Primrose Community Nature Trust

Primrose Mill Lodge, Clitheroe Footpath Extension

Flood Risk Assessment

D4891-R-01

April 2026

PSA Design Ltd
Consulting Engineers
The Old Bank House
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Longridge
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mail@psadesign.co.uk

Document Control Sheet

Primrose Mill Lodge, Clitheroe
Footpath Extension

Flood Risk Assessment

Job	Date	Issue	Copy
D4891	April 2026	Original	

Originator…… G Sanderson ……..

Checker…….. D Wallbank ……..……...

Approver…… G Sanderson ……..……...

Contents

Figures

Appendices

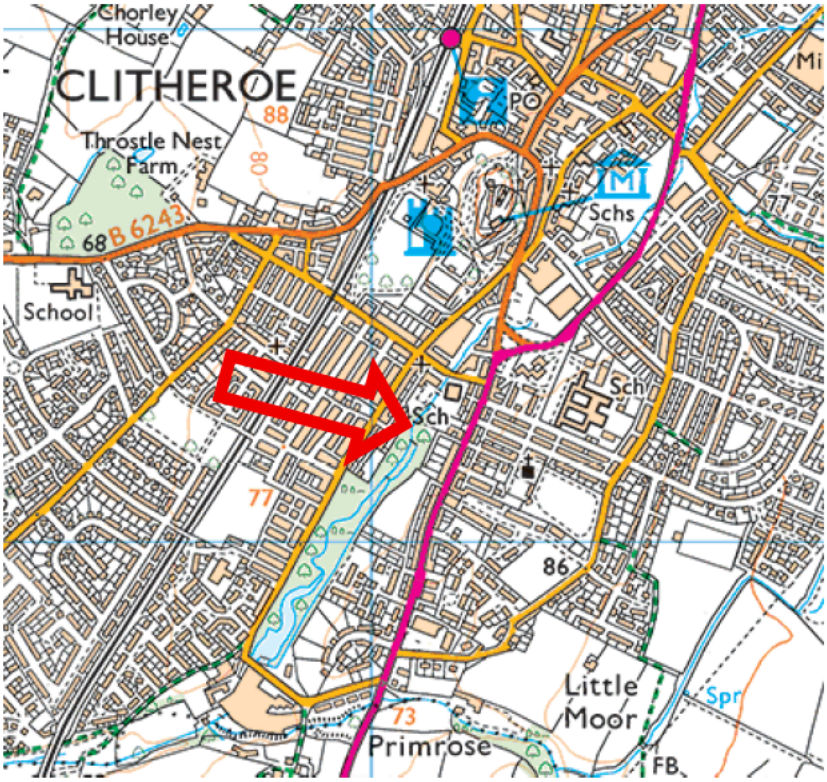
1. Introduction

1.1. PSA Design Ltd have been commissioned to provide a Flood Risk Assessment (FRA) to support a planning application for a proposed new footpath within Primrose Mill Lodge, Clitheroe.

1.2. The location of the site is shown below and in more detail on the location plan included within **Appendix A**.

The site is located at: Primrose Mill Lodge,
Clitheroe
BB7 1BJ

NGR : 374080E 441260N



Existing Site

1.3. Primrose Mill Lodge lies between Whalley Road and Woone Lane in Clitheroe. Primrose Lodge comprises a former mill lodge, Mearley Brook and semi-natural broadleaved woodland

situated south of Clitheroe town centre. Within the surrounding landscape, built up urban areas are located adjacent to the site boundaries and extend west and north-east of the site.

1.4. The site is approximately 0.18ha in area and the section of proposed new footpath extends approximately 340m. The footpath extension runs within the reserve, between an existing bridge over Mearley Brook through to the back street off Woone Lane.

Proposed Site

1.5. Full planning permission is sought for the extension of the footpath. This is the third extension through the reserve.

1.6. The proposed plans are included in **Appendix A**.

Site History

1.7. **3/2021/1052 -** Proposal to increase the amount of public access to the nature reserve through creation of additional footpaths and a second bridge crossing to create a mini-circular walk (Approved 9/12/21).

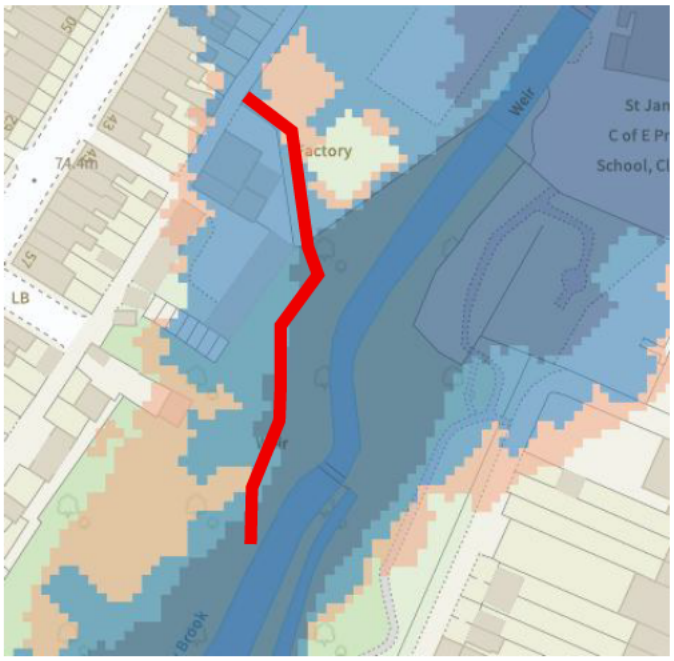
1.8. **3/2020/0004-** Variation of conditions 2 (approved plans), 4 (footpath entrance) and 5 (Flood Risk Assessment) from planning permission 3/2019/0388 to allow changes to design, footpath entrance and flood risk assessment. (Approved 16/3/20).

1.9. **3/2019/0388-** Restoration and enhancement of Primrose Lodge to change the former mill lodge into a public open space. To include de-silting 3000 square metres of the lodge to create permanent open water habitat with varying depths, planting the margins with suitable marginal pond vegetation; construction of an Alaskan A Fish Pass and creation of a footpath through the site (Approved 9/7/19).

2. Flood Risk Assessment

2.1. The National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG) set out Government policy aims on development and flood risk for England. The aim is to ensure flood risk is taken into account at all stages of the planning process, to avoid inappropriate developments in areas at risk of flooding, and to direct development away from areas of highest risk.

2.2. Flood mapping from the EA website (extract below) clearly indicates that the site is located within Flood Zones 1,2 and 3 and is therefore potentially at risk of flooding.



Therefore, Planning Policy Guidance (PPG) has been reviewed and assessed as below.

2.3. **Vulnerability**

With reference to NPPF, the proposed use (amenity open space) would fall within the "Water Compatible Development" category. With reference to Table 2 from PPG, if the site lies within Flood Zones 1, 2 and 3a, it would be deemed "appropriate".

There will therefore be no requirement for the Sequestion or Exception Test to be carried out for this development.

Regardless of the above compatibility, standing advice for developments indicates that flood risk must be assessed in detail to ensure the development is safe and flood risk is fully appraised. This is discussed in more detail below.

2.4. In order to assess flood risk in detail, we have acquired the Environment Agencies "Flood Risk Assessment Data" (formerly known as Product 4). This is included as **Appendix B.**

2.5. Coast Flood Risk

Reference to the flood risk assessment data shows the site NOT at risk of coastal flooding during all scenarios.

2.6. Fluvial Flood Risk

Fluvial flood risk has been assessed based on the flood risk data provided. In order to visualise the data in relation to the proposals, **Figure 1** has been generated and is included towards the back of this report. The figure shows the "Defended Climate Change modelled Fluvial Event" based on the 0.1% AEP + 30 % data, overlain on the proposed plan.

