FLOOD RISK ASSESSMENT

LOCATION:
Unit 12 Twin Brook Road, Clitheroe

CLIENT:
A V Town Planning Ltd

DOCUMENT REF:
26182-FRA-001

DATE:
05.03.26

DART ENGINEERS LTD
CIVIL AND STRUCTURAL ENGINEERING

CONTENTS & AMENDMENT HISTORY

Revision	Description	Date	Author	Checked
A	First Issue	March 2026	H Dyson	A Dyson

1.0 INTRODUCTION

This Flood Risk Assessment (FRA) has been prepared in support of a planning application and accords with the requirements of the National Planning Policy Framework (NPPF), the Planning Practice Guidance (PPG), and relevant local and national flood risk policy.
The purpose of this FRA is to demonstrate that the proposed development will be safe for its lifetime, will not increase flood risk elsewhere, and where possible will reduce flood risk overall, taking account of all sources of flooding including fluvial, pluvial, groundwater, sewer, and artificial sources.

The assessment has been undertaken using a proportionate, risk-based approach appropriate to the scale and vulnerability classification of the development.

Site Name	Unit 12 Twin Brook Road
Location	Unit 12 Twin Brook Road, Clitheroe BB7 1QX
Application Site Area (ha)	0.248 ha
Development Type	Industrial
NPPF Vulnerability	Less Vulnerable
EA Flood Zone	Flood Zone 2 & 3
EA Office	Lancashire
Local Planning Authority	Lancashire County Council

Table 1.1 - Site Summary

1.1 SOURCES OF DATA

The report is based on the following information:

i. Site Location Plan (Appendix A)
ii. Proposed Site Layout (Appendix B)
iii. Flood Evacuation Plan (Appendix C)
iv. EA Flood Data (Appendix D)
v. Environment Agency Flood Map for Planning (Rivers and Sea)
vi. Environment Agency Risk of Flooding from Surface Water Mapping
vii. Environment Agency Reservoir Flood Risk Mapping
viii. Published Strategic Flood Risk Assessment (SFRA) for the Local Planning Authority area
ix. Ordnance Survey mapping
x. Professional judgement informed by similar developments in comparable flood risk settings
xi. Environment Agency Product 4 Flood Risk Assessment Data (March 2026), including modelled flood levels, extents and climate change scenarios for the Mearley Brook catchment

1.2 EXISTING SITE

The site in question is located to the northeast of the town of Clitheroe. The site is approximately 0.248 ha in size and is bounded by Twin Brook Road to the north and the Mearley Brook to the south.

There is one major watercourse, the Mearley Brook located approximately 20m off the southern boundary, which directly affects the site.

The site is previously developed (brownfield) land and currently drains via an established drainage network. There is no evidence of historic fluvial flooding affecting the site. Surface water flow paths generally follow local topography and do not preferentially route toward the existing building footprint.

Figure 1.1 - Site Location

1.3 PROPOSED DEVELOPMENT

The proposed development is set to consist of the extension of Unit 12 industrial unit and the construction of a new site access road.

The proposed development does introduce a less vulnerable use into an area of higher flood risk and does not involve basement development or land raising within mapped flood risk extents. The scale of development is modest and does not materially alter site-wide hydrology or floodplain storage.

1.4 FLOOD RISK PLANNING POLICY

National Planning Policy Framework

The NPPF requires development to be directed away from areas at highest risk of flooding through application of the Sequential Test and, where necessary, the Exception Test.

The PPG classifies flood risk vulnerability and confirms that development within Flood Zone 1 is appropriate for all land uses, subject to consideration of other sources of flooding and surface water management.

Flood Zones

The Flood Zone Map for Planning has been prepared by the Environment Agency. This identifies areas potentially at risk of flooding from fluvial or tidal sources. An extract from the mapping is included as Figure 1.4.

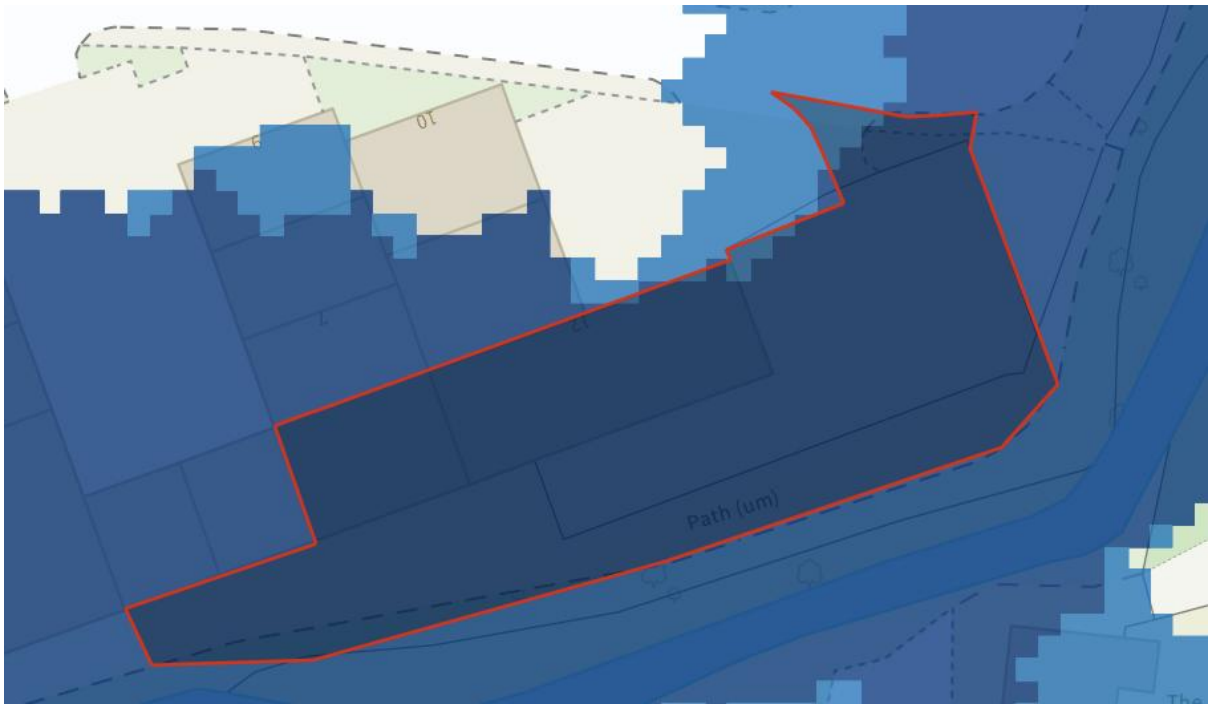


Figure 1.4 - Environment Agency Flood Zone Mapping

The Environment Agency Product 4 data confirms that the site lies within Flood Zone 3, defined as land having a 1% or greater annual probability of fluvial flooding in the undefended scenario.

It is noted that Flood Zone mapping does not account for the presence of flood defences or climate change and therefore represents a precautionary baseline position.

Detailed modelled outputs (refer Appendix D) confirm that the site is affected by fluvial flooding associated with Mearley Brook during the 1% AEP and 1% AEP + climate change events.

Table 2 of the Planning Practice Guidance classifies land use. Under these classifications the proposed industrial extension is considered to be 'Less Vulnerable' to the potential impacts of flooding.

Table 3 of the Planning Practice Guidance identifies that any development is considered appropriate within Flood Zone 3.

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable
Flood Zone 1	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception test required	✓
Flood Zone 3a	Exception test required	✓	**x**	Exception test required
Flood Zone 3b	Exception test required	✓	**x**	**x**

1.5 OTHER RELEVANT POLICY AND GUIDANCE

Strategic Flood Risk Assessment

The Lancashire County Council Strategic Flood Risk Assessment (SFRA) was prepared to review flood risks on a much wider scale to assess the potential for new development within the study area. The SFRA was used as an evidence base for Local Development Frameworks for each Local Planning Authority.

The SFRA therefore aims to bring together all available flood risk information for a variety of sources to provide a robust assessment. The SFRA therefore is useful for this site-specific FRA by highlighting available data and instances of known flooding in the area. Although written under the guidance of Planning Policy Statement 25, the SFRA is still considered to include relevant information.

Regard has also been had to the Local Planning Authority's Strategic Flood Risk Assessment (SFRA), which provides locally specific evidence relating to surface water, groundwater, and historic flooding.

Where relevant, this FRA also aligns with the National Standards for Sustainable Drainage Systems (June 2025), particularly in respect of ensuring that surface water is managed as close to source as reasonably practicable and that exceedance is safely routed.

2.0 POTENTIAL SOURCES OF FLOOD RISK

Each potential source of flooding has been assessed independently in accordance with PPG guidance. Both the risk to the site and the potential for the development to affect flood risk elsewhere have been considered.

The table below identifies the potential sources of flood risk to the site, and the impacts which the development could have in the wider catchment prior to mitigation. These are discussed in greater detail in the forthcoming section. The mitigation measures proposed to address flood risk issues and ensure the development is appropriate for its location are discussed within Section 3.0.

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial	X		X		The entirety of site is located within Flood Zone 2 & 3.
Tidal				X	There are no tidal influences effecting the site.
Canals				X	None present.
Groundwater			X		Ground conditions are not conducive to fluctuating groundwater levels.
Reservoirs and waterbodies				X	The site is shown to fall outside of the catchment for reservoir and waterbodies flooding.
Sewers			X		The site in question is higher than the surrounding sewers therefore there is a very low risk.
Pluvial runoff			X		No areas of the site are at risk of pluvial flooding.
Effect of Development on Wider Catchment			X		The impermeable area of the site is being altered.

Table 2.1 - Pre-Mitigation Sources of Flood Risk

2.1 FLUVIAL FLOOD RISK

The Environment Agency Product 4 data (Mearley Brook 2018 model) confirms that the site is hydraulically linked to the adjacent watercourse and is affected by modelled flood extents during the 1% AEP and 1% AEP + climate change events.

Modelled node data closest to the site (Nodes 1–5) indicate flood levels in the order of:

- 1% AEP: circa 82.7m to 83.4m AOD
- 1% AEP + climate change: circa 83.1m to 84.2m AOD

The detailed flood extent mapping confirms that floodwaters extend into the southern and central parts of the site during these events.

The flood mechanism is associated with exceedance of channel capacity within Mearley Brook, consistent with recorded historic flood events in 1999, 2007 and 2016 within the wider catchment.

On this basis, fluvial flood risk to the site is classified as high, and the development must be designed to remain safe for its lifetime, including climate change.

2.2 GROUNDWATER FLOOD RISK

The Environment Agency mapping indicates that the site is not located within an area at significant risk of groundwater flooding.

While no site-specific groundwater monitoring data is available, the local geology and absence of recorded historic groundwater flooding suggest that groundwater emergence at the surface is unlikely.

Groundwater flood risk is therefore considered to be low and does not constrain the proposed development.

2.3 FLOOD RISK FROM RESERVOIRS & LARGE WATERBODIES

Reservoir failure flood risk mapping has been prepared by the Environment Agency; this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst-case scenario and is only intended as a guide. An extract from the mapping is included as Figure 2.3.

Figure 2.3 - Environment Agency Reservoir Failure Flood Risk Map

Reservoir flood risk mapping indicates that the site is outside any mapped reservoir inundation extents. Access and egress routes are similarly unaffected.
Given the residual and extreme nature of reservoir failure scenarios, no specific mitigation is required.

As such, there is considered to be no risk from reservoir flooding.

2.4 FLOOD RISK FROM SEWERS

Flooding from public sewers typically occurs during extreme rainfall events when capacity is exceeded.

The site is not located within a known sewer flooding hotspot, and local topography indicates that the site sits above surrounding carriageways and drainage corridors.

The risk of flooding from sewers is therefore considered low.

2.5 PLUVIAL FLOOD RISK

Risk of flooding from surface water mapping has been prepared by the Environment Agency, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. An extract from the mapping is included as Figure 2.5.

Figure 2.5 - Risk of Flooding from Surface Water Mapping

Environment Agency Risk of Flooding from Surface Water mapping indicates that no areas of the site are subject to surface water flood risk during extreme rainfall events.

Finished floor levels remain above surrounding ground levels, and exceedance flows are able to route safely around buildings without posing a hazard to occupants.

Surface water mapping indicates limited direct pluvial risk to the site; however, it is recognised that such mapping is derived from LiDAR-based modelling and does not account for existing drainage infrastructure or localised exceedance pathways.

