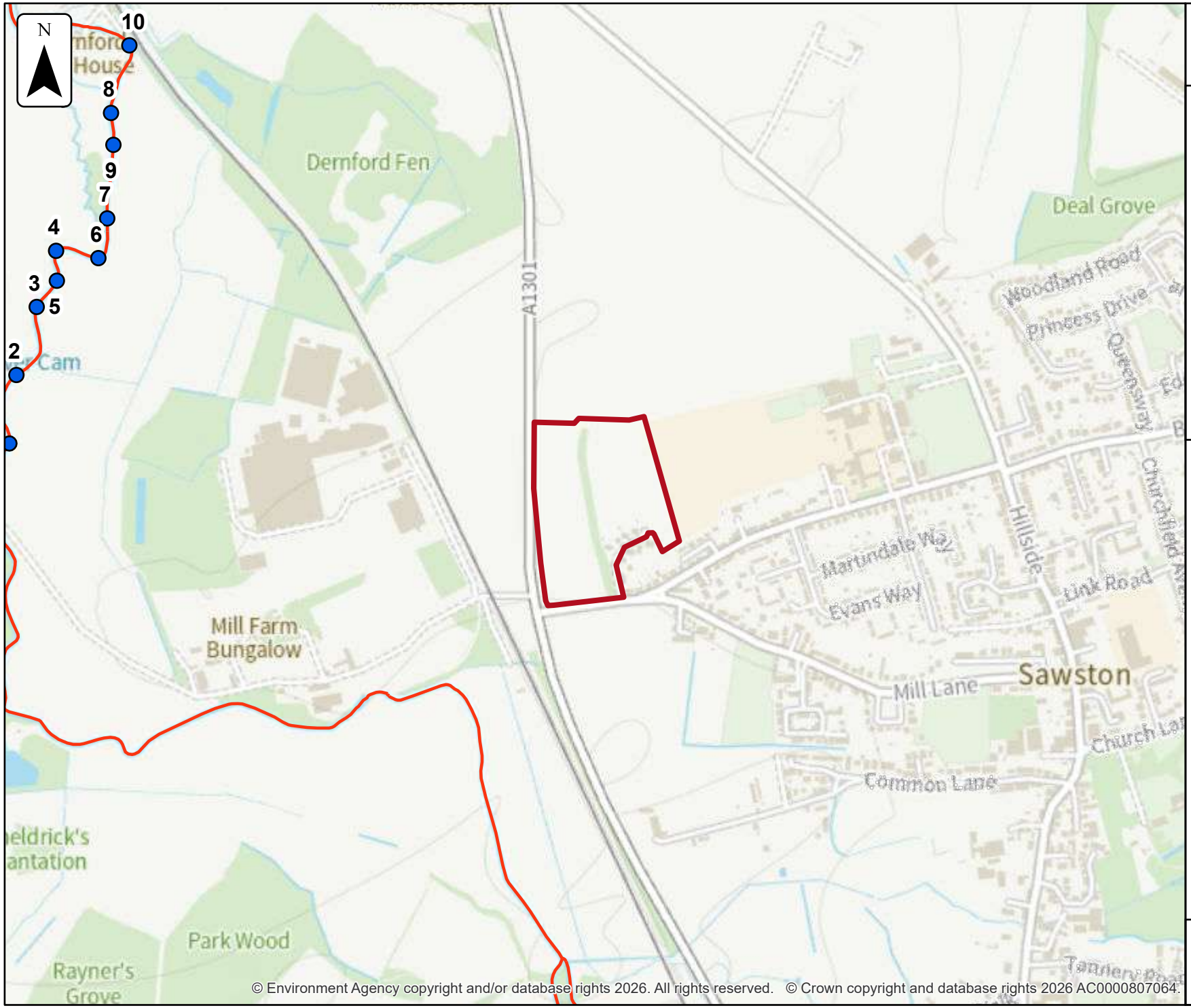
- Selected area
- Main river

Modelled flood extent

- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defended modelled fluvial node locations