2.7. The prudent design model for this scheme is the 1% AEP + climate chance, which would be the central allowance or 36%. The data provided for each node location is the 1% AEP + 70% CC event and therefore presents a very robust assessment. Contrary to the flood map for planning, the detailed model data presents a less onerous picture.

Along the proposed works, there are 4 prudent nodes affected all in the north, the remaining nodes (i.e. 2, 5, 8, 10, 12 and 15) along the footway present "no-data" which indicated no flooding at that location.

Nodes	Defended 1% AEP (+70%)	Existing Ground Level	Flood Depth
23	72.31	72.28	30mm
24	72.15	72.24	90mm
21	72.28	72.23	50mm
18	72.02	71.90	120mm

As can be seen, maximum flood depths are shown at 120mm (typically less) based on the 70% CC allowance, which by definition would be shallower during the design storm CC allowance of 36%. Regardless, localised flooding to a depth of 120mm would cause negligible risk and it is VERY unlikely the people would be using the footpath at times when flooding is most likely to occur. At any one time a person would be less than 30m away from flood zone 1.

Fluvial flood risk has therefore been assessed and considered to be low risk.

2.8. Surface Water Flood Risk

Reference to online surface water flood risk mapping shows some very minor areas of flood risk to the north of the proposals. With reference to the topographical survey, surface water flooding would be very shallow.

2.9. Flood risk from surface water is therefore considered to be very low.

It is therefore concluded, in terms of flood risk, the site is appropriate for development and will be suitably safe from flood risk during its lifetime.

3. Drainage

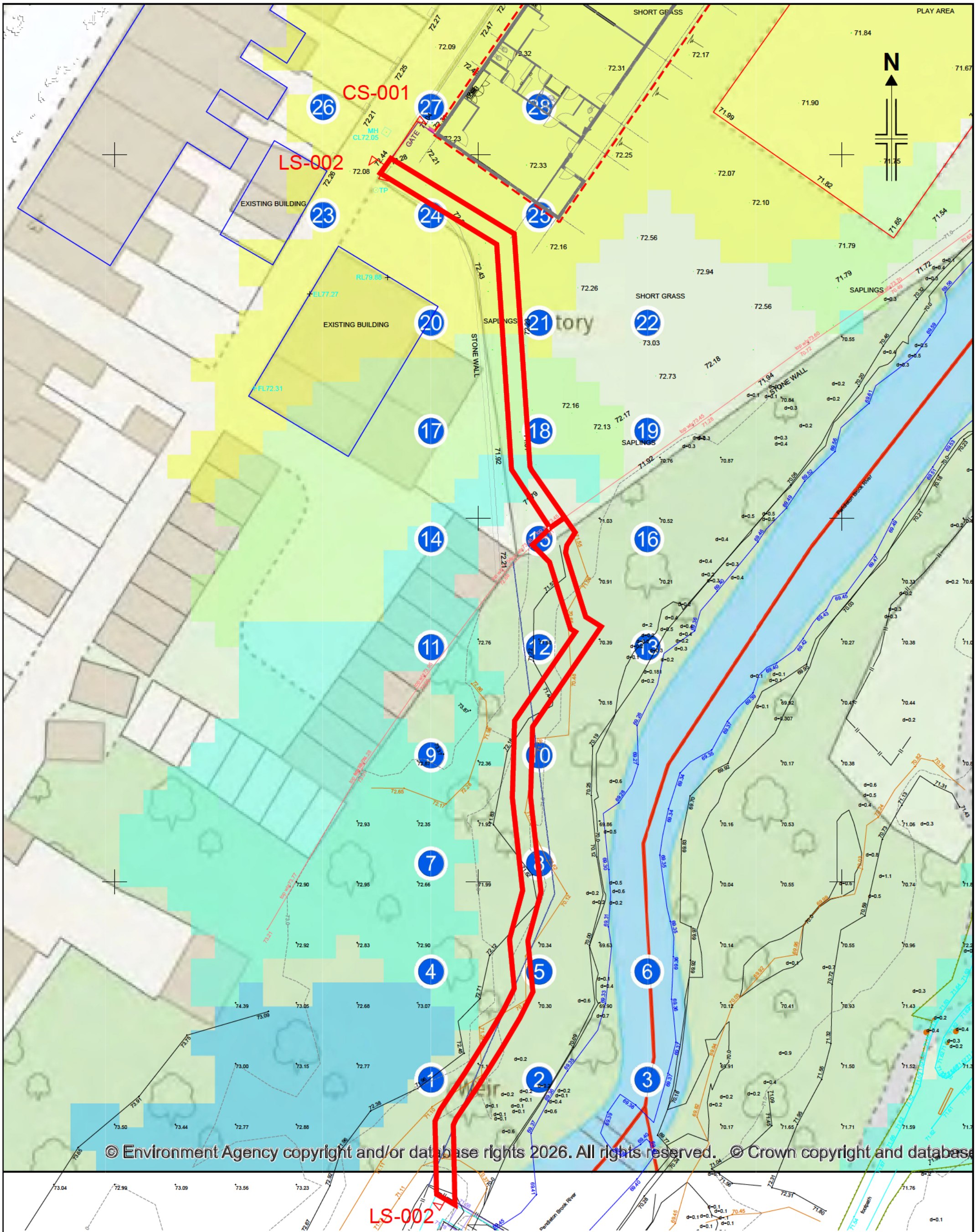
3.1. There is no drainage proposed as part of the application. The path will be a traditional woodland footway which would disperse surface water into the landscaping either side.

4. Conclusion

4.1. **It is therefore concluded, in terms of flood risk, the site is appropriate for development and will be suitably safe from flood risk during its lifetime**.

4.2. **Accordingly, there should be no flood risk or drainage reasons why the proposals should not be granted planning consent.**

Figures



REV	DATE	AMENDMENT DETAILS	DRAWN	CHECKED	APPROVED
P1	00/00/00	Preliminary for Comment	GS	DLW	GS

PSA DESIGN

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Client	**Primrose Community Nature Trust**
Job	**Primrose Mill Footpath Extension**
Title	**Product 4 Data Overlay**