As such, a precautionary approach has been adopted whereby exceedance flows are assumed to route toward the adjacent watercourse corridor.

2.6 EFFECT OF DEVELOPMENT ON WIDER CATCHMENT

2.6.1 Development Drainage

The proposed development does increase the extent of impermeable area and has the potential to increase surface water runoff if unmanaged.
The site currently benefits from a surface water drainage system installed by the owner to manage historic runoff. This feature shows that surface water management has been proactively addressed.

The proposed development will build upon this existing system incorporating attenuation, controlled discharge and exceedance routing for the new additional runoff.

Post-development runoff rates and volumes will be managed to ensure no increase in flood risk occurs on-site or off-site.

2.7 CLIMATE CHANGE CONSIDERATIONS

Climate change impacts have been assessed using Environment Agency modelled outputs, including defended climate change scenarios within the Product 4 dataset .

The modelled data indicates an increase in flood levels of approximately 0.3m to 0.8m between the 1% AEP and 1% AEP + climate change events at locations adjacent to the site.

The development has therefore been assessed against the 1% AEP + climate change scenario as the design flood event.

This ensures compliance with the National Planning Policy Framework requirement that development remains safe for its lifetime, taking account of climate change.

2.8 MODELLED FLOOD LEVELS

The Product 4 model outputs provide detailed node-based flood level data across the site. The closest nodes to the development indicate peak levels of approximately 83.3m AOD (1% AEP) increasing to approximately 84.2m AOD under climate change conditions.

These levels have been used to inform finished floor levels and mitigation design.

3.0 FLOOD RISK MITIGATION

The site is located within Flood Zone 3 and is subject to modelled fluvial flood risk; therefore, a robust and proportionate package of mitigation measures is required to ensure the development is safe for its lifetime.

Section 2.0 has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be considered within the proposed development detail design to address and reduce the risk of flooding to within acceptable levels.

3.1 SITE ARRANGEMENTS

3.1.1 Sequential Arrangement

The development will incorporate a comprehensive package of flood risk mitigation measures addressing the flood risk posed from fluvial and tidal sources.

Given the proximity of the development to Mearley Brook, the structure should incorporate flood resistant and resilient construction techniques, including:

- Reinforced concrete floor slab construction
- Dense concrete blockwork or engineering brick up to at least 600 mm above predicted flood levels
- Cement-based internal finishes rather than gypsum plaster
- Raised electrical sockets and plant equipment above predicted flood levels
- Flood-resistant doors where appropriate
-

These measures reduce damage and allow rapid recovery should flooding occur.

The development layout should ensure that overland flood flows along the brook corridor remain unobstructed.

The extension should therefore:

- Avoid narrowing the floodplain corridor adjacent to the watercourse
- Maintain existing ground level gradients where possible
- Avoid perimeter walls or fencing that could impede flood flows

This ensures floodwaters can continue to pass through the site without increasing flood levels elsewhere.

Due to the entirety of site being located within Flood Zone 2 & 3, a Flood Evacuation Plan has been contained in Appendix C, detailing the actions to be taken in the event of a flood.

3.1.2 Finished Levels

Finished floor levels for the proposed extension have been considered in the context of the existing building, which will be retained and extended.

It is not considered practicable to raise finished floor levels of the extension significantly above the existing Unit 12 floor level, as this would result in internal level discrepancies, operational inefficiencies and potential accessibility issues.

The existing building is already established within the floodplain and therefore the proposed development does not introduce a new vulnerability but extends an existing use.

Notwithstanding this, Environment Agency Product 4 data indicates that modelled flood levels in the vicinity of the site reach approximately 84.2m AOD during the 1% AEP + climate change event.

Where finished floor levels cannot be set above this level plus an appropriate freeboard allowance (typically 600mm), a strategy of flood resilience and resistance measures will be implemented.

These measures will be designed to provide resistance to flood ingress and facilitate rapid recovery up to a minimum level of 1% AEP + climate change + 600mm and will include:

- Flood resistant construction materials (e.g. concrete floors, engineering brick/blockwork)
- Raised electrical services and plant equipment
- Use of water-resistant internal finishes
- Sealing of service penetrations
- Provision of demountable flood barriers where appropriate

This approach accords with Planning Practice Guidance, which recognises that for extensions to existing buildings within flood risk areas, resilience measures may be appropriate where raising finished floor levels is not feasible.

On this basis, the development will remain safe for its lifetime without increasing flood risk elsewhere.

3.2 SAFE ACCESS & EGRESS

Safe access and egress has been assessed with reference to Environment Agency hazard guidance and the modelled flood extents.

Twin Brook Road is shown to be partially affected by flood extents during the 1% AEP and climate change events; however, flood depths are anticipated to remain shallow in the vicinity of the site access.

In the event of flooding, occupants will be able to:

- Access higher ground to the north of the site beyond mapped flood extents
- Utilise flood warning systems to evacuate prior to onset of flooding

Given the 'Less Vulnerable' classification of the development and the availability of flood warning, safe access and egress is considered acceptable.

A Flood Emergency Plan is included at Appendix C.

3.3 FLOOD WARNING & EMERGENCY PLANNING

The site lies within an area at risk of fluvial flooding and is therefore expected to benefit from Environment Agency Flood Alert and/or Flood Warning services associated with Mearley Brook.

Given the high probability of flooding and absence of deep or fast-flowing floodwater, a site-specific Flood Emergency Plan is considered necessary.

Building users will benefit from standard operational procedures, including awareness of severe weather forecasts and appropriate response during extreme rainfall events.

Therefore, all occupiers should register for the Flood Warning line at 0345 988 1188 to be notified prior to a flood event at the site.

3.4 RESIDUAL RISK & EXCEEDANCE ROUTING

Residual flood risk relates to flooding that may occur during events exceeding the design standard of drainage infrastructure.

In such exceedance scenarios, surface water would be routed along existing overland flow paths and across external areas of the site, away from buildings and access points. Finished floor levels remain above predicted exceedance depths, ensuring no internal flooding occurs. This approach accords with good practice and the National Standards for Sustainable Drainage Systems.

Residual risks associated with defence failure or blockage are inherently accounted for within the undefended modelling scenarios presented within the Product 4 dataset, which form the basis of this assessment.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of A V Town Planning Ltd.

This Flood Risk Assessment demonstrates that the proposed development is appropriate for its location and will be safe for its lifetime, taking account of climate change.

The Environment Agency Product 4 data confirms that the site is located within Flood Zone 3 and is affected by modelled fluvial flood extents during the 1% AEP and 1% AEP + climate change events.

Notwithstanding this, the proposed development is classified as 'Less Vulnerable' and is therefore appropriate in principle subject to the implementation of mitigation measures. The development has been designed to:

- Remain safe for its lifetime, including climate change
- Not increase flood risk elsewhere
- Maintain floodplain conveyance

On this basis, the development is compliant with the NPPF and PPG and there are no flood risk grounds to resist the application.

The identified risks and mitigation measures are summarised within Table 4.1.

Flood Source	Proposed Mitigation Measure
Fluvial	Site is shown to be in Flood Zone 2 & 3.
Impact of the Development	Strategic surface water drainage strategy prepared for wider development will ensure a sustainable approach to surface water management.

Table 4.1 - Summary of Flood Risk Assessment

The Flood Risk Assessment demonstrates full compliance with national and local flood risk policy and confirms that the development will be safe for its lifetime, without increasing flood risk elsewhere. The proposals are therefore acceptable in flood risk terms.

5.0 APPENDICES

Appendix A – Site Location Plan

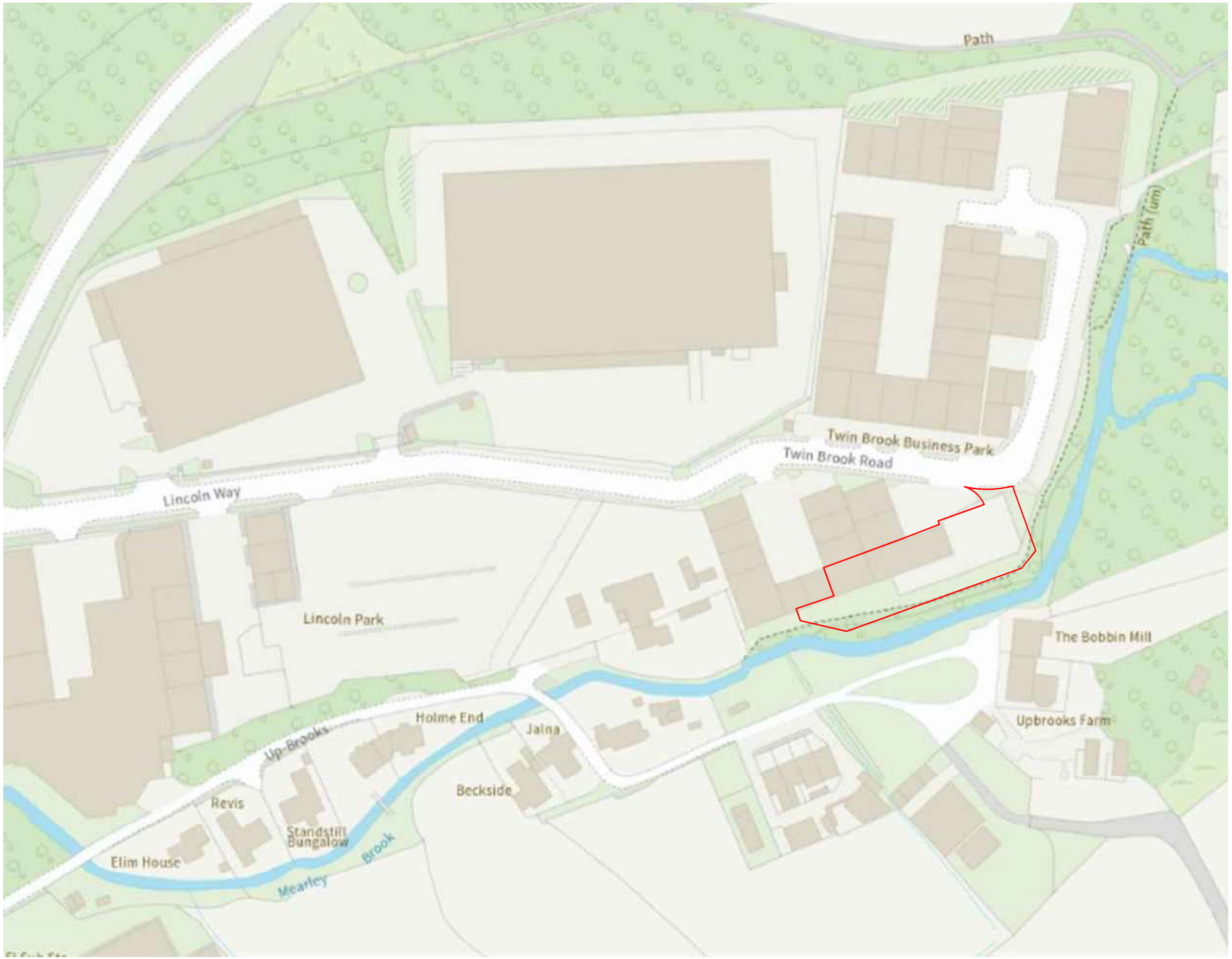
Appendix B – Proposed Site Layout

Appendix C – Flood Evacuation Plan

Appendix D – EA Flood Data

Appendix A

Site Location Plan



Notes:

All work is to be carried out to the latest current British standards Codes of Practice and recognised working practices.

All work and materials should comply with Health and Safety legislation.

All work and materials to be approved by the District Authority Planning & Building Control Officer.

All dimensions are in millimetres unless where explicitly shown otherwise.

The contractor should check and certify all dimensions as work proceeds and notify the architect of any discrepancies.

Do not scale off the drawings, if in doubt ask.

The designer is in no way liable for work undertaken prior to full Planning Consent and/or Building Regulations Approval

Title: Twin Brook Rd,
Lincoln Way,
Clitheroe.
BB7 1QX

LOCATION PLAN

BUILDING ELEMENTS LTD
Town Planning and Architecture
Duckpond Farm Cottage,
Moorgate Rd,
Barnoldswick,
Lancs, BB18 5SQ
M: 0797 658 7694

Project No:Alpe 31 Dwg 05	**Drawn: DP**
Client: James Alpe	
Date: 26/02/26	**Scale: 1:1250 @ A3**

Appendix B

Proposed Site Layout

Notes:

All work is to be carried out to the latest current British standards Codes of Practice and recognised working practices.