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

Selected area
Modelled location
Main river

0 100 200 300 400 500
metres

Modelled node locations data

Defended

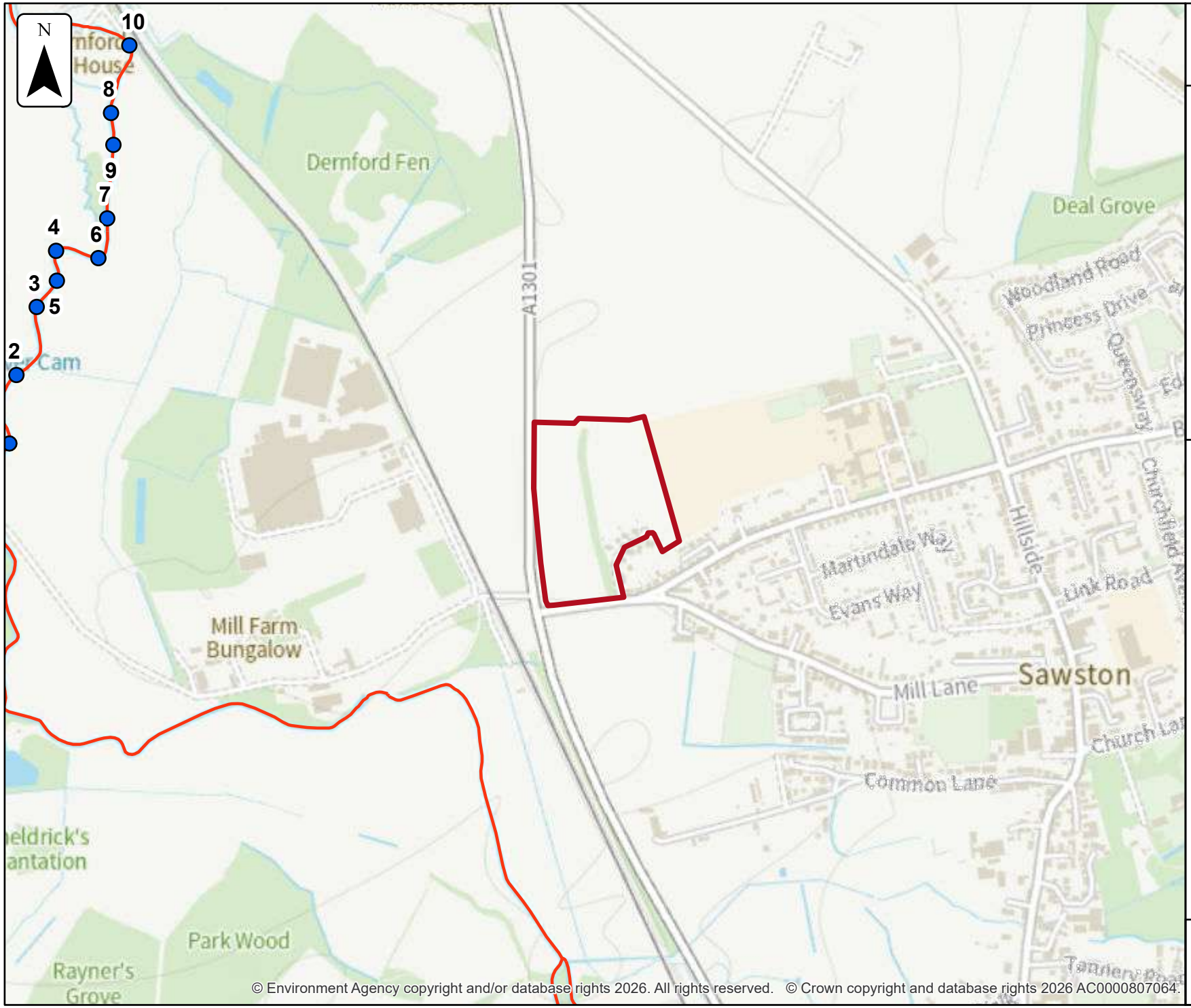
Label	Modelled location ID	Easting	Northing	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level
1	1497921	546564	249824	16.75	16.78	16.80	16.83	16.95
2	1498242	546578	249958	16.61	16.63	16.63	16.65	16.70
3	1498080	546617	250090	16.57	16.59	16.59	16.61	16.67
4	1498294	546655	250199	16.56	16.57	16.58	16.59	16.64
5	1498081	546657	250141	16.55	16.56	16.57	16.58	16.62
6	1498179	546738	250185	16.55	16.57	16.58	16.59	16.65
7	1497847	546755	250263	16.50	16.52	16.53	16.54	16.59
8	1498094	546762	250468	16.40	16.42	16.42	16.44	16.49
9	1497834	546767	250406	16.43	16.45	16.45	16.47	16.52
10	1498139	546798	250600	16.27	16.28	16.29	16.30	16.34

Data in this table comes from the EAn Cam Package CamUrban JBA 2023 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

Defended

Label	Modelled location ID	Easting	Northing	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow
1	1497921	546564	249824	23.33	27.17	29.26	34.03	57.49
2	1498242	546578	249958	18.43	20.81	22.04	24.75	35.73
3	1498080	546617	250090	14.23	15.28	15.80	17.02	22.66
4	1498294	546655	250199	12.38	12.53	12.60	12.72	15.79
5	1498081	546657	250141	14.05	14.95	15.40	16.47	22.04
6	1498179	546738	250185	12.37	12.52	12.59	12.70	13.08
7	1497847	546755	250263	13.01	13.30	13.45	13.78	15.49
8	1498094	546762	250468	12.85	13.06	13.17	13.38	14.07
9	1497834	546767	250406	12.85	13.06	13.17	13.38	14.07
10	1498139	546798	250600	12.93	13.20	13.33	13.60	14.71

Data in this table comes from the EAn Cam Package CamUrban JBA 2023 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.