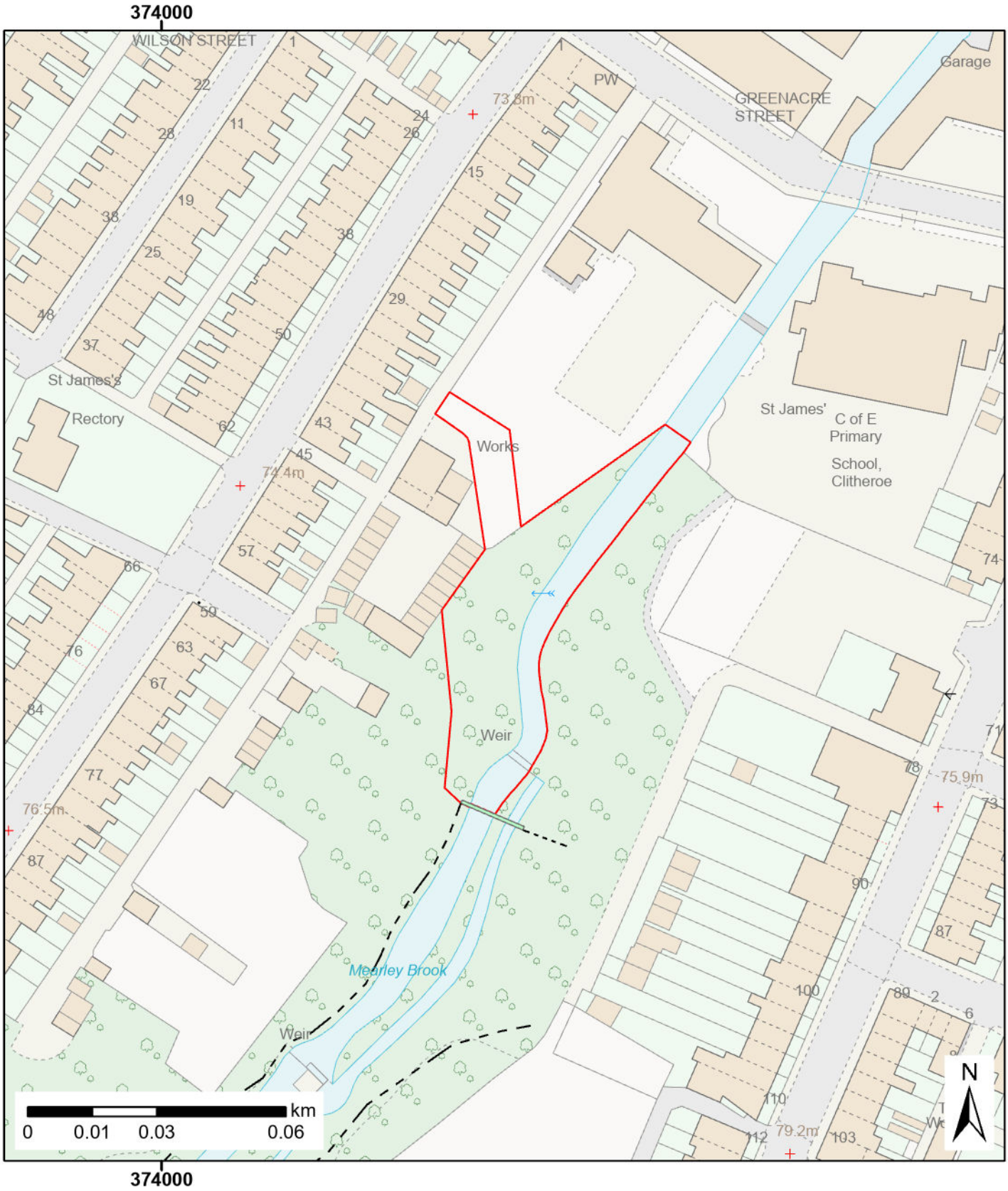
Drawn	Date	Scale	Drwg No.
GS	**20/04/26**	**N.T.S.**	**Figure 1**
Check	Appr.	Sheet Size	Rev.
-	**-**	**A3**	**P1**

P:\Jobs\Development\Primrose FRA - Paula Fitz\Figure 1.dwg

Appendix A

Existing & Proposed Site Plans

DEVELOPMENT BOUNDARY PRIMROSE NATURE RESERVE PHASE 2



Existing Path

Existing Bridge

Development Boundary

Author: JS

Project PNR Phase 2

Date: 16/04/2026

Coordinate System: British National Grid

Scale: 1:1,250

Plant new screening Hedge (see Specfication Document)

Install plastic coated weld mesh boundary fence to 2.4m high (See Specification Document)

Remove Gate, demolish section of wall, and make good end of retained wall.

Create entrance with cycle restrictors (see Specification Document)

Demolish 1.5m of wall to allow footpath to pass through, and make good ends of retained wall

Reduce height of wall to 1000mm from ground level (approx 72.42mAOD), finish to top of wall to match existing finish

Provide 4m wide bitmac seating and turning area with suitable edging/curb

Install fencing, as per hedge fencing spec, 1m from the edge of the new bitmac path. Plant hedge row tree mix, 6 stems per metre. inside the fence.

Install 1.5m wide bitmac (see Specification Document) ramp @ 1:8 slope from bridge to existing ground level 70.3. Infill where necessary to achieve level

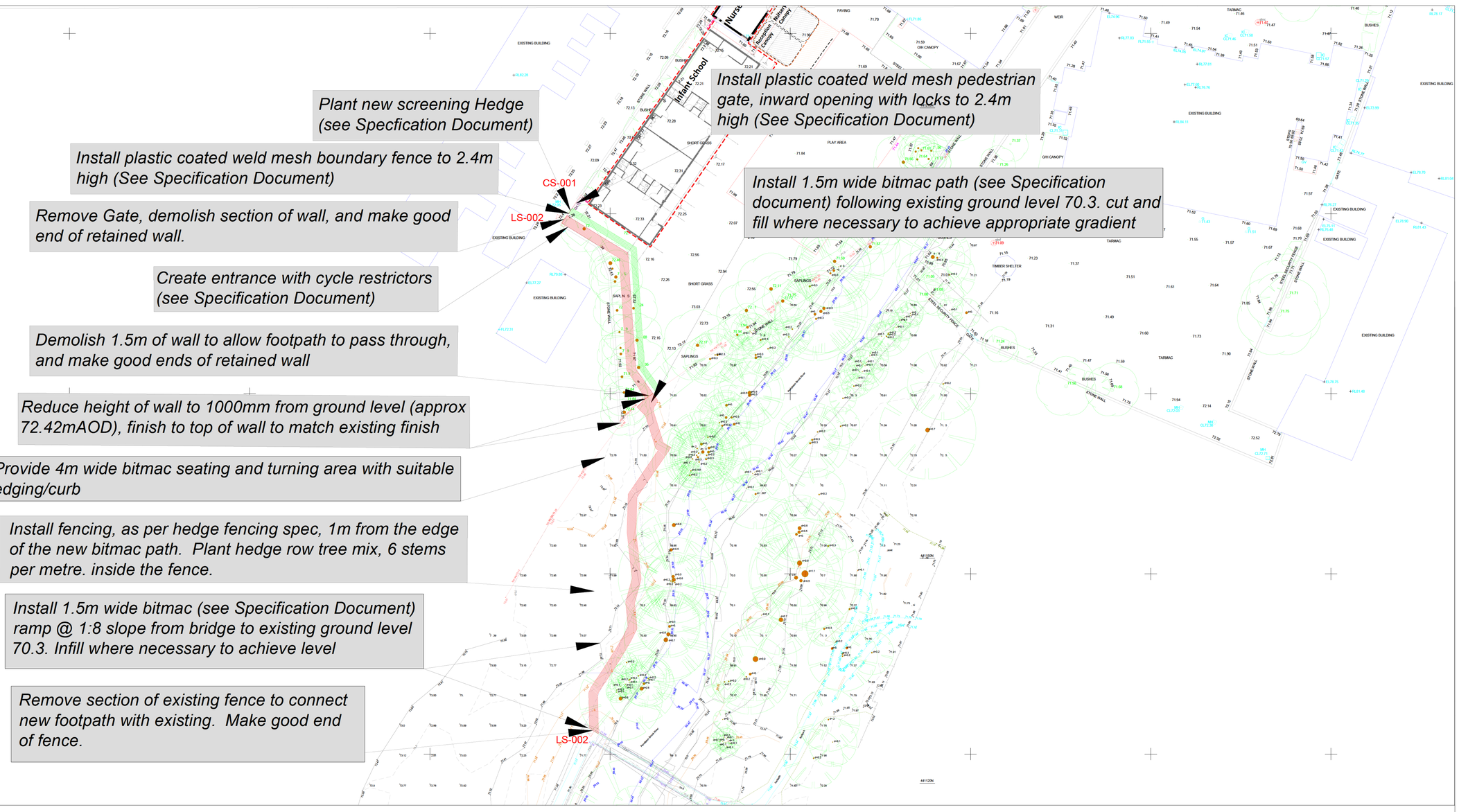
Remove section of existing fence to connect new footpath with existing. Make good end of fence.