All work and materials should comply with Health and Safety legislation.

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SITE PLAN

BUILDING ELEMENTS LTD
Town Planning and Architecture
Duckpond Farm Cottage,
Moorgate Rd,
Barnoldswick,
Lancs, BB18 5SG
M: 0797 658 7694

Project No:Alpe 31 Dwg 08	Drawn: DP
Client: James Alpe	
Date: 26/02/26	Scale: 1:500 @ A3

Appendix C

Flood Evacuation Plan

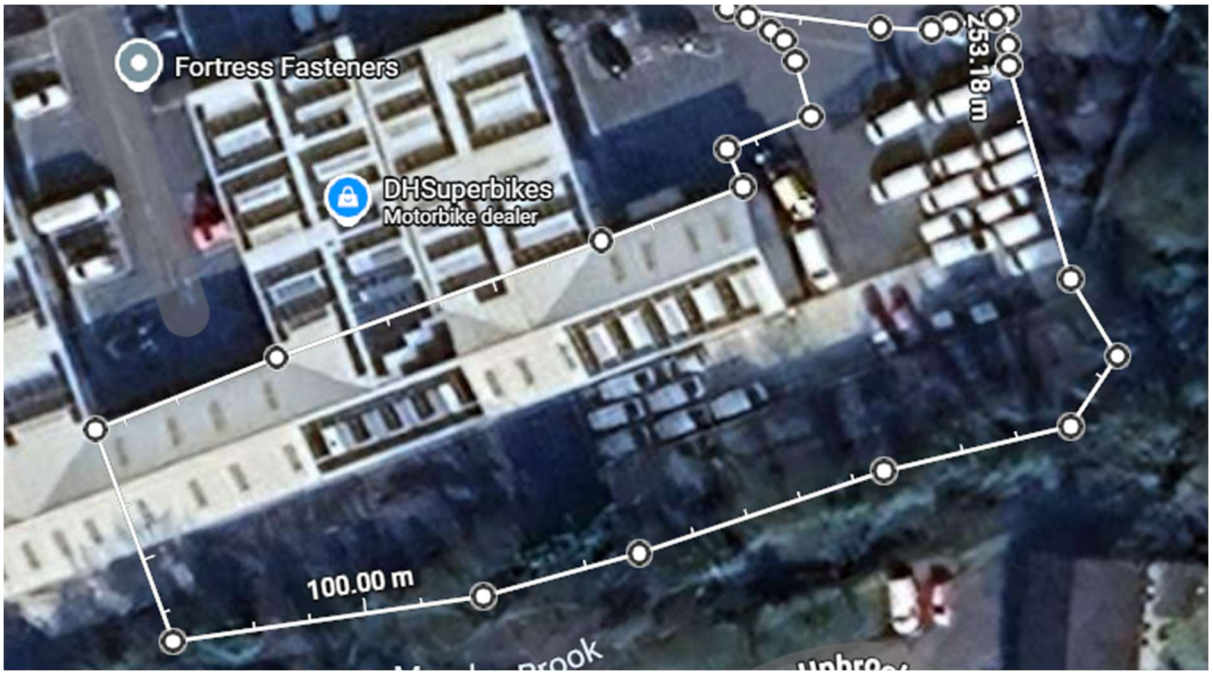
FLOOD EVACUATION PLAN

26085 Proposed Industrial Extension, Unit 12 Twin Brook Road, Clitheroe BB7 1QX

Introduction

The objective of this plan is to raise awareness of the risk of flooding onsite to residents, to detail the Flood Warnings and estimated lead time available, and to detail how the Plan is triggered by who and when, and what actions are required by those people in the area.

The Plan describes the evacuation procedure and need for safe refuge. The location covered by this Plan is shown below:



Flood Risk

The location covered by this Plan is at risk from flooding from nearby watercourses and 7 is covered by the Environment Agency (EA) Flood Warning System.

The majority of site lies within Flood Zone 2 and 3 (medium/high probability of flooding) on the Environment Agency Flood Map for Planning and the proposal is the extension of a industrial unit, which is classed as a 'Less vulnerable' development in Table 2: Flood Risk Vulnerability Classification of the Planning Practice Guidance (PPG): Flood Risk and Coastal Change.

Flood Warnings

The EA operate a flood forecasting and warning service in areas at risk of flooding from rivers or the sea, which relies on direct measurements of rainfall, river levels, tide levels, in-house predictive models, rainfall radar data and information from the Met Office. This service operates 24 hours a day, 365 days a year.

If flooding is forecast, warnings are issued using a set of easily recognisable codes. A description of the codes is shown in Appendix 1.

Flood Register

Floodline Warnings is a free service operated by the EA that provides flood warnings direct to you by phone, email or text message. Sign up for Flood Warnings by calling Floodline on 0345 988 1188 or online by following the link included in appendix 2.

The future occupiers will be responsible for activating this plan and will register with the EA Flood Warnings Service and should receive a warning through this system

Estimated Flood Warning Time

For this location the estimated lead time provided by the EA is 2-3 days, however 1-2 hours lead time is guaranteed. A more accurate estimation will be provided when the warning is made.

Decision Making

Once a Flood Warning has been received residents will need to decide what actions they or others now have to take.

If immediate flooding is forecast and the opportunity to safely evacuate is gone, pre-emptive flood protection tasks must be implemented (if time allows) and the order given for moving to the area of safe refuge, see below.

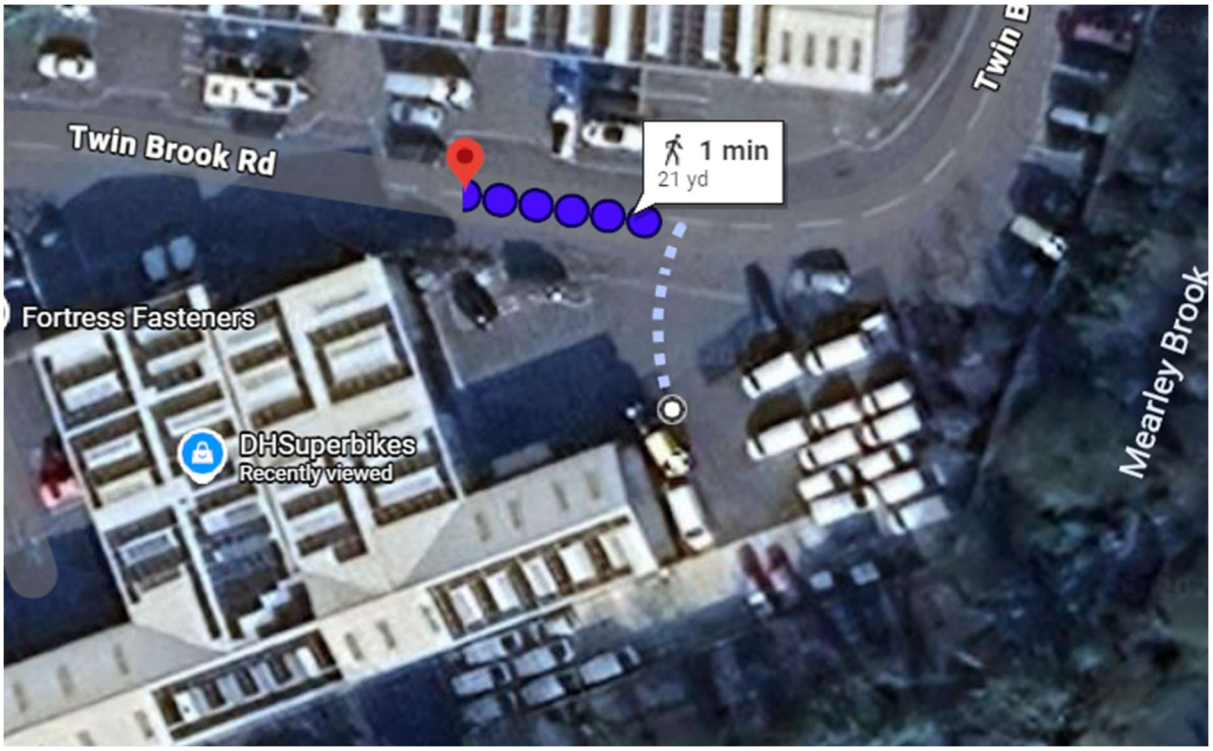
The decision regarding evacuation will be made by the future property owners on receipt of the flood warning notification from the EA.

Response Actions / Considerations

Site Evacuation Procedures & Routes

In the event of a flood, the site access will become flooded as it is in Flood Zone 3. The site access Is located off of Twin Brook Road. The right area is located within Flood Zone 2 and 3, however the left side is located within Flood Zone 1. Therefore, in the event of a flood it is proposed that occupiers should leave the site and head left on Twin Brook Road until they are out of the Flood Zone (as shown below). The Flood Warning Line previously mentioned, should allow enough lead time for occupiers to evacuate the site to the specified safe point of refuge.

Also, the floor level is going to be set minimum between 300mm to 600mm above the modelled 1% AEP + CC flood levels therefore they would also be a safe point of refuge in a flooding event.



The EA Flood Warning Line will be implemented to give occupiers a sufficient amount of time to reach the safe point of refuge, in this case the first floor of the building.

However, due to the implementation of the Flood Warning Line, safe evacuation may be possible as the warning gives sufficient lead time to exit the site prior to the floods, with the site access being within Flood Zone 3.

Reoccupation of The Site

There may well be environmental hazards, loss of utilities and other such issues, which may have to be rectified before people are allowed back to premises. However, the flood resilient design of the building will mitigate against potential damage.

Training & Exercising

All individuals who stay in the building will be made aware of this plan and briefed accordingly.

This Plan should form part of the Deeds of the land/property.

Document Control

This Plan is owned, maintained, and updated by the property owners. All users are asked to keep the plan updated if changes in circumstances occur that may materially affect the plan in any way.

The plan will be reviewed at least every three years, as a result of lessons identified after an activation event or exercise, following changes ownership of the property or following any change to the flood risk or warning process that is used by the Environment Agency.

It has also been requested that these documents long with the web addresses for them should be provided to the occupants, so they are aware of local flood risk and the appropriate actions to take.

Weather Warning Guide	https://www.metoffice.gov.uk/weather/guides/warnings
EA Live Flood Alert information	https://check-for-flooding.service.gov.uk/alerts-and-warnings
Guide to email alert service	https://www.metoffice.gov.uk/about-us/guide-to-emails
5-day flood risk for England and Wales	https://check-for-flooding.service.gov.uk/?v=map-outlook
Severe Weather Warning Service including weather warning impacts and what they mean	https://www.metoffice.gov.uk/weather/guides/severe-weather-advice
Met Office Live Severe Weather Warnings	https://www.metoffice.gov.uk/weather/warnings-and-advice/uk-warnings#?date=2022-12-15

Appendix 1 - Environment Agency Warning Codes

Flood Alert

Key Message: Flooding is possible. Be prepared
Timing: 2 hours to 2 days in advance of flooding
Actions: Be prepared for flooding
Prepare a flood kit of essential items
Monitor local water levels and flood forecasts

Flood Alerts are to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and to make early preparations for flooding.

Flood Warning

Key Message: Flooding is expected. Immediate Action Required
Timing: Half an hour to 1 day in advance of flooding
Actions: Act now to protect your property
Block doors with flood boards or sandbags and cover airbricks and other ventilation holes
Move family, pets and valuables to a safe place
Turn off gas, electricity and water supplies if safe to do so
Keep a flood kit ready
Move cars, pets, food, valuables and important documents to safety

Flood Warnings are to warn people flooding is expected and encourage them to take immediate action to protect themselves and their property.

Severe Flood Warning

Key Message: Severe flooding. Danger to life
Timing: When flooding poses a significant threat to life and different actions are required
Actions: Stay in a safe place with a means of escape
Be ready should you need to evacuate from your home
Co-operate with the emergency services
Call 999 if you are in immediate danger

Severe Flood Warnings are to warn people of a significant risk to life or significant disruption to communities caused by widespread or prolonged flooding, and encourage them to take immediate action to protect themselves and follow the advice of the emergency services.

Warnings no longer in force

(no icon)

Key Message: No further flooding is currently expected for your area
Timing: When river or sea conditions begin to return to normal
Actions: Be Careful. Flood water may still be around for several days and could be contaminated
If you've been flooded, ring your insurance company as soon as possible

Warnings are removed to inform people that the threat has now passed.