Environment Agency

Defences removed modelled fluvial node locations

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

- Selected area
- Modelled location
- Main river

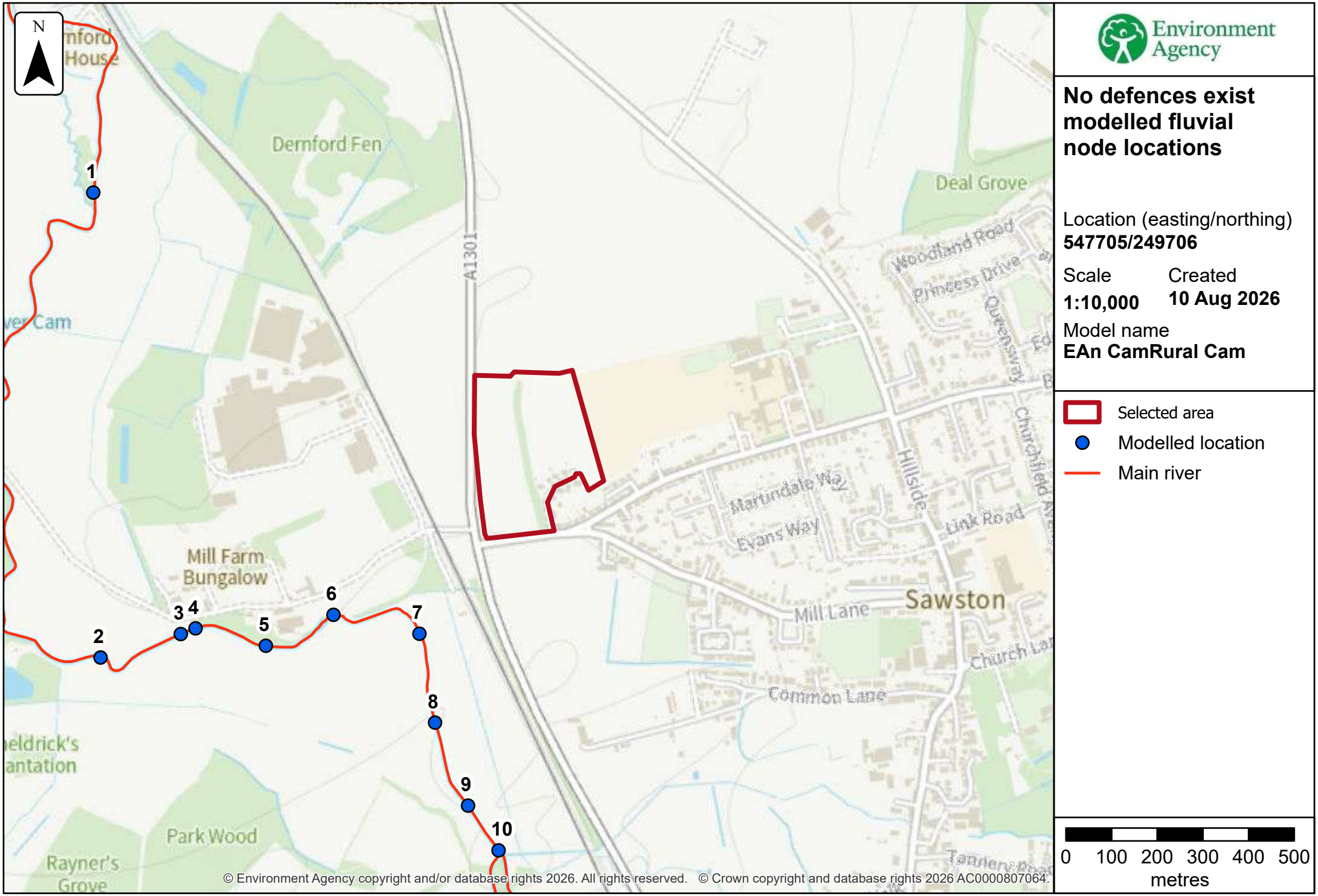
0 100 200 300 400 500
metres

Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	1% AEP	0.1% AEP	1% AEP	0.1% AEP
				Level	Level	Flow	Flow
1	1497921	546564	249824	16.80	16.95	29.26	57.49
2	1498242	546578	249958	16.63	16.70	22.04	35.73
3	1498080	546617	250090	16.59	16.67	15.80	22.66
4	1498294	546655	250199	16.58	16.64	12.60	15.79
5	1498081	546657	250141	16.57	16.62	15.40	22.04
6	1498179	546738	250185	16.58	16.65	12.59	13.08
7	1497847	546755	250263	16.52	16.59	13.45	15.49
8	1498094	546762	250468	16.42	16.49	13.17	14.07
9	1497834	546767	250406	16.45	16.52	13.17	14.07
10	1498139	546798	250600	16.29	16.34	13.33	14.71

Data in this table comes from the EAn Cam Package CamUrban JBA 2023 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.



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Environment Agency