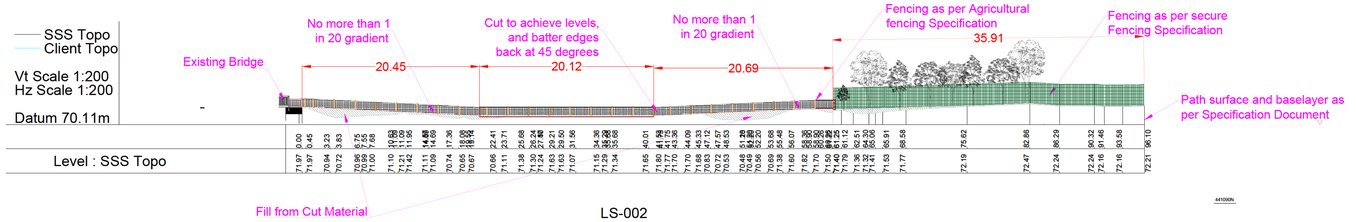
Install plastic coated weld mesh pedestrian gate, inward opening with locks to 2.4m high (See Specification Document)

Install 1.5m wide bitmac path (see Specification document) following existing ground level 70.3. cut and fill where necessary to achieve appropriate gradient

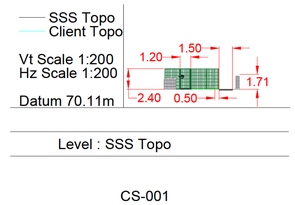
CS-001

LS-002





LS-002



CS-001

Annotations and Symbols

?	unknown cover	lp	lamp post	conc.	concrete	cf/-5.67	cellar floor level		
ac box	air conditioning box	lt	left turn arrow	conc. boll	concrete bollard	356level step	level step		
av	air valve	peg	peg	conc. wall	concrete wall	gu/-&ds=34.29	gulley with downspout		
bb	bellsha beacon	phone box	phone box	edg.cut grass	edge cut grass		level		
bin	bin	post box	post box	el.sub st	elec. substation	win top=13.59	window top		
bt	bt line	pipe	pipe	face conc	face of concrete	win bot=14.41	window bottom		
bt	bt manhole	planter	planter	face clad.	face of cladding	b/w	barbed wire		
post	bt post	post	post	face tim	face of timber	c/l	chain link		
bt box	bt box	rod. eye	rodding eye	trel - trellis	trellis	c/b	close boarded		
bm	OSBM	mj	sleve mj	hp pr. gas	high pressure gas	c/i	corrugated iron		
block	blocked manhole	rt	right turn	mj - turn	mj right turn	con/pan	concrete panel		
bus shelter	bus shelter	sb	send box	nat.ground	natural ground	cr/ba	crash barrier		
cable	cable	security cam	security camera	ret. wall	retaining wall	inv	invert		
can't lift	can't lift	seat	seat	sur. drain	surface drain	iron	iron rail		
ctr box	cable tv box	si	sign - with indicative text	ped. studs	pedestrian studs	pal	palisade		
ctv	cable tv manhole	slab=3.19	slab (generally conc.)	manhole cover level	manhole cover level	panel	panel		
data mh	data manhole	st.tap	stop tap	dpc=56.45	dpc level	pcb	public bench		
dk	drop kerb	str.	straight on	eav=34.29	eaves level	pick	picket		
ds&g	down spout (with gulley)	sv	sluice valve	ffl=5.34	finished floor level	pr	post & rail		
dsr	recessed downspout	tactile paving	tactile paving	gu=34.29	gulley level	p/w	post & wire		
ds	building step back	ts.	traffic signal	gutter=34.29	gutter level	sec	security fence		
	not surveyed	ts, mh	traffic signal manhole	hip=34.29	hip level	wood	wooden fence		
el. post	electric post	ts box	traffic signal box	ir=5.34	invert level				
el.	electric	trap	trap	oh=5.34	overhead level	deciduous tree			
el. mh	electric manhole	utility	utility (unknown)	ramp=5.34	ramp level				
el box	electric box	utility mh	utility manhole (unknown)	rid=34.29	ridge level				
earth	earth strap/spike	utility box	utility box (unknown)	sill l=5.34	sill level				
f.hydr	fire hydrant	water	water	sill=5.34	sill level	conifer tree			
gas	gas	water mh	water manhole	sill=5.34	sill level				
gas mh	gas man hole	water box	water box	slab=5.34	slab level				
gas box	gas box	wo	wash out valve	top conc=5.34	top of concrete	gate			
gu=5.68	gulley top	tap	tap	tp=60.67dia.15	top of pipe				
gpy	guy rope/stay	parking meter	parking meter	t.st.=10.36	top of step	station			
.5 dia	pipe diameter	cycle rack	cycle rack	twl=56.72	top of wall				
light	light	cycle shelter	cycle shelter	wat=56.19	water level	spot level			

Line Features

- bottom of batter / wood / ridge / timber face / gutter
- top of batter
- break line / discontinuity
- wall (see text nearby for height / width / type)
- retaining wall (see text nearby for height / width / type)
- channel (all levels at channel unless noted)
- kerb levels (shown parallel to channel -)
- railway
- drain / river / canal
- overhead lines / buildings (not surveyed unless specified)
- concrete / ramp
- building — stone
- face of cladding / flower bed
- canopy
- verge
- fence (see text nearby for height / width / type) ——|——|—— (panel / security / etc.)
- columns / gridlines / conveyors / column face
- brick
- cycle lane / bus lane / white line (see text)
- tanks / decking
- hedge scaled to width

line may be as above, if just one edge
i.e. for level specific surveys both sides measured not to show level change
(see text for type / height / width / etc)

- path / window / door
- track
- contours — 50.00 / 50.50

Ribble Rivers Consultancy Ltd.

1. The underlying survey has been accurately positioned on the Ordnance Survey National Grid system using GPS observations to the OS Active Network and the latest Ordnance Survey transformation (OSTN15/OSGM15).

2. All levels relate to Ordnance Survey Datum (Newlyn). Vertical control has been established using GPS observations to the OS Active Network and the latest Ordnance Survey transformation (OSTN15/OSGM15).

3. Local Scale Factor has been removed to transform the survey to a flat earth grid (scale factor 1.00000).
Local Grid Origin is Control Station **GS1**
This is the only point where OS Grid coordinates are true.

Client: Primrose Community Nature Trust

Project: Primrose Nature Reserve, Clitheroe

Drawing title: General Arrangement, Long Sections and Cross Sec ion

Scale	1:250 @ A0	DO NOT SCALE
RRCL Job No.	RRCL 320	
Date:	16th April 2026	
Drawing number	PNRP2 - GA	Rev I