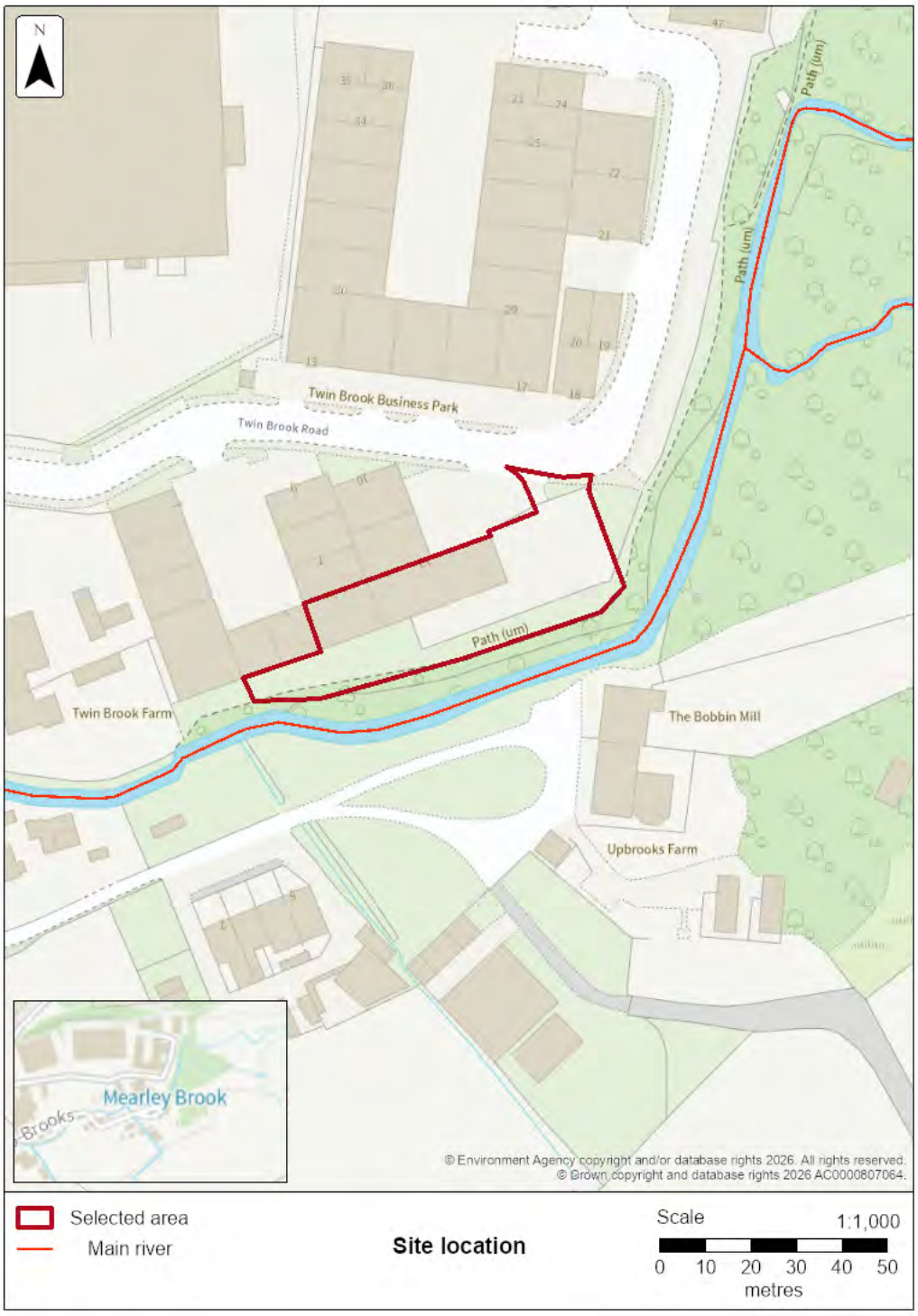
Appendix D

EA Flood Data

Flood risk assessment data

Location of site: 375489 / 442281 (shown as easting and northing coordinates)
Document created on: 25 March 2026
This information was previously known as a product 4.
Customer reference number: 5WKX4TNX1XJC

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

Surface water and other sources of flooding

When using the surface water map on the check your long term flood risk service the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also 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 SFRA, which includes future flood risk

Your Lead Local Flood Authority is Lancashire County.

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

About the models used

Model name: Mearley Brook 2018
Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial
Date: 1 December 2017

This model contains 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 3.

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)
375489/442281

Scale
1:10,000

Created
25 Mar 2026

- Selected area
- Main river
- Flood defence
- 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 Lancashire 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)
375489/442281

Scale
1:10,000

Created
25 Mar 2026

- Selected area
- Main river

Date of flood event

- August, 2016
- July, 2007
- September, 1999

0 100 200 300 400 500
metres

Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
22 August 2016	23 August 2016	main river	channel capacity exceeded (no raised defences)	No
3 July 2007	4 July 2007	ordinary watercourse	obstruction/blockage - culvert	No
29 September 1999	30 September 1999	main river	channel capacity exceeded (no raised defences)	No

Flood defences and attributes

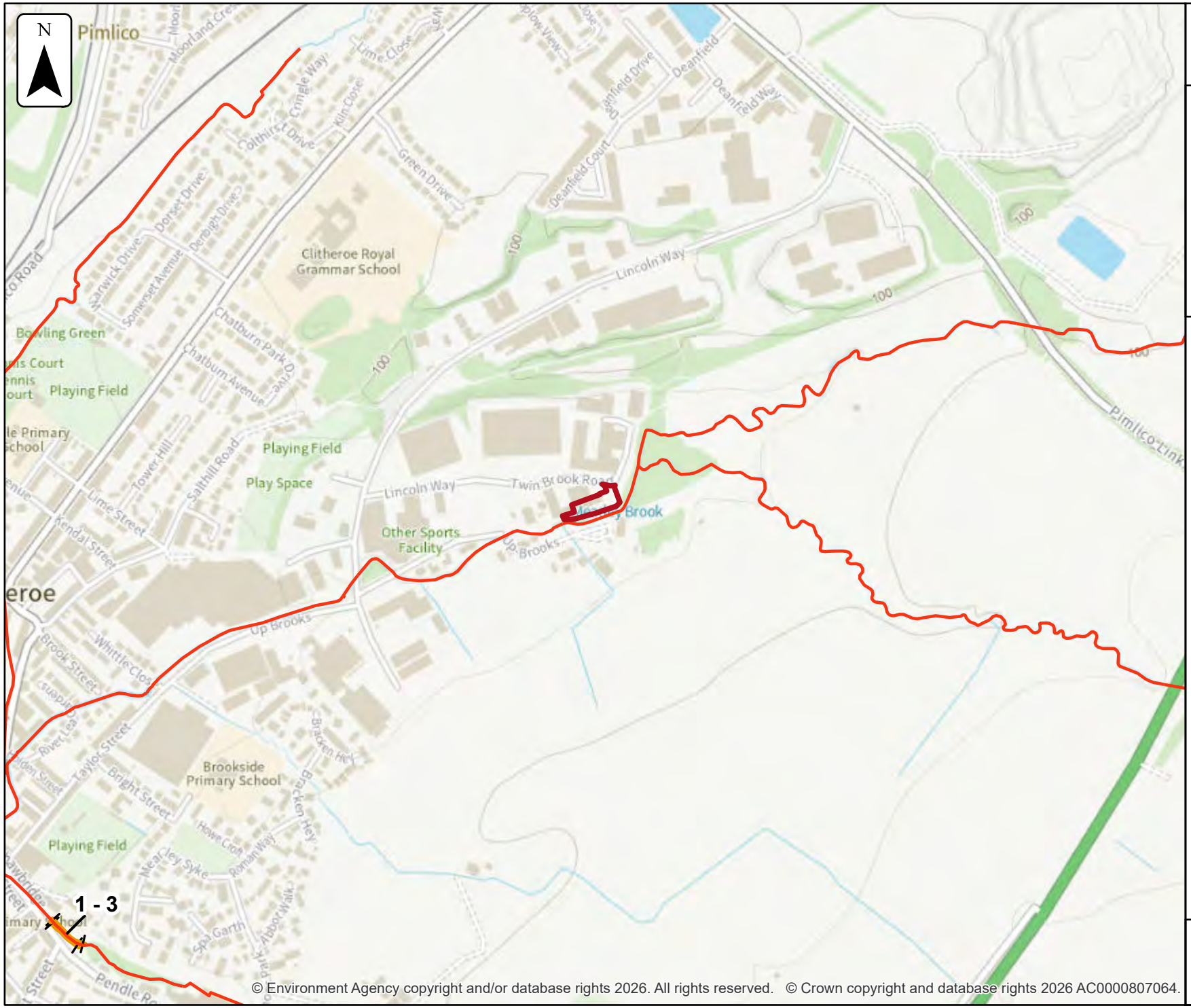
The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is In mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk



Environment Agency

Flood defences

Location (easting/northing)
375489/442281

Scale
1:7,500

Created
25 Mar 2026

- Selected area
- Main river
- Flood defence

0 100 200 300
metres

Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	536674	Flood Gate		Good	77.10	77.10	77.10
2	148786	Wall	10	Fair	78.25	79.30	78.25
3	150181	Engineered High Ground	10		78.10	79.90	78.10

Any blank cells show where a particular value has not been recorded for an asset.

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

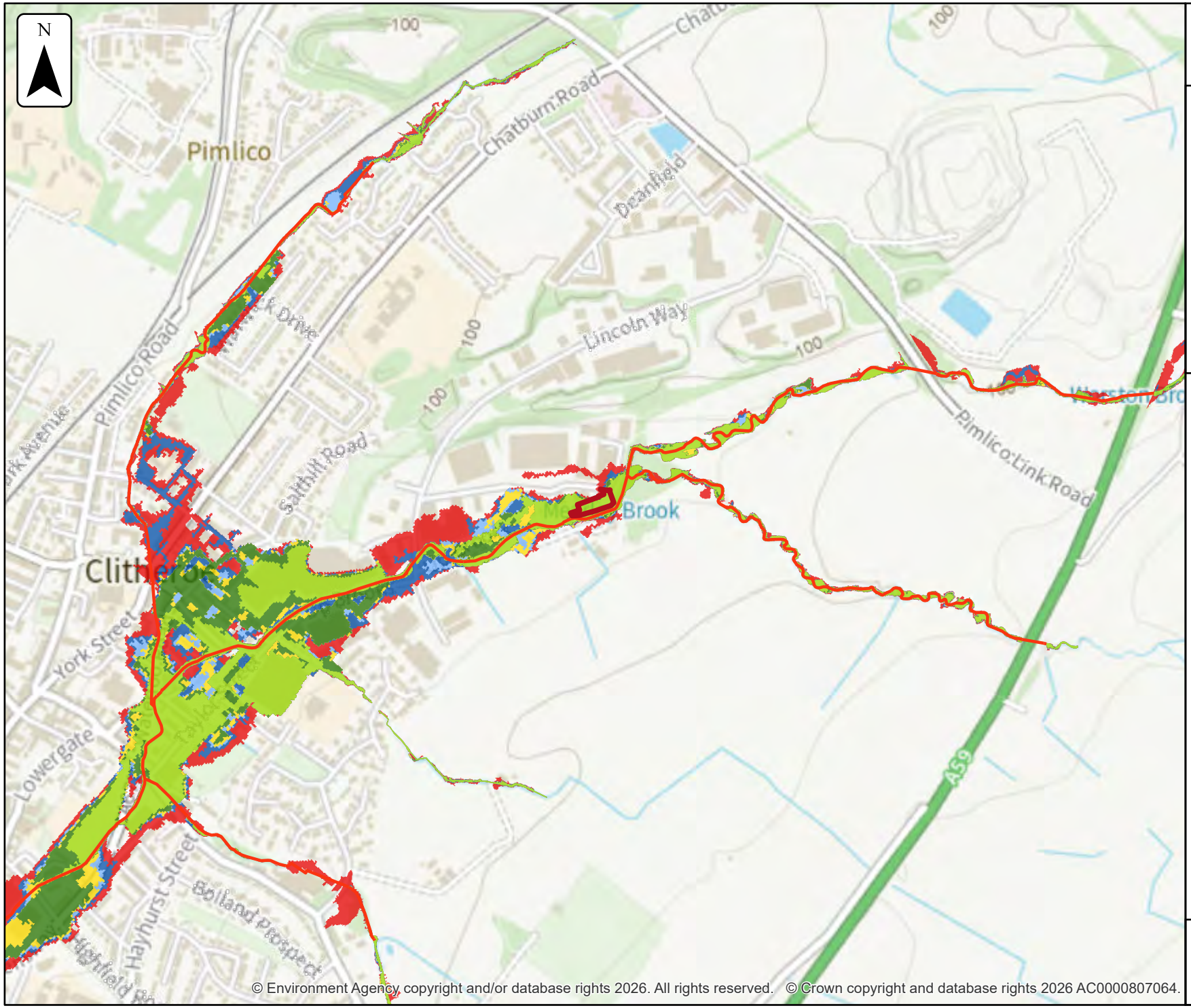
The climate change data included in the models may not include the latest flood risk assessment climate change allowances. Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change