No defences exist modelled fluvial node locations

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn CamRural Cam

Selected area

Modelled location

Main river

0 100 200 300 400 500
metres

Modelled node locations data

No defences exist

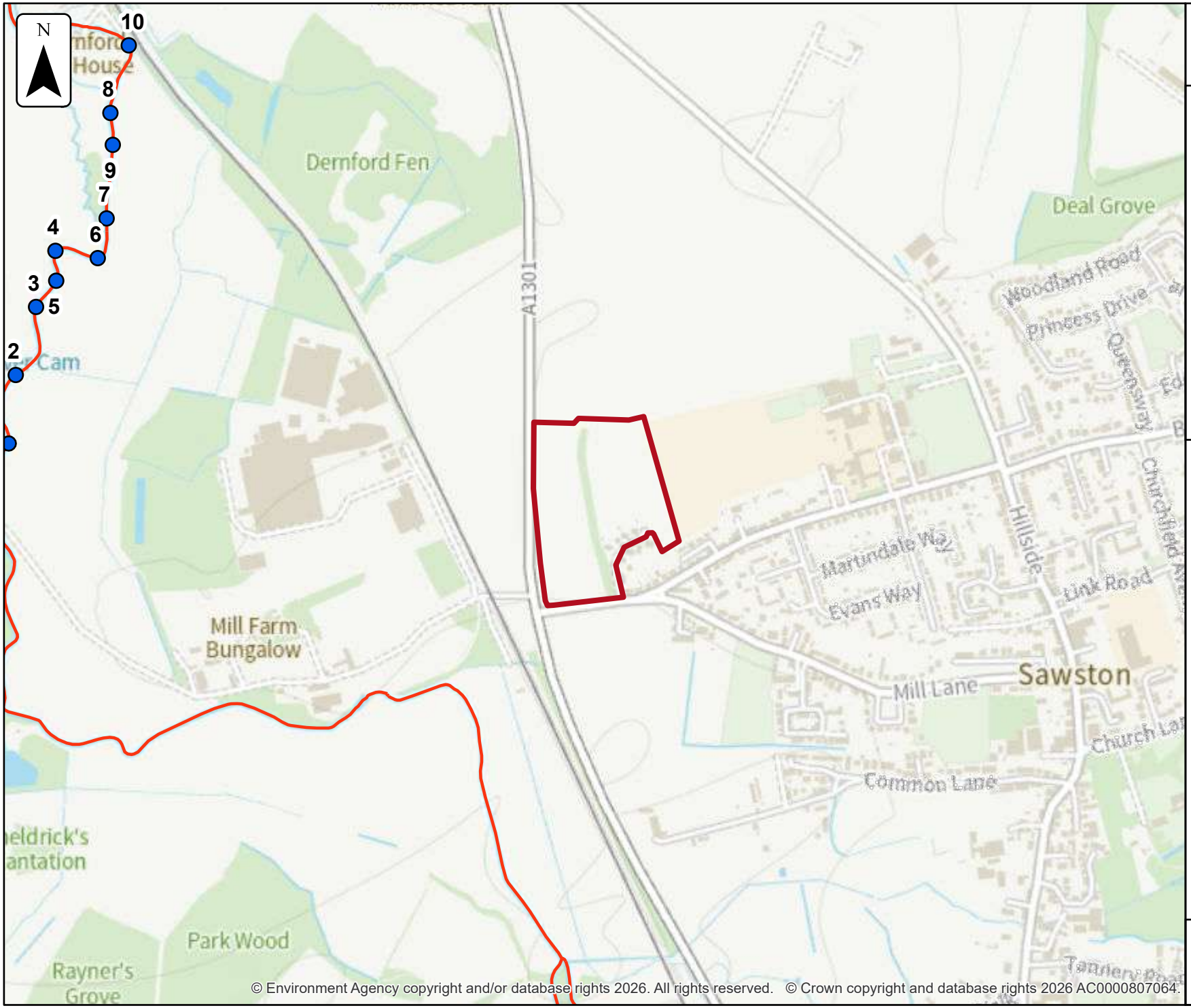
Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level
1	1225757	546752	250266	16.31	16.35	16.38	16.42	16.43	16.44	16.46	16.50
2	1225746	546767	249248	17.20	17.26	17.32	17.37	17.39	17.40	17.42	17.48
3	1225815	546943	249299	17.42	17.47	17.54	17.59	17.62	17.64	17.68	17.76
4	1225710	546975	249311	17.48	17.53	17.58	17.62	17.64	17.66	17.69	17.77
5	1225831	547129	249273	17.64	17.68	17.74	17.77	17.79	17.81	17.84	17.90
6	1225730	547277	249341	18.06	18.09	18.14	18.17	18.19	18.19	18.21	18.26
7	1225852	547466	249300	18.50	18.55	18.62	18.67	18.69	18.71	18.74	18.84
8	1225881	547500	249105	18.81	18.85	18.93	18.99	19.01	19.03	19.07	19.14
9	1225673	547572	248923	19.0	19.05	19.13	19.19	19.21	19.23	19.26	19.31
10	1225901	547639	248825	19.16	19.18	19.24	19.28	19.30	19.32	19.35	19.40