This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

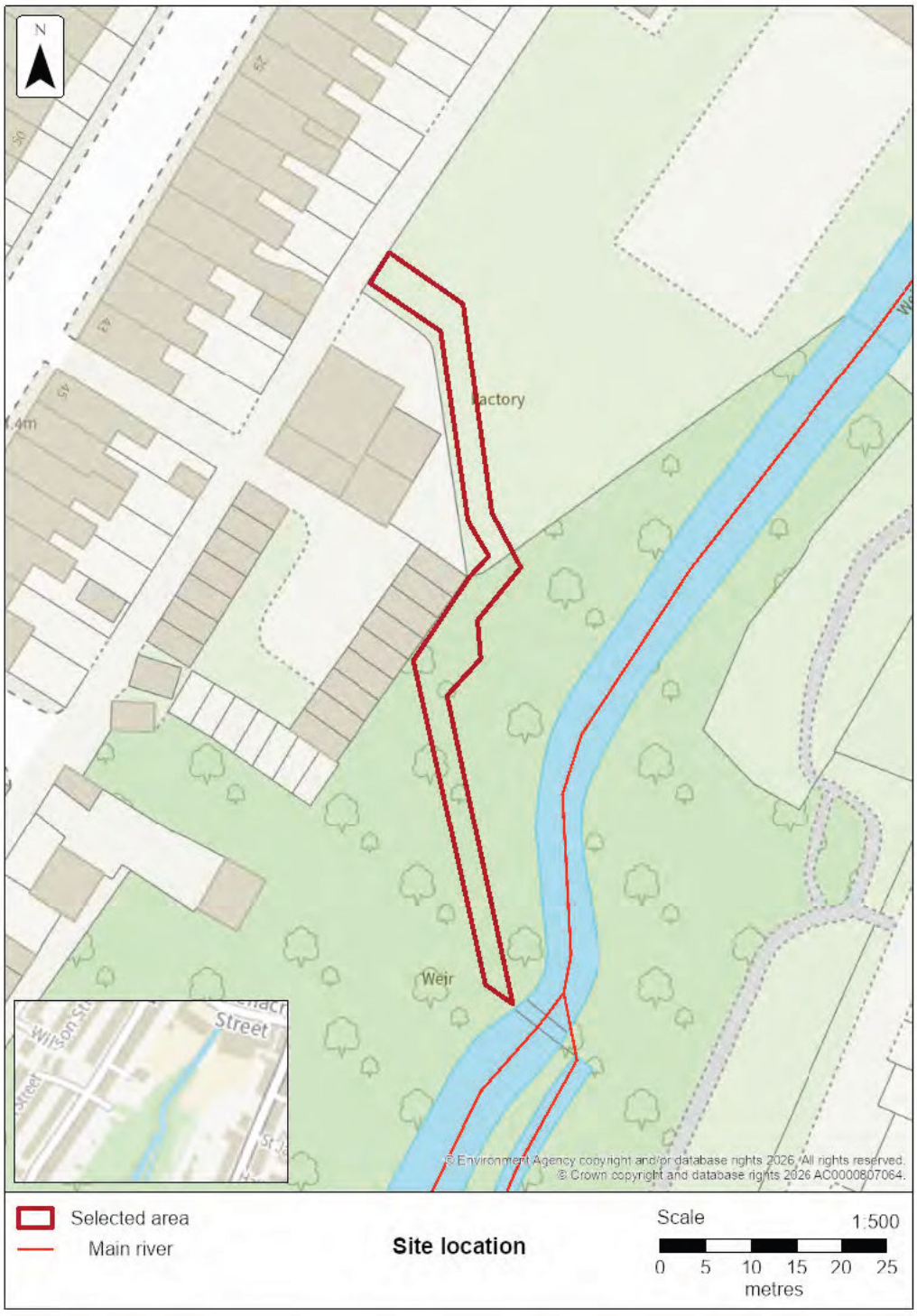
Appendix B

EA Flood Data

Flood risk assessment data

Location of site: 374074 / 441237 (shown as easting and northing coordinates)
Document created on: 3 March 2026
This information was previously known as a product 4.
Customer reference number: BCPWECA81A1V

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:

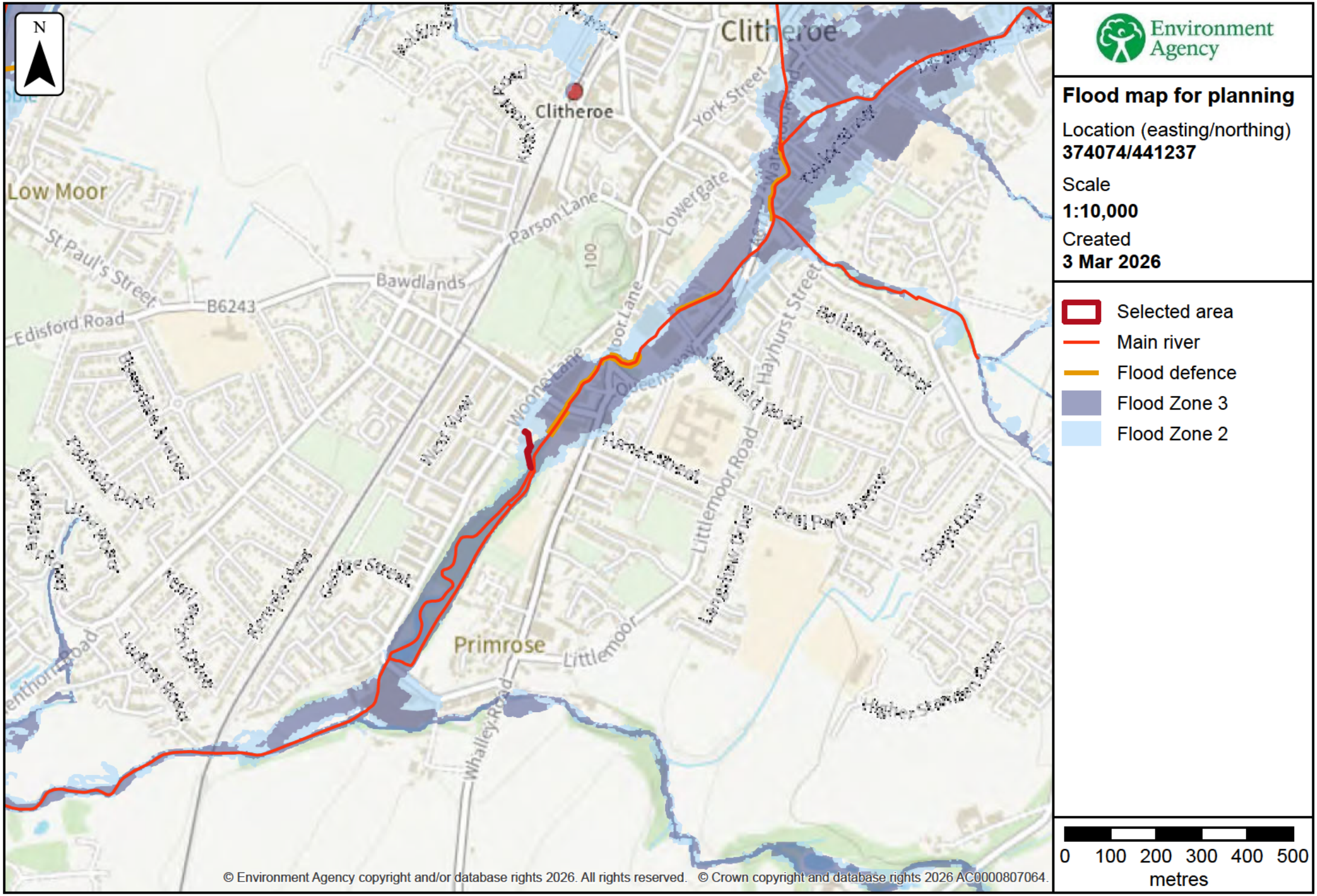
- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

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


N
Clitheroe
Low Moor
Primrose
Bawdlands
B6243
Edisford Road
St Paul's Street
Parson Lane
Lowergate
York Street
Littlemoor
Littlemoor Road
Whalley Road
Hayhurst Street
Queensway
Woone Lane
Environment Agency
Flood map for planning
Location (easting/northing)
374074/441237
Scale
1:10,000
Created
3 Mar 2026
Selected area
Main river
Flood defence
Flood Zone 3
Flood Zone 2
0 100 200 300 400 500
metres
© Environment Agency copyright and/or database rights 2026. All rights reserved. © Crown copyright and database rights 2026 AC0000807064.