Environment Agency

Defended modelled fluvial extent

Location (easting/northing)
375489/442281

Scale
1:10,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

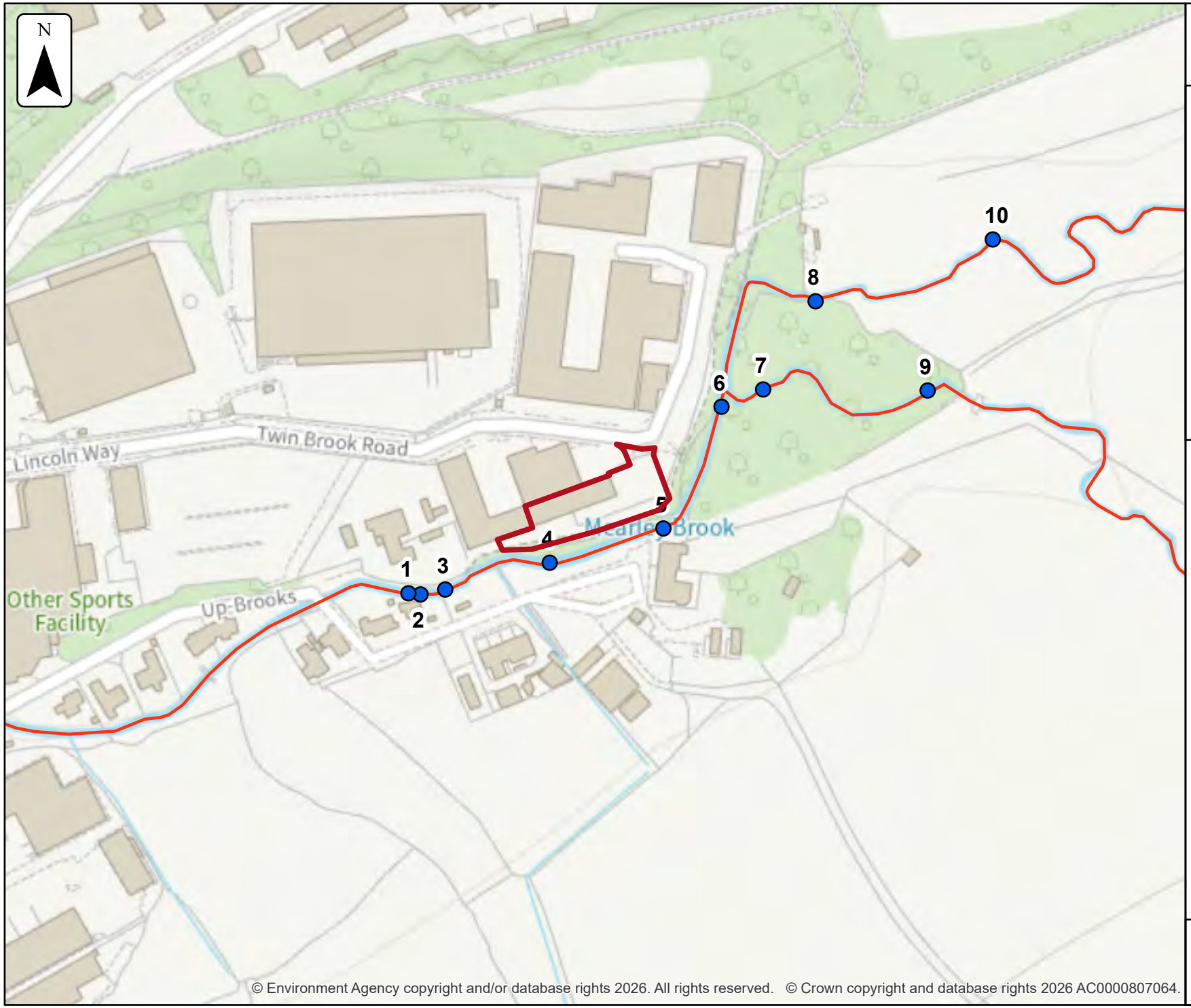
- Selected area
- Main river

Modelled flood extent

- 5% AEP
- 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)
375489/442281

Scale
1:2,500

Created
25 Mar 2026

Model name
Mearley Brook 2018

- Selected area
- Modelled location
- Main river

0 25 50 75 100
metres

Modelled node locations data

Defended

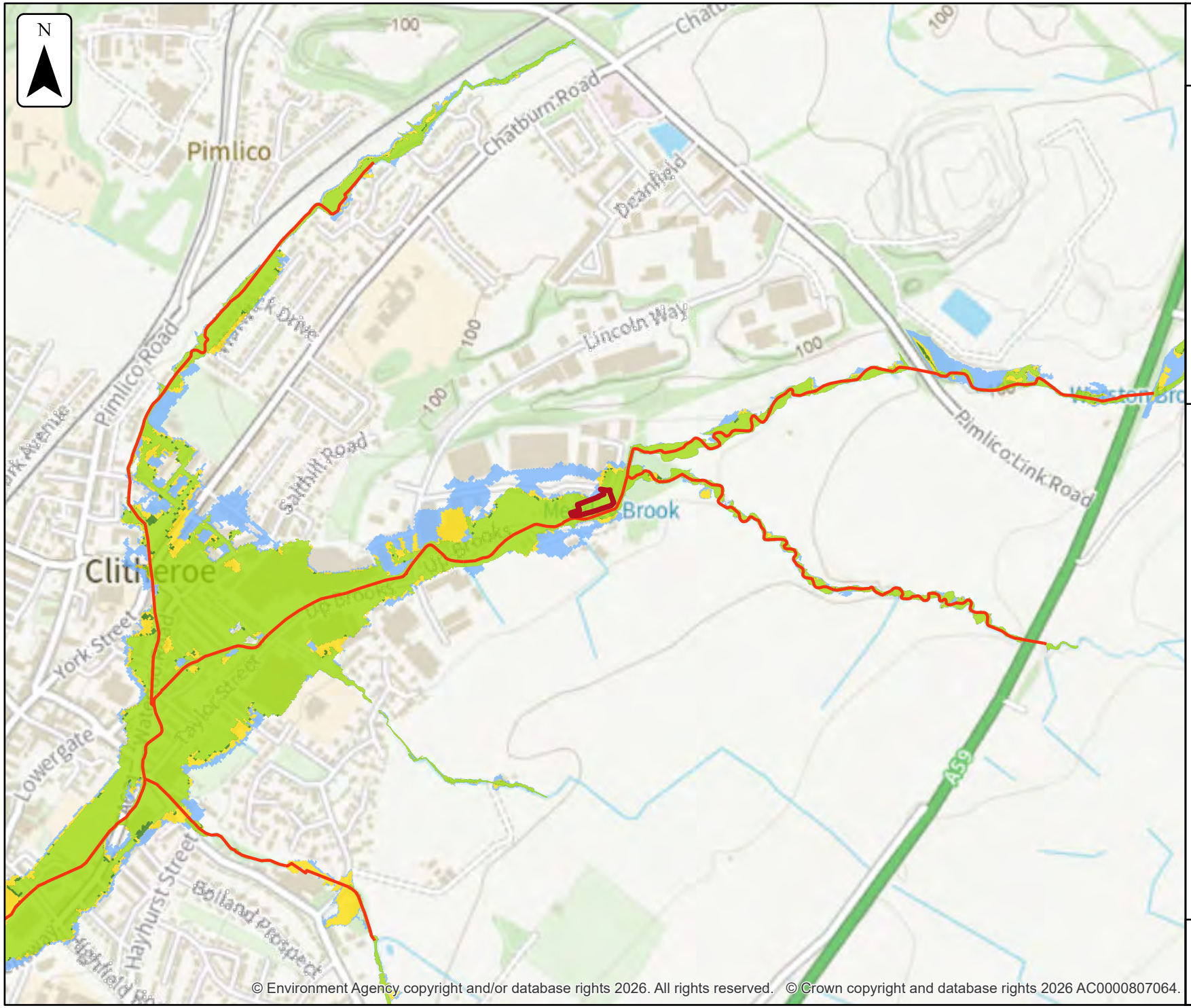
Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
1	982323	375398	442238	81.74	81.96	82.17	82.37	82.41	82.46	82.60	82.70	82.75	82.83	82.94
2	982260	375404	442237	81.83	82.07	82.31	82.49	82.54	82.58	82.72	82.82	82.88	82.98	83.20
3	982222	375416	442240	81.97	82.19	82.40	82.57	82.62	82.66	82.80	82.90	82.96	83.08	83.33
4	982288	375467	442253	82.73	82.89	82.97	83.08	83.12	83.15	83.24	83.31	83.35	83.44	83.64
5	982324	375522	442269	83.40	83.55	83.65	83.73	83.75	83.77	83.84	83.88	83.91	84.0	84.27
6	982268	375550	442329	84.35	84.53	84.63	84.67	84.68	84.69	84.71	84.72	84.73	84.78	84.94
7	982394	375571	442337	84.42	84.57	84.66	84.70	84.72	84.72	84.75	84.77	84.78	84.84	85.01
8	982391	375596	442380	85.05	85.17	85.22	85.26	85.28	85.29	85.33	85.36	85.39	85.47	85.66
9	982317	375651	442337	86.44	86.51	86.54	86.57	86.58	86.59	86.61	86.63	86.64	86.69	86.81
10	982313	375682	442410	86.71	86.78	86.80	86.84	86.85	86.86	86.90	86.93	86.95	87.01	87.14

Data in this table comes from the Mearley Brook 2018 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	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	982323	375398	442238	7.47	9.95	12.0	14.15	14.80	15.43	17.20	18.53	19.51	22.70	28.68
2	982260	375404	442237	7.47	9.94	11.95	14.05	14.68	15.30	17.17	18.45	19.28	21.73	26.75
3	982222	375416	442240	7.47	9.90	11.80	13.84	14.40	14.92	16.40	17.34	17.99	19.80	23.68
4	982288	375467	442253	7.36	9.73	11.54	13.48	14.07	14.63	16.35	17.67	18.76	22.23	32.50
5	982324	375522	442269	7.36	9.62	11.08	12.69	13.18	13.63	14.99	16.05	16.89	19.37	25.97
6	982268	375550	442329	7.36	9.80	11.74	13.76	14.40	15.03	17.04	18.57	19.82	23.68	35.85
7	982394	375571	442337	2.68	3.53	4.20	4.89	5.11	5.32	5.99	6.49	6.91	8.16	12.35
8	982391	375596	442380	4.69	6.35	7.56	8.89	9.32	9.74	11.06	12.13	12.98	15.51	24.50
9	982317	375651	442337	2.68	3.53	4.20	4.89	5.11	5.32	5.96	6.48	6.91	8.16	12.35
10	982313	375682	442410	4.69	6.37	7.56	8.89	9.32	9.74	11.07	12.13	12.99	15.51	24.50

Data in this table comes from the Mearley Brook 2018 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 extent