Data in this table comes from the EAn CamRural Cam 2014 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

No defences exist

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1225757	546752	250266	11.18	11.66	12.24	12.97	13.34	13.59	14.18	15.61
2	1225746	546767	249248	12.12	12.78	13.57	14.28	14.81	15.21	16.10	18.0
3	1225815	546943	249299	12.12	12.55	12.84	12.98	13.02	13.06	13.13	13.23
4	1225710	546975	249311	12.13	12.75	13.63	14.20	14.44	14.60	14.72	15.08
5	1225831	547129	249273	11.91	12.49	13.46	13.91	14.06	14.16	14.25	15.05
6	1225730	547277	249341	12.24	13.24	14.87	15.97	16.52	16.82	17.56	20.13
7	1225852	547466	249300	11.35	12.14	13.47	14.43	14.94	15.28	15.96	17.12
8	1225881	547500	249105	11.35	12.14	13.32	14.02	14.36	14.64	14.99	15.30
9	1225673	547572	248923	9.16	9.15	9.09	9.07	9.05	9.03	8.96	8.71
10	1225901	547639	248825	10.24	11.21	13.22	14.94	16.20	17.16	18.75	21.82

Data in this table comes from the EAn CamRural Cam 2014 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.



Environment Agency

Defended climate change modelled fluvial node locations

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn Cam Package CamUrban JBA 2023