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

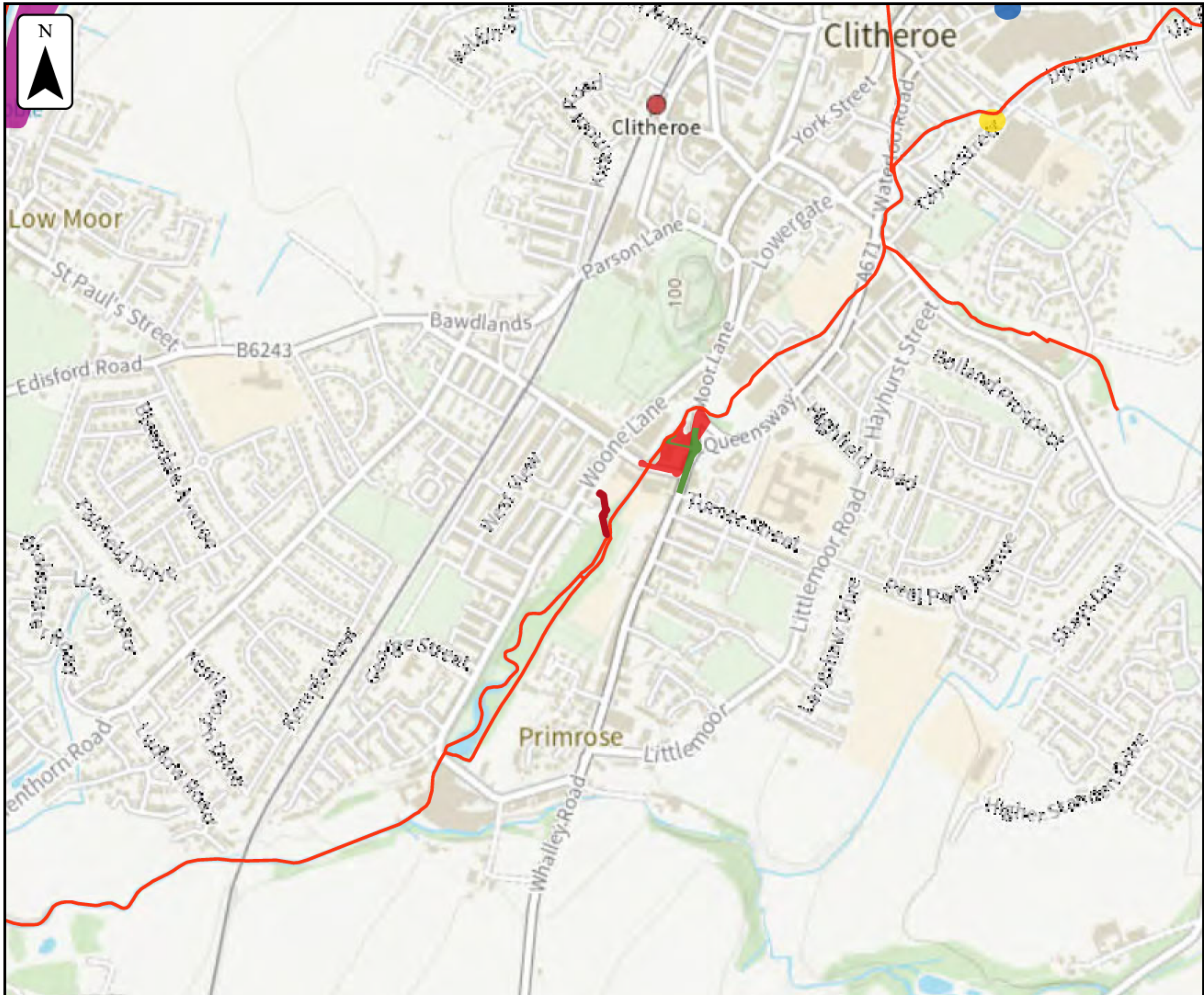
The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- 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)
374074/441237

Scale
1:10,000

Created
3 Mar 2026

Selected area
Main river
Date of flood event
August, 2016
December, 2015
July, 2007
October, 2000
September, 1999
February, 1999
January, 1995

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
26 December 2015	27 December 2015	unknown	unknown	No
3 July 2007	4 July 2007	ordinary watercourse	obstruction/blockage - culvert	No
26 October 2000	27 October 2000	main river	channel capacity exceeded (no raised defences)	No
29 September 1999	30 September 1999	main river	channel capacity exceeded (no raised defences)	No
19 February 1999	20 February 1999	main river	other	No
31 January 1995	1 February 1995	main river	channel capacity exceeded (no raised defences)	No

Flood defences and attributes

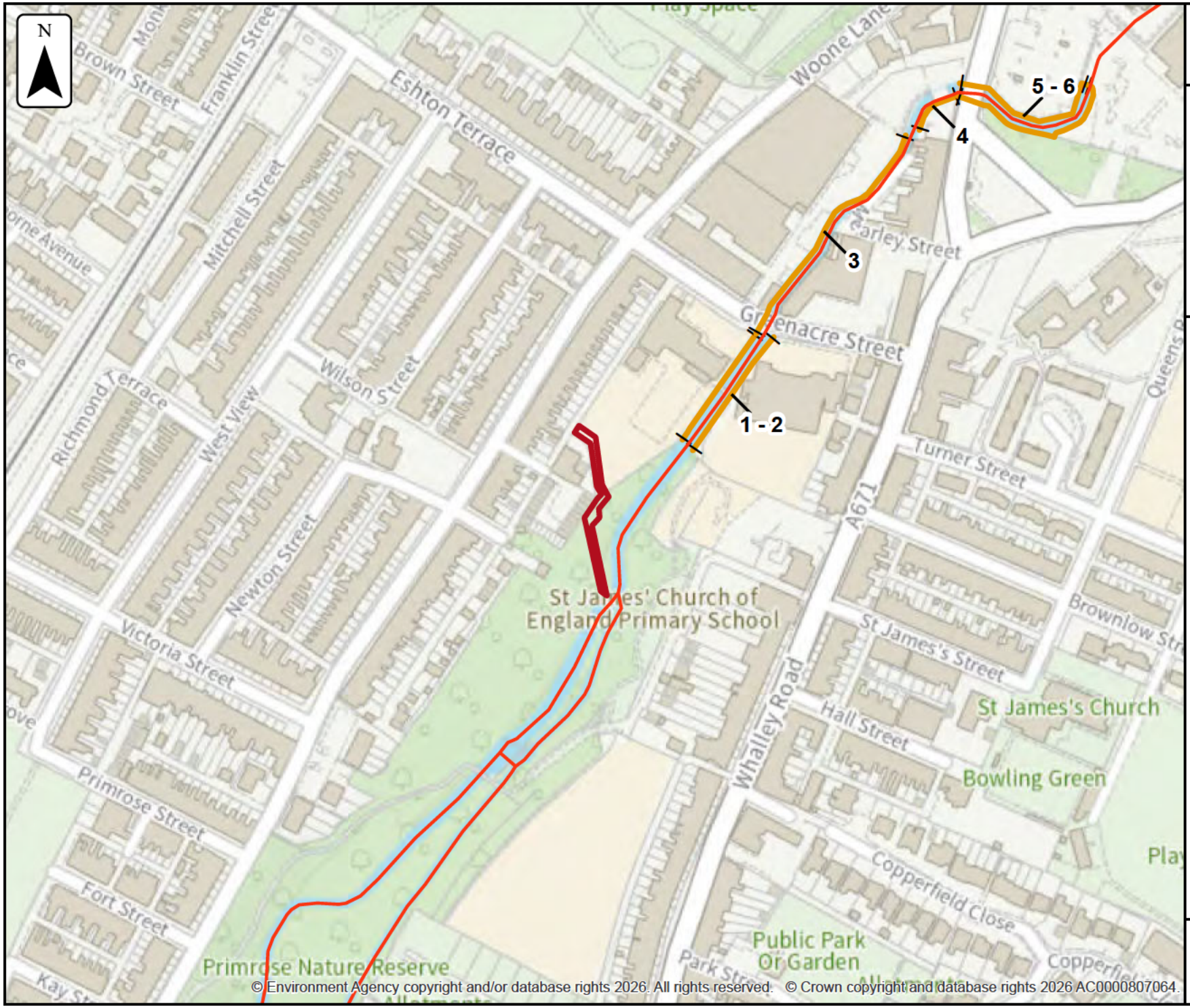
The flood defences map shows the location of the flood defences present.