Location (easting/northing)
375489/442281

Scale
1:10,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

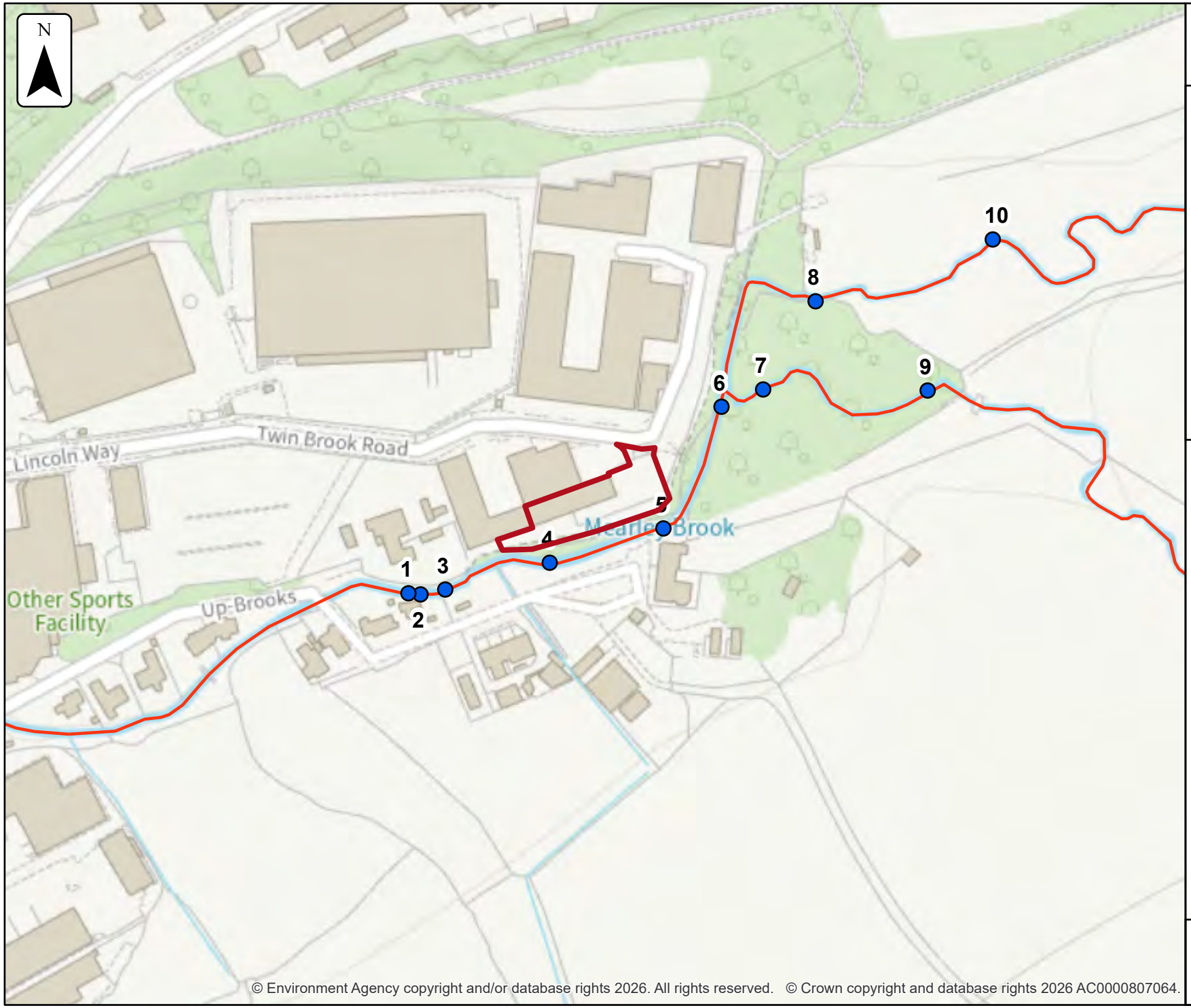
- Selected area
- Main river

Modelled flood extent

- 1% AEP (+30%)
- 1% AEP (+35%)
- 1% AEP (+70%)
- 0.1% AEP (+30%)

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 node locations

Location (easting/northing)
375489/442281

Scale
1:2,500

Created
25 Mar 2026

Model name
Mearley Brook 2018

- Selected area
- Modelled location
- Main river

0 25 50 75 100
metres

Modelled node locations data

Defended climate change

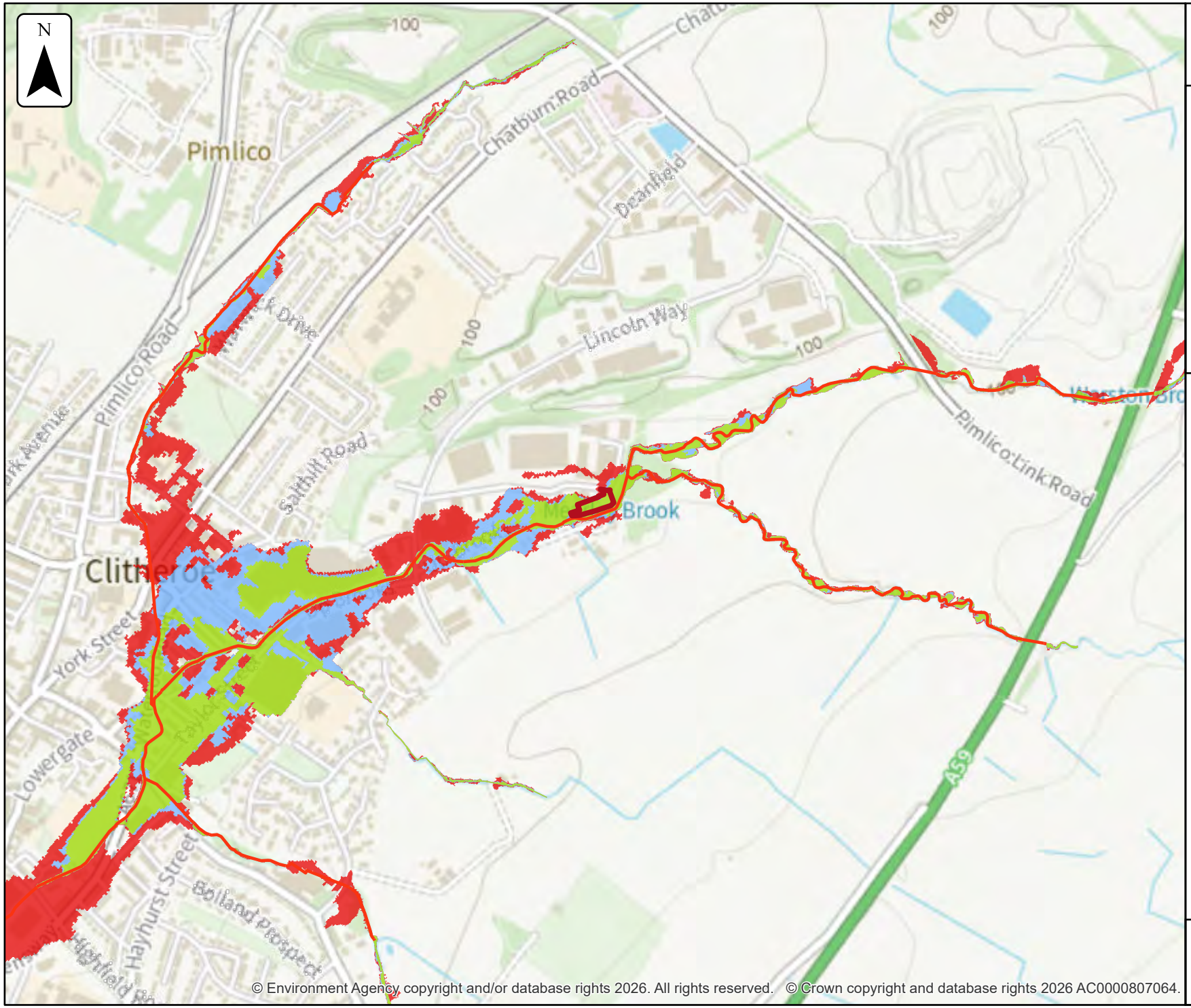
Label	Modelled location ID	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
				Level	Level	Level	Level
1	982323	375398	442238	82.86	82.86	82.92	82.99
2	982260	375404	442237	83.02	83.03	83.14	83.34
3	982222	375416	442240	83.12	83.14	83.26	83.47
4	982288	375467	442253	83.48	83.49	83.59	83.76
5	982324	375522	442269	84.05	84.07	84.20	84.42
6	982268	375550	442329	84.82	84.82	84.90	85.04
7	982394	375571	442337	84.87	84.88	84.96	85.11
8	982391	375596	442380	85.49	85.50	85.60	85.78
9	982317	375651	442337	86.71	86.72	86.78	86.88
10	982313	375682	442410	87.02	87.03	87.10	87.26

Data in this table comes from the Mearley Brook 2018 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	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
				Flow	Flow	Flow	Flow
1	982323	375398	442238	23.08	23.50	26.89	32.86
2	982260	375404	442237	22.24	22.59	25.34	30.06
3	982222	375416	442240	20.09	20.34	22.48	27.01
4	982288	375467	442253	23.67	24.29	29.55	39.48
5	982324	375522	442269	20.41	20.82	24.20	30.34
6	982268	375550	442329	25.50	26.24	32.38	44.64
7	982394	375571	442337	8.84	9.12	11.25	15.59
8	982391	375596	442380	16.99	17.43	21.79	31.39
9	982317	375651	442337	8.82	9.12	11.25	15.58
10	982313	375682	442410	16.99	17.43	21.79	31.39

Data in this table comes from the Mearley Brook 2018 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 extent