- Selected area
- Modelled location
- Main river

0 100 200 300 400 500
metres

Modelled node locations data

Defended climate change

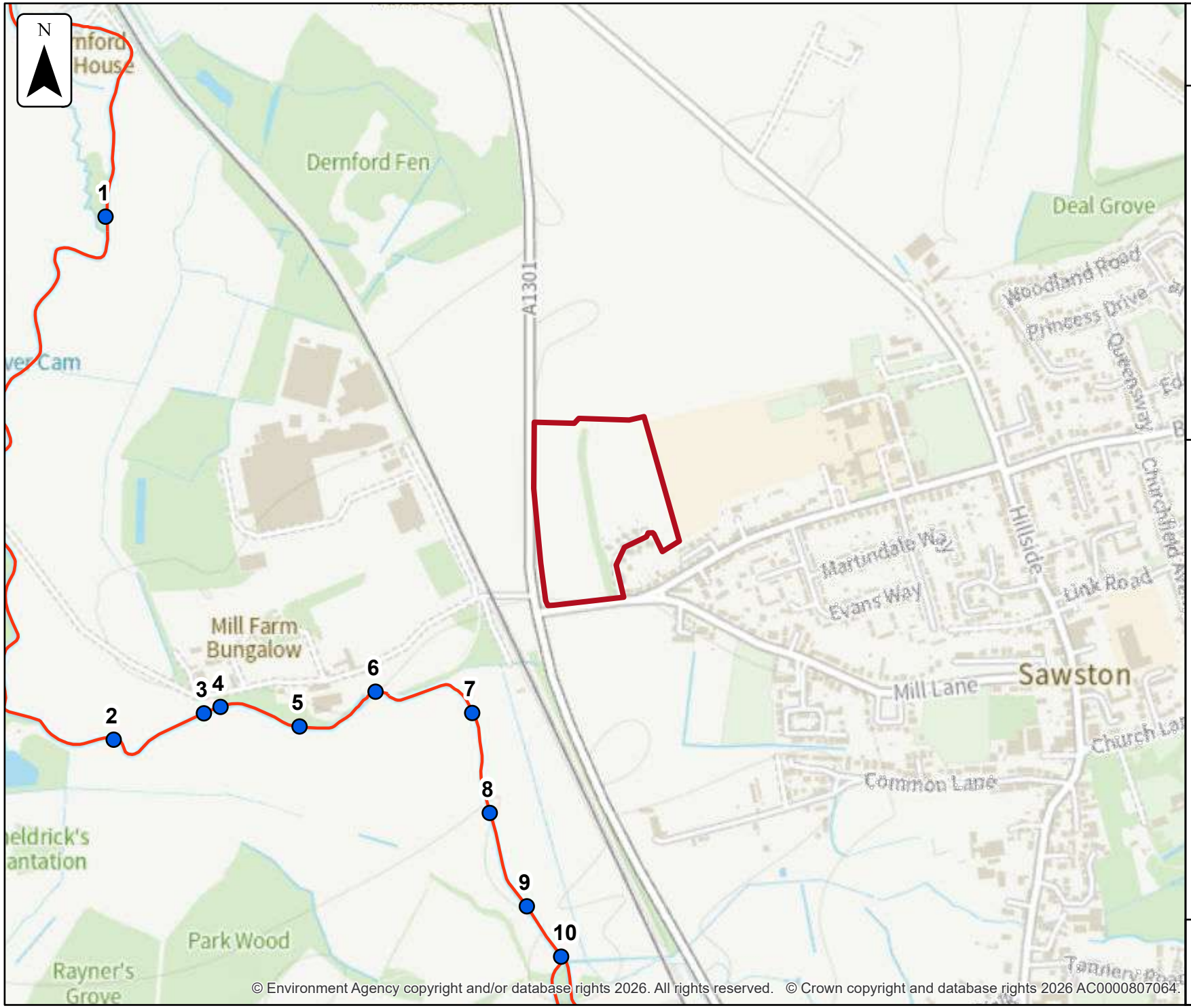
Label	Modelled location ID	Easting	Northing	5% AEP (+9%)	5% AEP (+19%)	5% AEP (+45%)	1% AEP (+9%)	1% AEP (+19%)	1% AEP (+45%)	0.1% AEP (+9%)	0.1% AEP (+19%)	0.1% AEP (+45%)
				Level	Level	Level	Level	Level	Level	Level	Level	Level
1	1497921	546564	249824	16.72	16.74	16.79	16.82	16.84	16.88	16.96	16.98	17.02
2	1498242	546578	249958	16.60	16.61	16.63	16.64	16.65	16.67	16.72	16.73	16.76
3	1498080	546617	250090	16.56	16.57	16.59	16.60	16.61	16.63	16.68	16.69	16.72
4	1498294	546655	250199	16.54	16.55	16.57	16.59	16.60	16.61	16.65	16.66	16.68
5	1498081	546657	250141	16.54	16.55	16.57	16.58	16.59	16.60	16.63	16.64	16.66
6	1498179	546738	250185	16.54	16.55	16.57	16.59	16.60	16.62	16.66	16.67	16.70
7	1497847	546755	250263	16.49	16.50	16.52	16.53	16.54	16.56	16.60	16.60	16.62
8	1498094	546762	250468	16.39	16.40	16.42	16.43	16.44	16.46	16.50	16.51	16.53
9	1497834	546767	250406	16.42	16.43	16.45	16.46	16.47	16.49	16.53	16.54	16.56
10	1498139	546798	250600	16.26	16.27	16.29	16.30	16.30	16.32	16.35	16.36	16.37

Data in this table comes from the EAn Cam Package CamUrban JBA 2023 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