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)
374074/441237

Scale
1:2,500

Created
3 Mar 2026

- Selected area
- Main river
- Flood defence

0 25 50 75 100
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	64624	Wall	100	Fair	73.14	73.16	73.14
2	69518	Wall	100	Fair	72.94	72.94	72.94
3	95088	Wall	10	Fair	71.54	73.16	71.54
4	64401	Wall	10	Fair	72.33	73.65	72.33
5	67007	Wall	100	Fair	74.01	76.82	74.01
6	67006	Wall	10	Fair	73.65	72.86	72.86

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

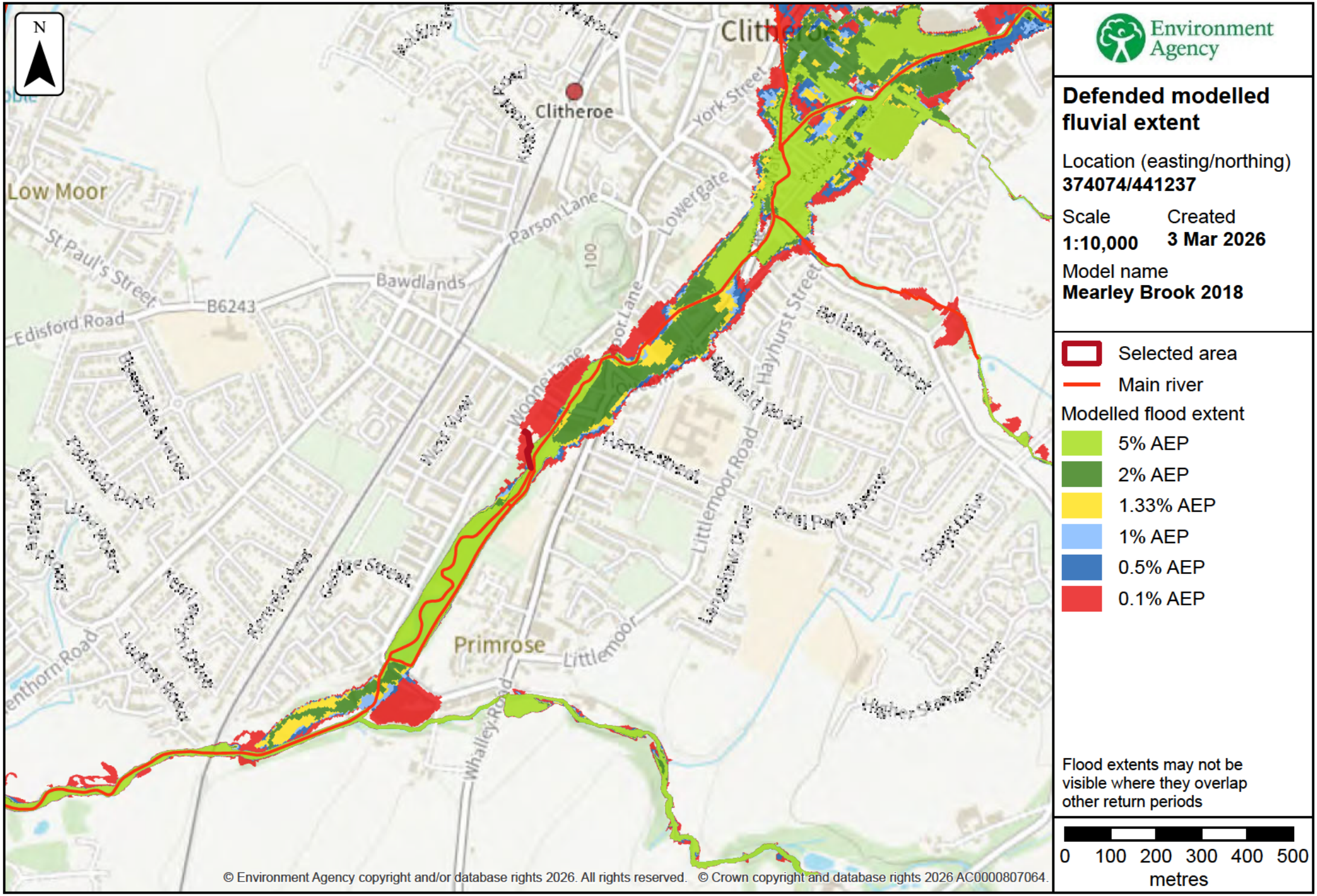
The climate change data included in the models may not include the latest flood risk assessment climate change allowances. Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

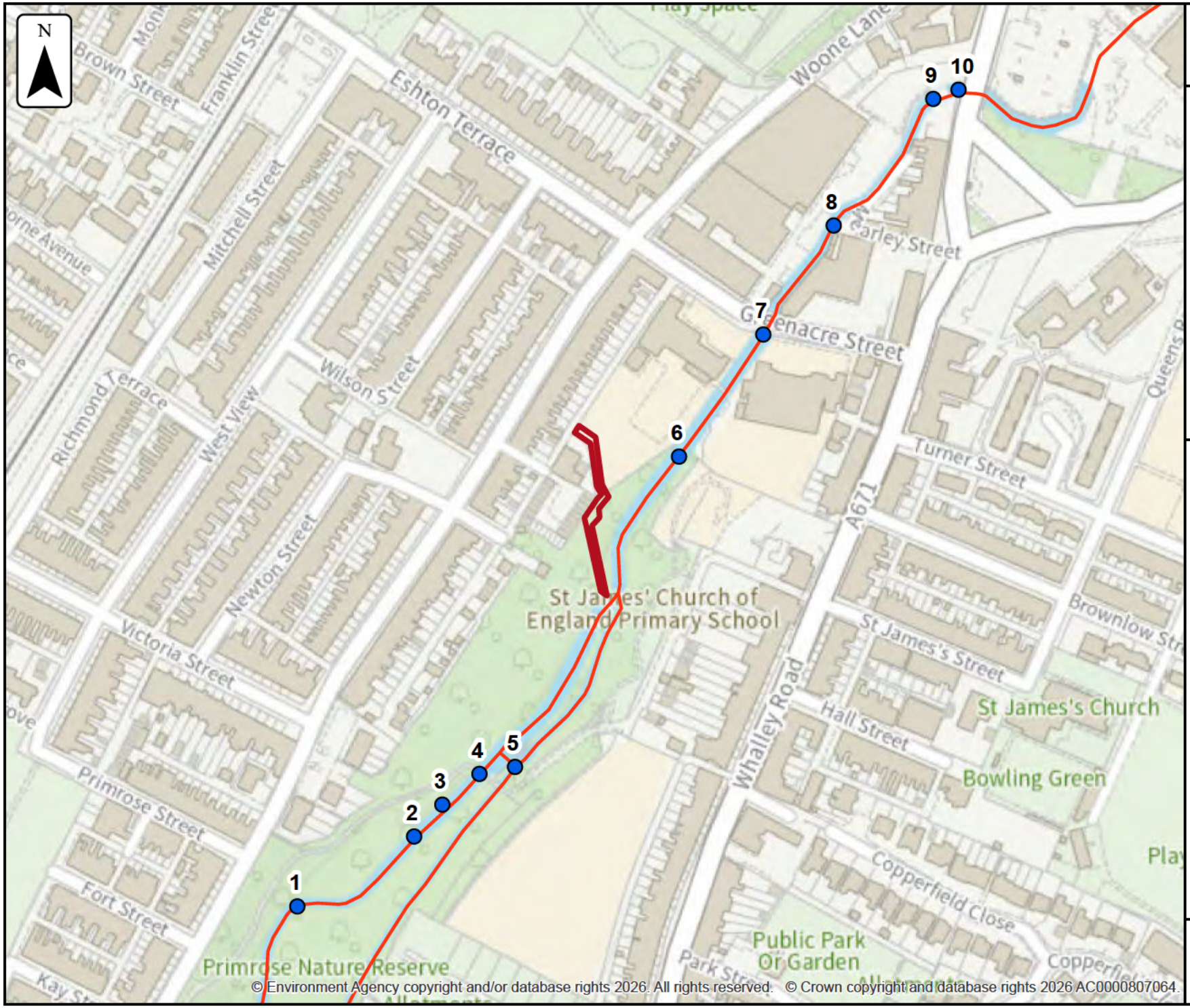
The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

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


N
Clitheroe
Low Moor
Primrose
Bawdlands
B6243
Edisford Road
St Paul's Street
Parson Lane
Lowergate
York Street
Littlemoor
Littlemoor Road
Whalley Road
Hayhurst Street
Environment Agency
Defended modelled fluvial extent
Location (easting/northing)
374074/441237
Scale
1:10,000
Created
3 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 copyright and/or database rights 2026. All rights reserved. © Crown copyright and database rights 2026 AC0000807064.