Location (easting/northing)
375489/442281

Scale
1:10,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

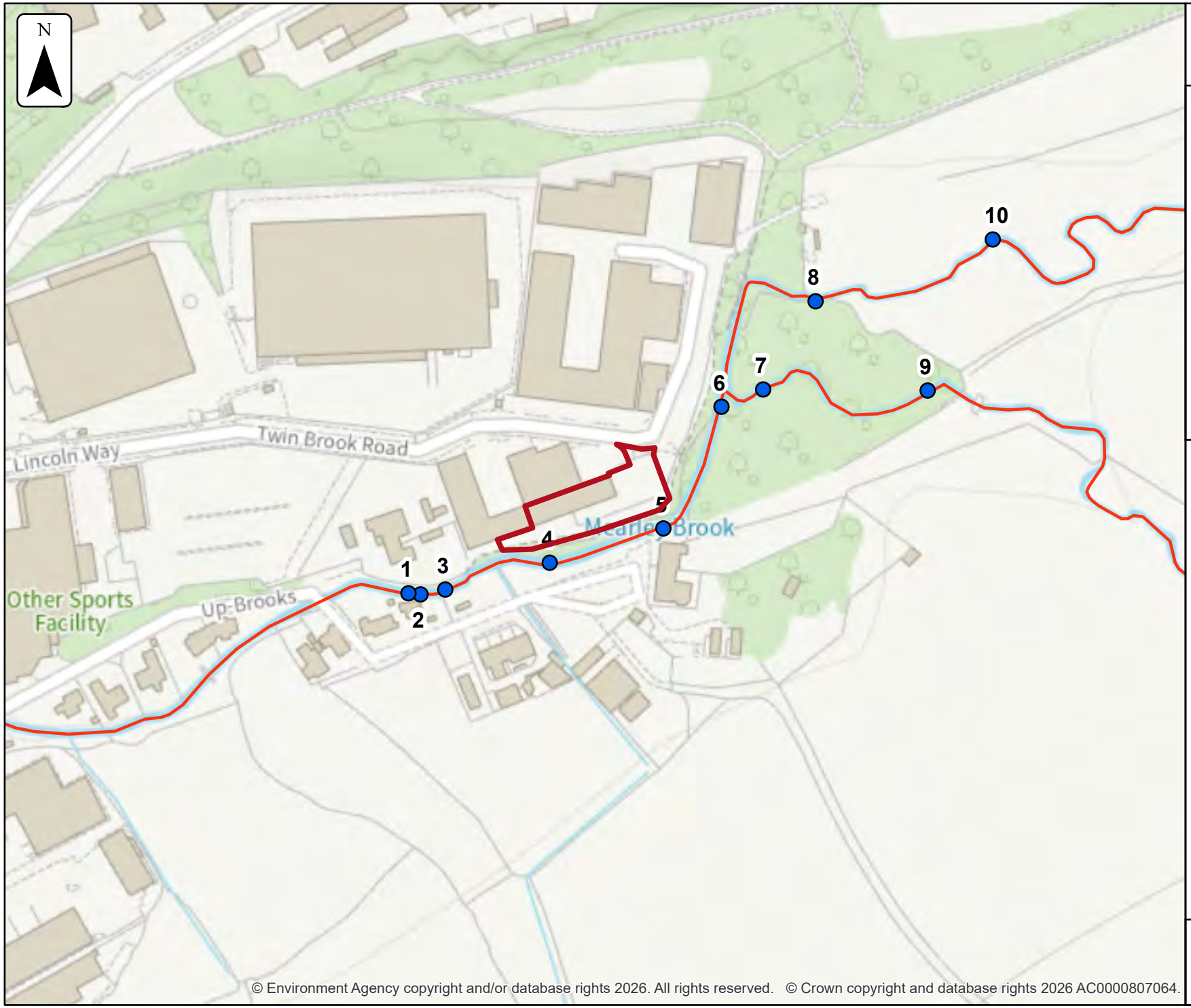
- Selected area
- Main river

Modelled flood extent

- 5% AEP
- 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

Defences removed modelled fluvial node locations

Location (easting/northing)
375489/442281

Scale
1:2,500

Created
25 Mar 2026

Model name
Mearley Brook 2018

- Selected area
- Modelled location
- Main river

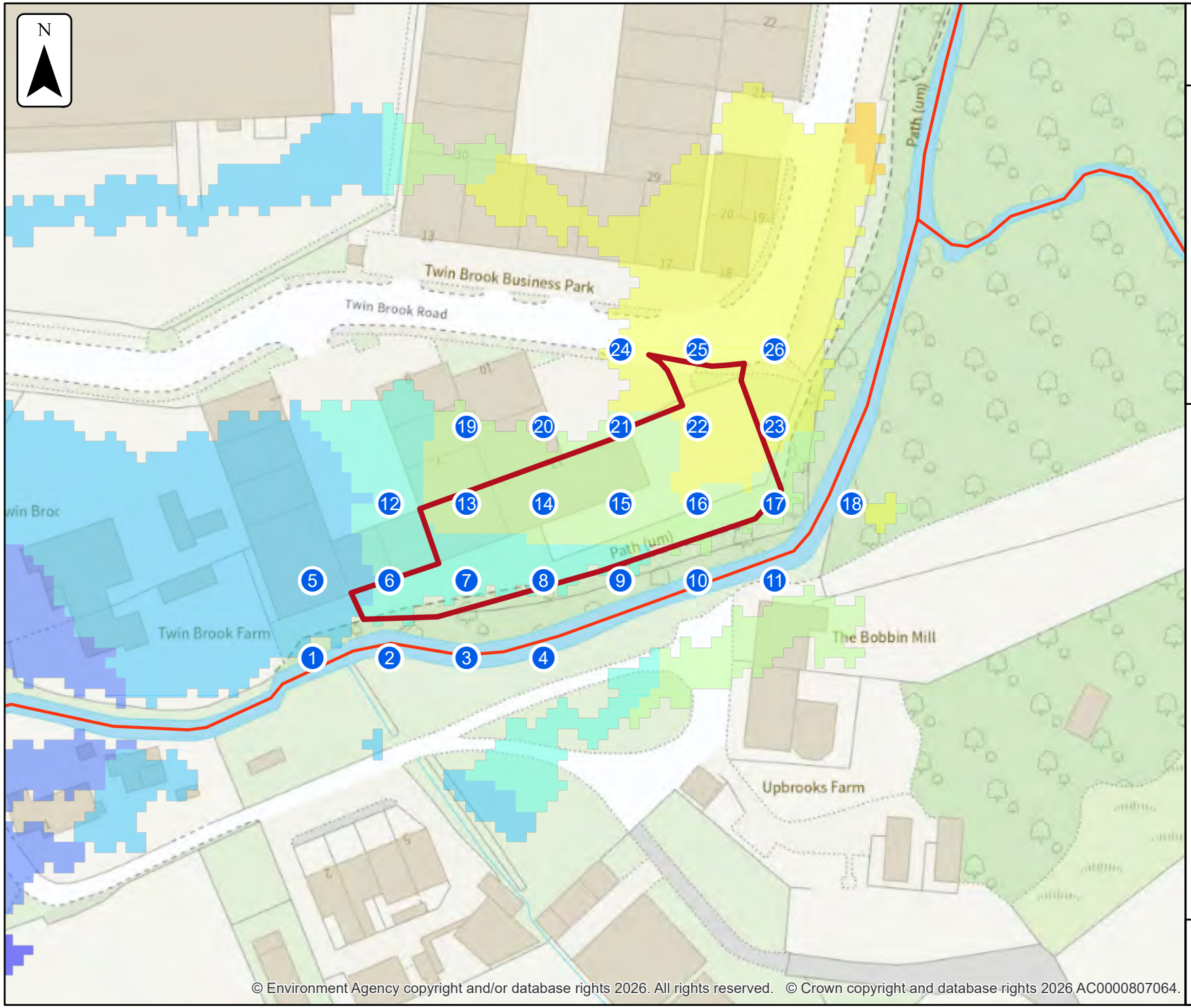
0 25 50 75 100
metres

Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	5% AEP	1% AEP	0.1% AEP	5% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Flow	Flow	Flow
1	982323	375398	442238	82.37	82.75	82.94	14.15	19.51	28.68
2	982260	375404	442237	82.49	82.87	83.20	14.05	19.28	26.75
3	982222	375416	442240	82.57	82.96	83.33	13.84	17.98	23.68
4	982288	375467	442253	83.08	83.35	83.64	13.48	18.76	32.49
5	982324	375522	442269	83.73	83.91	84.27	12.69	16.88	25.97
6	982268	375550	442329	84.67	84.73	84.94	13.76	19.82	35.85
7	982394	375571	442337	84.70	84.78	85.01	4.89	6.91	12.35
8	982391	375596	442380	85.26	85.39	85.66	8.89	12.98	24.50
9	982317	375651	442337	86.57	86.64	86.80	4.89	6.91	12.35
10	982313	375682	442410	86.84	86.95	87.14	8.89	12.99	24.50

Data in this table comes from the Mearley Brook 2018 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 modelled fluvial extent and height

Location (easting/northing)
375489/442281

Scale
1:1,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 82 - 82.5
- 82.5 - 83.0
- 83.0 - 83.5
- 83.5 - 84.0
- 84.0 - 84.5
- 84.5 - 85.0
- 85.0 - 85.5
- 85.5 - 86.0
- 86.0 - 86.5

This map shows the 0.1% AEP height data

0 10 20 30 40
metres

Sample point data

Defended

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
1	375434	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	375449	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	375464	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	375479	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	375434	442266	NoData	NoData	83.06	83.06	83.07	83.08	83.08	83.10	83.19	83.43
6	375449	442266	NoData	83.28	83.29	83.29	83.29	83.29	83.30	83.31	83.36	83.53
7	375464	442266	NoData	83.61	83.61	83.61	83.61	83.62	83.62	83.62	83.62	83.69
8	375479	442266	NoData	83.70	83.70	83.70	83.70	83.70	83.70	83.70	83.70	83.79
9	375494	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	375509	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	375524	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	375449	442281	NoData	83.76	83.77	83.78	83.78	83.80	83.81	83.82	83.86	84.00

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
13	375464	442281	83.76	83.81	83.84	83.85	83.86	83.88	83.90	83.92	83.96	84.10
14	375479	442281	83.77	83.84	83.88	83.89	83.90	83.93	83.94	83.96	84.00	84.13
15	375494	442281	83.88	83.94	83.99	84.00	84.02	84.05	84.07	84.10	84.17	84.37
16	375509	442281	83.91	83.98	84.02	84.03	84.04	84.08	84.10	84.12	84.18	84.35
17	375524	442281	83.87	83.89	83.90	83.90	83.90	83.92	83.96	83.99	84.07	84.32
18	375539	442281	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	84.58
19	375464	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	84.07
20	375479	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	375494	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	84.46
22	375509	442296	NoData	84.08	84.11	84.11	84.13	84.17	84.20	84.22	84.29	84.52
23	375524	442296	84.00	84.08	84.14	84.15	84.17	84.21	84.24	84.26	84.33	84.55
24	375494	442311	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	84.68

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
25	375509	442311	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	84.44	84.64
26	375524	442311	84.06	84.17	84.24	84.25	84.27	84.31	84.34	84.36	84.44	84.65
Max value in selected area:			84.03	84.16	84.21	84.23	84.24	84.29	84.32	84.34	84.43	84.64

Data in this table comes from the Mearley Brook 2018 model. Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	375434	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	375449	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	375464	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	375479	442251	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	375434	442266	NoData	NoData	0.03	0.04	0.04	0.05	0.06	0.07	0.16	0.40
6	375449	442266	NoData	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.08	0.25
7	375464	442266	NoData	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.11
8	375479	442266	NoData	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
9	375494	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	375509	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	375524	442266	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	375449	442281	NoData	0.05	0.06	0.07	0.07	0.09	0.10	0.11	0.15	0.29

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
13	375464	442281	0.13	0.18	0.21	0.22	0.23	0.26	0.27	0.29	0.33	0.47
14	375479	442281	0.12	0.19	0.23	0.23	0.25	0.28	0.29	0.31	0.35	0.48
15	375494	442281	0.09	0.15	0.20	0.21	0.22	0.26	0.28	0.31	0.37	0.57
16	375509	442281	0.08	0.15	0.20	0.21	0.22	0.26	0.28	0.30	0.35	0.52
17	375524	442281	0.01	0.03	0.04	0.04	0.04	0.06	0.09	0.12	0.20	0.45
18	375539	442281	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.06
19	375464	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.08
20	375479	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	375494	442296	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.06
22	375509	442296	NoData	0.03	0.06	0.06	0.08	0.12	0.15	0.17	0.25	0.47
23	375524	442296	0.26	0.35	0.41	0.42	0.43	0.48	0.50	0.53	0.60	0.81
24	375494	442311	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.02

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
25	375509	442311	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.05	0.25
26	375524	442311	0.15	0.26	0.32	0.34	0.36	0.40	0.43	0.45	0.53	0.74
Max value in selected area:			0.22	0.30	0.36	0.37	0.38	0.42	0.45	0.47	0.54	0.77

Data in this table comes from the Mearley Brook 2018 model. Height values are shown in mAOD, and depth values are shown in metres.
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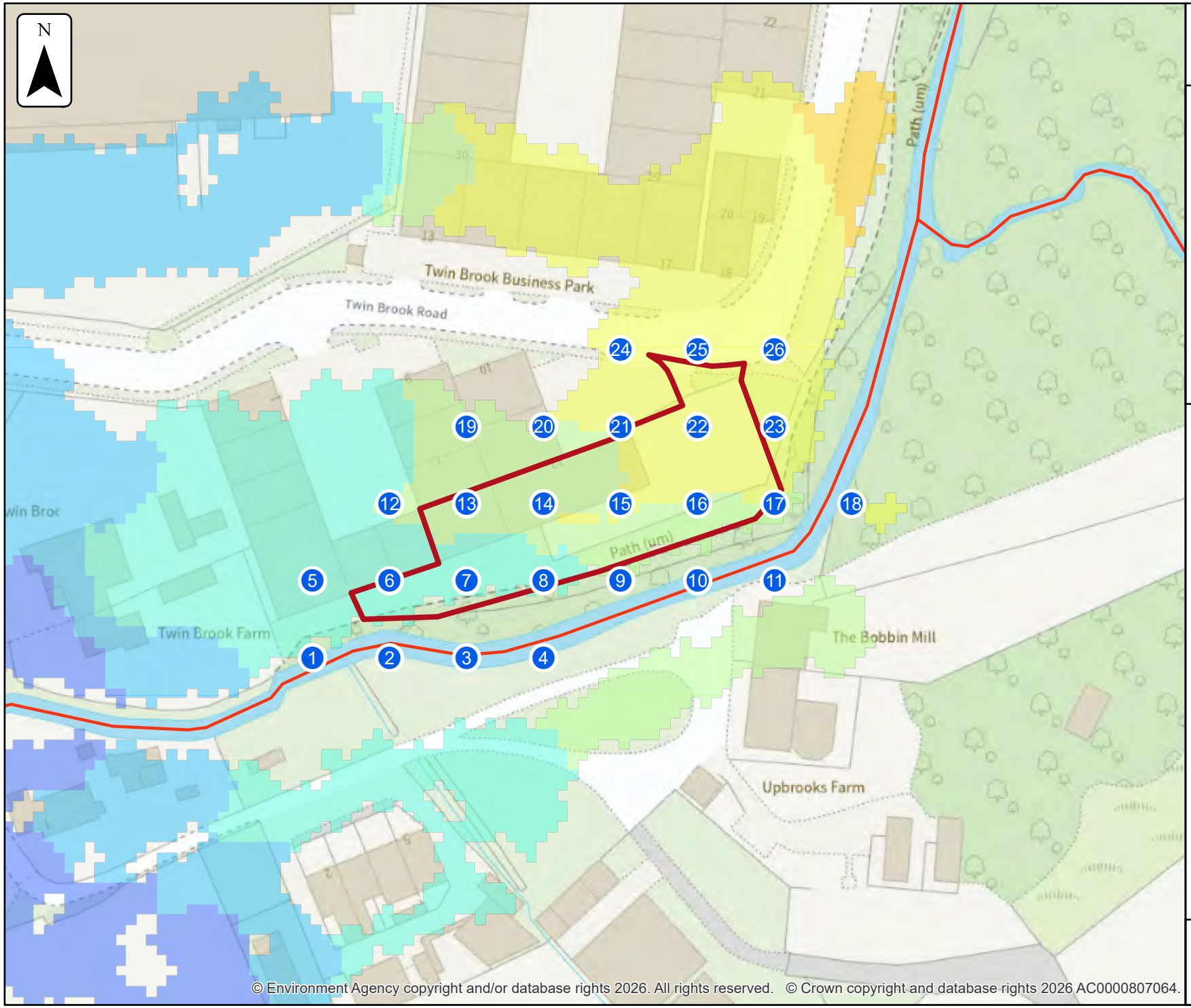
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defended climate change modelled fluvial extent and height