Defended climate change

Label	Modelled location ID	Easting	Northing	5% AEP (+9%)	5% AEP (+19%)	5% AEP (+45%)	1% AEP (+9%)	1% AEP (+19%)	1% AEP (+45%)	0.1% AEP (+9%)	0.1% AEP (+19%)	0.1% AEP (+45%)
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1497921	546564	249824	20.82	22.73	27.70	31.88	34.82	42.42	62.64	68.40	83.34
2	1498242	546578	249958	16.83	18.06	21.13	23.53	25.18	29.13	38.03	40.45	46.48
3	1498080	546617	250090	13.48	14.05	15.41	16.48	17.23	19.17	23.99	25.47	29.31
4	1498294	546655	250199	12.26	12.35	12.55	12.67	12.71	13.16	16.85	18.03	21.16
5	1498081	546657	250141	13.37	13.89	15.06	15.98	16.66	18.59	23.29	24.65	28.07
6	1498179	546738	250185	12.25	12.34	12.54	12.65	12.70	12.84	13.11	13.07	13.15
7	1497847	546755	250263	12.78	12.96	13.34	13.63	13.84	14.39	15.96	16.48	17.97
8	1498094	546762	250468	12.67	12.81	13.09	13.29	13.42	13.70	14.22	14.38	14.77
9	1497834	546767	250406	12.67	12.81	13.09	13.29	13.42	13.70	14.22	14.38	14.77
10	1498139	546798	250600	12.72	12.88	13.23	13.48	13.64	14.01	14.93	15.17	15.79

Data in this table comes from the EAn Cam Package CamUrban JBA 2023 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.



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Environment Agency

No defences exist climate change modelled fluvial node locations

Location (easting/northing)
547705/249706

Scale
1:10,000

Created
10 Aug 2026

Model name
EAn CamRural Cam

Selected area

Modelled location

Main river

0 100 200 300 400 500
metres

Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1225757	546752	250266	16.45	14.0
2	1225746	546767	249248	17.42	15.85
3	1225815	546943	249299	17.67	13.11
4	1225710	546975	249311	17.68	14.70
5	1225831	547129	249273	17.83	14.22
6	1225730	547277	249341	18.20	17.29
7	1225852	547466	249300	18.72	15.74
8	1225881	547500	249105	19.05	14.90
9	1225673	547572	248923	19.25	9.04
10	1225901	547639	248825	19.34	18.54

Data in this table comes from the EAn CamRural Cam 2014 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as canals, groundwater and reservoirs

Your lead local flood authority is Cambridgeshire County.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

Find out more about flood risk activity permits

Help and advice

Contact the East Anglia Environment Agency team at enquiries_eastanglia@environment-agency.gov.uk for:

- more information about getting a product 5, 6, 7 or 8
- general help and advice about the site you're requesting data for

Appendix D - Anglian Water Sewer Mapping

EAS, SuDS Design Centre and Two Eighty are trading names of EAS Transport Planning Ltd registered in England and Wales, No. 5751442



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Date: 18/08/26

Scale: 1:1250

Map Centre: 547689,249681

Data updated: 31/07/26

Our Ref: 2192842 - 1

Wastewater Plan A2
Powered by digdat

This plan is provided by Anglian Water pursuant its obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any search results attached. The information on this plan is based on data currently recorded but position must be regarded as approximate. Service pipes, private sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or disposal main or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2026 Ordnance Survey AC0000813445.This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

Foul Sewer
Surface Sewer
Combined Sewer
Final Effluent
Rising Main*
Private Sewer*
Decommissioned Sewer*

Outfall*
Inlet*
Manhole*

Sewage Treatment Works
Public Pumping Station
Decommissioned Pumping Station
*(Colour denotes effluent type)

ben.watt@eastp.co.uk
Mill Lane, Sawston

love every drop
anglianwater

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
0508	C	-	-	-
0509	C	-	-	-
0510	C	-	-	-
0511	C	-	-	-
0512	C	-	-	-
0513	C	-	-	-
0514	C	-	-	-
0515	C	-	-	-
0602	C	-	-	-
0603	C	-	-	-
5501	F	-	-	1.728
6501	F	-	-	-
7501	F	-	-	2.947
7502	F	-	-	2.972
8501	F	-	-	-
8502	F	-	-	2.591
8503	F	-	-	2.92
8504	F	-	-	-
8505	F	-	-	1.676
8506	F	-	-	-
8507	F	-	-	-
8508	F	-	-	-
8509	F	-	-	-
9401	F	-	-	2.54
9501	F	-	-	-
9502	F	-	-	-
9503	F	-	-	-
9504	F	-	-	-
9505	F	-	-	1.625
9601	F	-	-	1.548
9602	F	-	-	-
9603	F	-	-	-
9604	F	-	-	-
9605	F	-	-	-
9606	F	-	-	-

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Appendix E - Causeway Flow Outputs: Greenfield

EAS, SuDS Design Centre and Two Eighty are trading names of EAS Transport Planning Ltd registered in England and Wales, No. 5751442