Location (easting/northing)
375489/442281

Scale
1:1,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 82 - 82.5
- 82.5 - 83.0
- 83.0 - 83.5
- 83.5 - 84.0
- 84.0 - 84.5
- 84.5 - 85.0
- 85.0 - 85.5
- 85.5 - 86.0
- 86.0 - 86.5

This map shows the 0.1% AEP +30% height data

0 10 20 30 40
metres

Sample point data

Defended climate change

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Height	Height
1	375434	442251	NoData	NoData	NoData	NoData
2	375449	442251	NoData	NoData	NoData	NoData
3	375464	442251	NoData	NoData	NoData	NoData
4	375479	442251	NoData	NoData	NoData	NoData
5	375434	442266	83.24	83.25	83.37	83.57
6	375449	442266	83.39	83.40	83.49	83.63
7	375464	442266	83.62	83.63	83.67	83.77
8	375479	442266	83.70	83.71	83.75	83.90
9	375494	442266	NoData	NoData	NoData	NoData
10	375509	442266	NoData	NoData	NoData	NoData
11	375524	442266	NoData	NoData	NoData	NoData
12	375449	442281	83.89	83.89	83.96	84.12

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Height	Height
13	375464	442281	83.98	83.99	84.06	84.19
14	375479	442281	84.03	84.04	84.09	84.22
15	375494	442281	84.20	84.21	84.31	84.50
16	375509	442281	84.21	84.22	84.29	84.46
17	375524	442281	84.11	84.13	84.25	84.46
18	375539	442281	84.41	84.42	84.52	84.71
19	375464	442296	NoData	NoData	84.04	84.15
20	375479	442296	NoData	NoData	NoData	NoData
21	375494	442296	NoData	NoData	84.38	84.54
22	375509	442296	84.33	84.35	84.46	84.67
23	375524	442296	84.37	84.38	84.49	84.68
24	375494	442311	NoData	NoData	NoData	84.79

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Height	Height
25	375509	442311	84.47	84.48	84.58	84.78
26	375524	442311	84.48	84.49	84.59	84.78
Max value in selected area:			84.46	84.47	84.58	84.77

Data in this table comes from the Mearley Brook 2018 model. Height values are shown in mAOD, and depth values are shown in metres.
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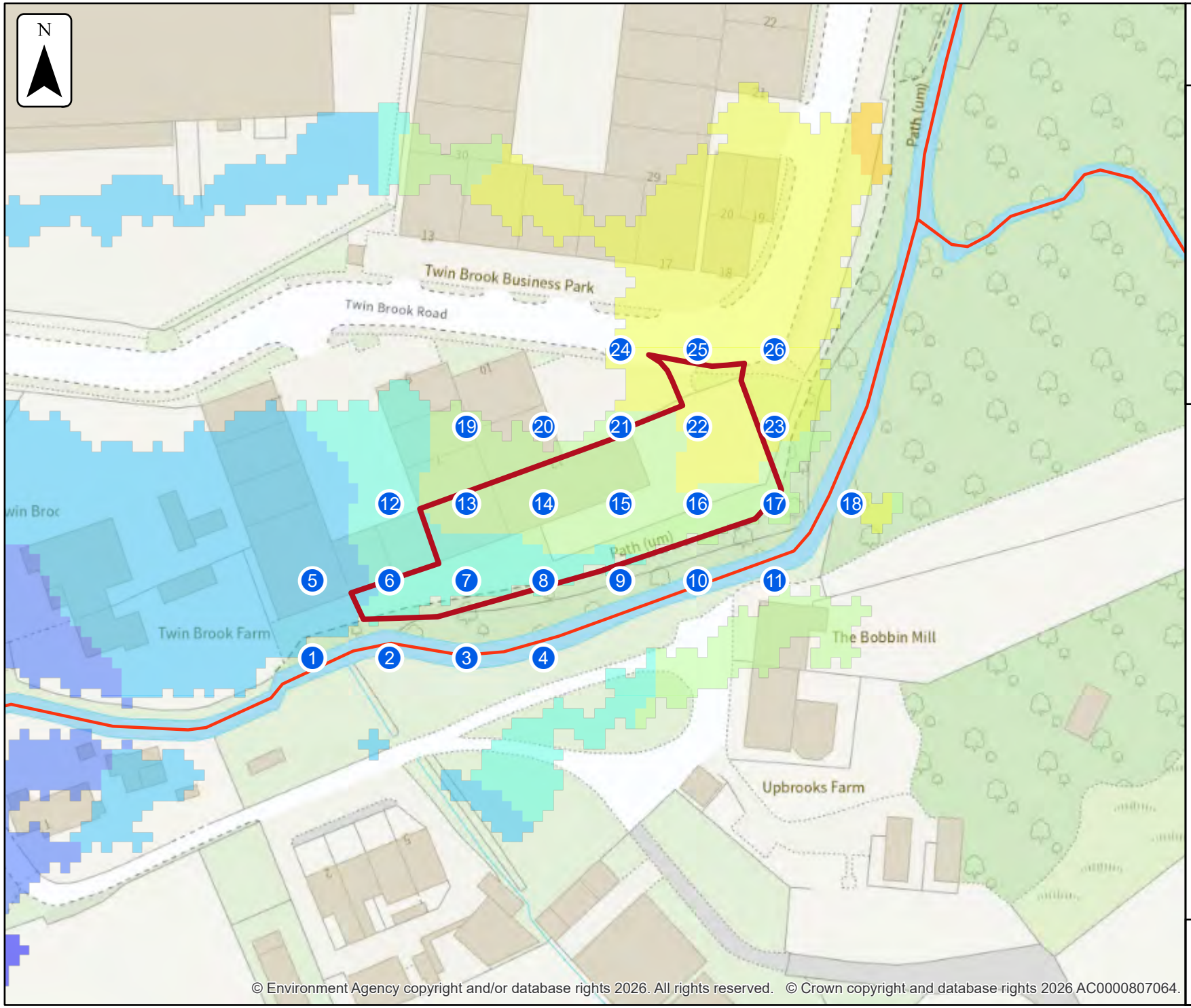
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defences removed modelled fluvial extent and height

Location (easting/northing)
375489/442281

Scale
1:1,000

Created
25 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 82 - 82.5
- 82.5 - 83.0
- 83.0 - 83.5
- 83.5 - 84.0
- 84.0 - 84.5
- 84.5 - 85.0
- 85.0 - 85.5
- 85.5 - 86.0
- 86.0 - 86.5

This map shows the 0.1% AEP height data

0 10 20 30 40
metres

Sample point data

Defences removed

Label	Easting	Northing	5% AEP	1% AEP	0.1% AEP	5% AEP	1% AEP	0.1% AEP
			Height	Height	Height	Depth	Depth	Depth
1	375434	442251	NoData	NoData	NoData	NoData	NoData	NoData
2	375449	442251	NoData	NoData	NoData	NoData	NoData	NoData
3	375464	442251	NoData	NoData	NoData	NoData	NoData	NoData
4	375479	442251	NoData	NoData	NoData	NoData	NoData	NoData
5	375434	442266	83.05	83.09	83.43	0.04	0.08	0.42
6	375449	442266	83.34	83.35	83.56	0.01	0.02	0.22
7	375464	442266	83.61	83.62	83.70	0.03	0.03	0.11
8	375479	442266	83.73	83.74	83.82	0.00	0.00	0.08
9	375494	442266	NoData	NoData	NoData	NoData	NoData	NoData
10	375509	442266	NoData	NoData	NoData	NoData	NoData	NoData
11	375524	442266	NoData	NoData	NoData	NoData	NoData	NoData
12	375449	442281	83.77	83.81	83.95	0.10	0.15	0.29

Label	Easting	Northing	5% AEP	1% AEP	0.1% AEP	5% AEP	1% AEP	0.1% AEP
			Height	Height	Height	Depth	Depth	Depth
13	375464	442281	83.84	83.91	84.10	0.20	0.27	0.45
14	375479	442281	83.90	84.01	84.25	0.20	0.30	0.54
15	375494	442281	83.99	84.09	84.36	0.20	0.30	0.57
16	375509	442281	83.98	84.06	84.29	0.16	0.24	0.47
17	375524	442281	83.92	84.01	84.33	0.05	0.14	0.45
18	375539	442281	NoData	NoData	84.58	NoData	NoData	0.10
19	375464	442296	NoData	NoData	84.06	NoData	NoData	0.09
20	375479	442296	NoData	NoData	NoData	NoData	NoData	NoData
21	375494	442296	NoData	NoData	84.46	NoData	NoData	0.06
22	375509	442296	84.11	84.23	84.53	0.09	0.21	0.51
23	375524	442296	84.14	84.26	84.55	0.39	0.51	0.80
24	375494	442311	NoData	NoData	84.68	NoData	NoData	0.01

Label	Easting	Northing	5% AEP	1% AEP	0.1% AEP	5% AEP	1% AEP	0.1% AEP
			Height	Height	Height	Depth	Depth	Depth
25	375509	442311	NoData	NoData	84.64	NoData	NoData	0.29
26	375524	442311	84.23	84.36	84.65	0.28	0.41	0.70
Max value in selected area:			84.21	84.34	84.63	0.35	0.47	0.77

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'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended climate change

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Depth	Depth	Depth	Depth
1	375434	442251	NoData	NoData	NoData	NoData
2	375449	442251	NoData	NoData	NoData	NoData
3	375464	442251	NoData	NoData	NoData	NoData
4	375479	442251	NoData	NoData	NoData	NoData
5	375434	442266	0.21	0.22	0.34	0.54
6	375449	442266	0.11	0.12	0.20	0.35
7	375464	442266	0.04	0.04	0.08	0.18
8	375479	442266	0.00	0.00	0.05	0.20
9	375494	442266	NoData	NoData	NoData	NoData
10	375509	442266	NoData	NoData	NoData	NoData
11	375524	442266	NoData	NoData	NoData	NoData
12	375449	442281	0.17	0.18	0.24	0.41

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Depth	Depth	Depth	Depth
13	375464	442281	0.36	0.37	0.43	0.57
14	375479	442281	0.38	0.38	0.44	0.57
15	375494	442281	0.41	0.42	0.52	0.71
16	375509	442281	0.39	0.39	0.47	0.64
17	375524	442281	0.25	0.26	0.38	0.60
18	375539	442281	0.01	0.01	0.02	0.19
19	375464	442296	NoData	NoData	0.06	0.15
20	375479	442296	NoData	NoData	NoData	NoData
21	375494	442296	NoData	NoData	0.00	0.14
22	375509	442296	0.29	0.30	0.41	0.62
23	375524	442296	0.64	0.65	0.76	0.95
24	375494	442311	NoData	NoData	NoData	0.13

Label	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
			Depth	Depth	Depth	Depth
25	375509	442311	0.08	0.09	0.19	0.38
26	375524	442311	0.57	0.58	0.68	0.87
Max value in selected area:			0.58	0.59	0.70	0.92

Data in this table comes from the Mearley Brook 2018 model. Height values are shown in mAOD, and depth values are shown in metres.
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'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

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 surface water, ground water and reservoirs

Your Lead Local Flood Authority is Lancashire 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 Cumbria and Lancashire Environment Agency team at inforequests.cmblnc@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