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Simulation Settings

Rainfall Methodology	FEH-22	Drain Down Time (mins)	1440	30 year (l/s)	0.0
Rainfall Events	Singular	Additional Storage (m³/ha)	20.0	100 year (l/s)	0.0
Summer CV	1.000	Starting Level (m)		Check Discharge Volume	✓
Winter CV	1.000	Check Discharge Rate(s)	✓	100 year 360 minute (m³)	
Analysis Speed	Normal	1 year (l/s)	0.0		
Skip Steady State	x	2 year (l/s)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	0	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Betterment (%)	0
Greenfield Method	ReFH2	Q 1 year (l/s)	0.5
Region	England, Wales, NI	Q 2 year (l/s)	0.6
Include Baseflow	x	Q 30 year (l/s)	2.1
Positively Drained Area (ha)	1.000	Q 100 year (l/s)	2.9

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	ReFH2	Storm Duration (mins)	360
Region	England, Wales, NI	Betterment (%)	0
Include Baseflow	x	Runoff Volume (m³)	36
Positively Drained Area (ha)	1.000		

Flow+ v17.0 Copyright © 1988-2026 Causeway Technologies Ltd

Appendix F - Proposed SuDS Layout

EAS, SuDS Design Centre and Two Eighty are trading names of EAS Transport Planning Ltd registered in England and Wales, No. 5751442

Indicative location of infiltration basins



Source: CIRIA

Raingarden and Raingarden Planters



Source: Enfield Council, East of Eden

Swales





Source: Susdrain

Bioretention areas



Source: Essex Design Guide

Green Roofs



Source: Grass Roof Company

Pervious Paving



Source: Marshalls

Appendix G - Causeway Flow Outputs: Proposed SuDS

EAS, SuDS Design Centre and Two Eighty are trading names of EAS Transport Planning Ltd registered in England and Wales, No. 5751442

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
Depth/Area 1	20.000	12.030	70.358	1.500	18.500

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x
Rainfall Events	Consecutive	Drain Down Time (mins)	1440
Summer CV	1.000	Additional Storage (m³/ha)	20.0
Additional Area (A %)	0	Starting Level (m)	
Additional Flow (Q %)	0	Check Discharge Rate(s)	x
Analysis Speed	Normal	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Time Offset (mins)	Duration (mins)	Return Period (years)	Climate Change (CC %)	Time Offset (mins)	Duration (mins)	Return Period (years)	Climate Change (CC %)
0	1440	100	40	0		10	0

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00360	Safety Factor	5.0	Invert Level (m)	18.500
Side Inf Coefficient (m/hr)	0.00360	Porosity	1.00	Time to half empty (mins)	50077

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	2071.1	2071.1	1.500	2962.5	3001.3	1.510	0.0	3001.3

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Results for Consecutive Rainfall Critical Storm Duration. Lowest mass balance: 99.99%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440-1440	Depth/Area 1	2940	19.674	1.174	87.8	2868.2530	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)
1440-1440	Depth/Area 1	Infiltration	0.6

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Appendix H - Maintenance Tables

Maintenance schedule for pervious pavement (Source: CIRIA C753, The SuDS Manual)

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Brushing and vacuuming	Three times per year at the end of winter, mid-summer, after autumn leaf fall, or as required based on Site specific observations of clogging or manufacturer's recommendations
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds	As required
Remedial Actions	Remediate any landscaping which, through vegetation maintenance of soil slip, has been raised to within 50mm of the level of paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance of a hazard to the user, and replace lost jointing material	As required
	Rehabilitation of surface and upper sub-surface by remedial sweeping	Every 10-15 years or as required
Monitoring	Initial inspection	Monthly for 3 months after installation
	Inspect for evidence or poor operation and/or weed growth. If required, take remedial action	Every 3 months, 48 hours after a large storm
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

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Maintenance schedule for Infiltration Basin (Source: CIRIA C753, The SuDS Manual)

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove litter, debris and trash	Monthly, or as required
	Grass cutting to retain grass height within specified design range – for landscaped area, access route, in and around basin	Monthly (during growing season) or as required
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
Occasional Maintenance	Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions if required	Annually, or as required
	Prune and trim trees and remove cuttings	As required
	Remove sediment from pre-treatment system when 50% full	As required
Remedial Actions	Repair erosion or other damage by re-turfing or reseeding	As required
	Realign the rip-rap	As required
	Repair or rehabilitate inlets, outlets and overflows	As required
	Rehabilitate infiltration surface using scarify and spiking techniques if performance deteriorates	As required
	Relevel uneven surfaces and reinstate design levels	As required
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect infiltration surface for ponding, and compaction	Monthly
	Inspect inlets and pre-treatment systems for silt accumulation; establish appropriate silt removal frequencies	Half yearly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly

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