Environment Agency

Defended modelled fluvial node locations

Location (easting/northing)
374074/441237

Scale
1:2,500

Created
3 Mar 2026

Model name
Mearley Brook 2018

- Selected area
- Modelled location
- Main river

0 25 50 75 100
metres

Modelled node locations data

Defended

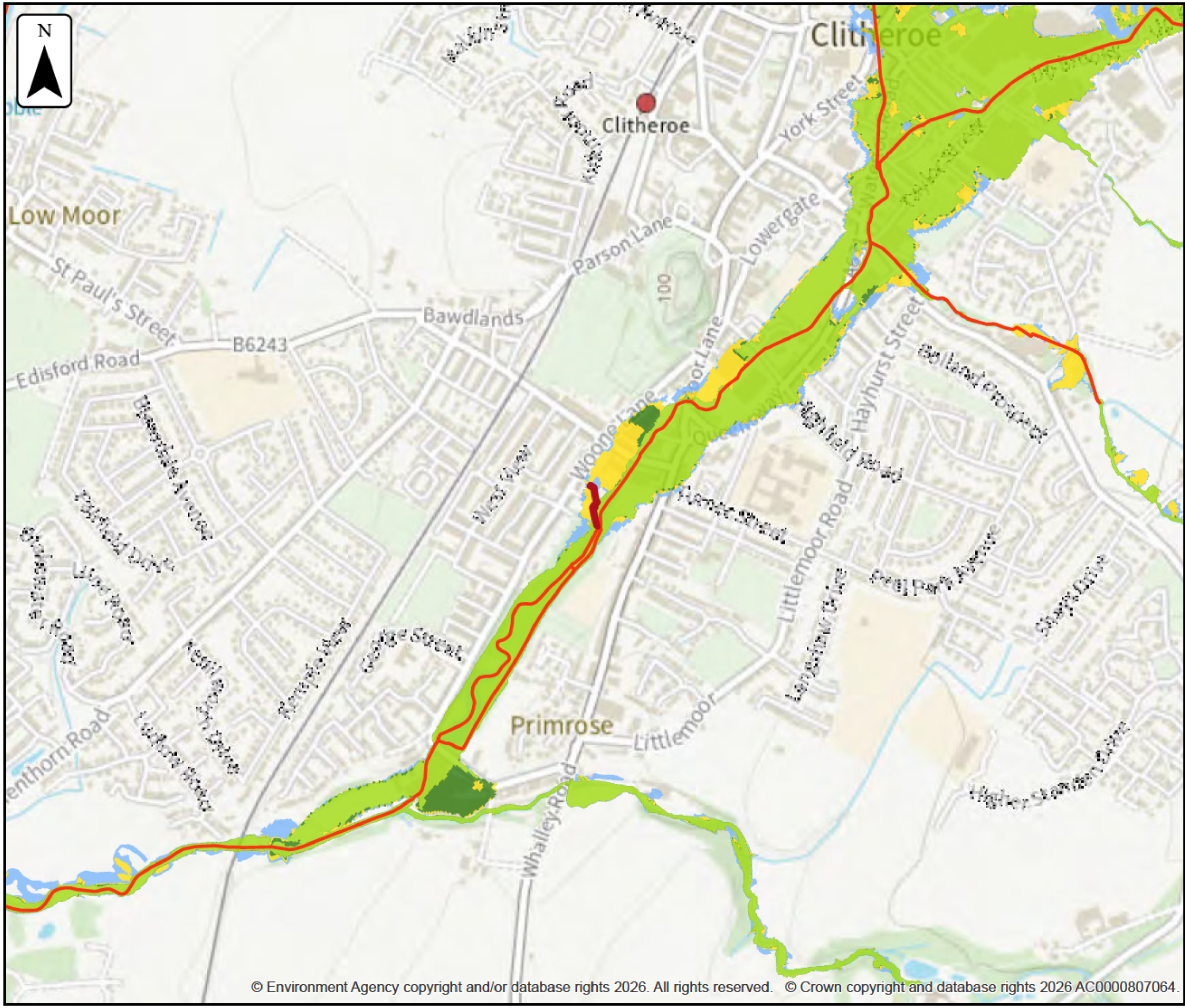
Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
1	982452	373929	441040	69.62	69.78	69.91	70.04	70.09	70.14	70.32	70.62	70.76	70.94	71.08
2	982411	373986	441075	69.60	69.76	69.90	70.03	70.08	70.14	70.32	70.61	70.76	70.93	71.08
3	982433	374000	441090	69.61	69.76	69.89	70.02	70.08	70.13	70.32	70.61	70.75	70.93	71.07
4	982337	374018	441105	69.65	69.78	69.90	70.02	70.07	70.12	70.31	70.61	70.75	70.93	71.06
5	982362	374035	441108	69.69	69.82	69.94	70.06	70.11	70.15	70.33	70.64	70.78	70.96	71.12
6	982191	374115	441260	70.51	70.66	70.78	70.90	70.93	70.94	70.99	71.10	71.18	71.35	71.75
7	982466	374156	441319	70.77	70.95	71.12	71.29	71.33	71.38	71.45	71.54	71.62	71.79	72.17
8	982380	374190	441372	70.93	71.26	71.53	71.82	71.89	71.96	72.08	72.17	72.28	72.53	73.0
9	982328	374239	441434	71.24	71.41	71.61	71.84	71.90	71.96	72.06	72.15	72.26	72.54	73.0
10	982315	374251	441438	71.36	71.55	71.76	71.99	72.05	72.11	72.19	72.24	72.33	72.58	73.05

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	982452	373929	441040	12.69	16.36	19.64	22.86	23.60	24.18	26.07	28.49	30.08	34.91	55.01
2	982411	373986	441075	11.85	15.48	18.85	22.06	22.82	23.42	25.24	27.57	29.09	33.27	52.34
3	982433	374000	441090	11.59	14.95	18.13	21.37	22.16	22.81	24.61	26.85	28.33	31.97	50.47
4	982337	374018	441105	11.71	15.03	17.96	20.87	21.59	22.16	23.94	26.01	27.45	30.75	48.30
5	982362	374035	441108	1.0	1.02	1.58	2.49	2.73	2.93	3.70	7.38	8.74	11.27	18.03
6	982191	374115	441260	12.06	15.40	18.75	22.19	23.03	23.71	25.44	27.34	29.24	32.10	42.01
7	982466	374156	441319	12.06	15.40	18.76	22.19	23.03	23.71	24.72	25.01	25.13	26.32	28.35
8	982380	374190	441372	11.88	15.14	18.50	21.88	22.71	23.38	24.38	24.58	24.69	25.86	26.41
9	982328	374239	441434	11.88	15.14	18.50	21.89	22.72	23.49	24.90	25.39	25.60	25.85	26.0
10	982315	374251	441438	11.88	15.14	18.50	21.89	22.72	23.49	25.39	26.41	26.80	27.26	27.71

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)
374074/441237

Scale
1:10,000

Created
3 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled flood extent

1% AEP (+30%)

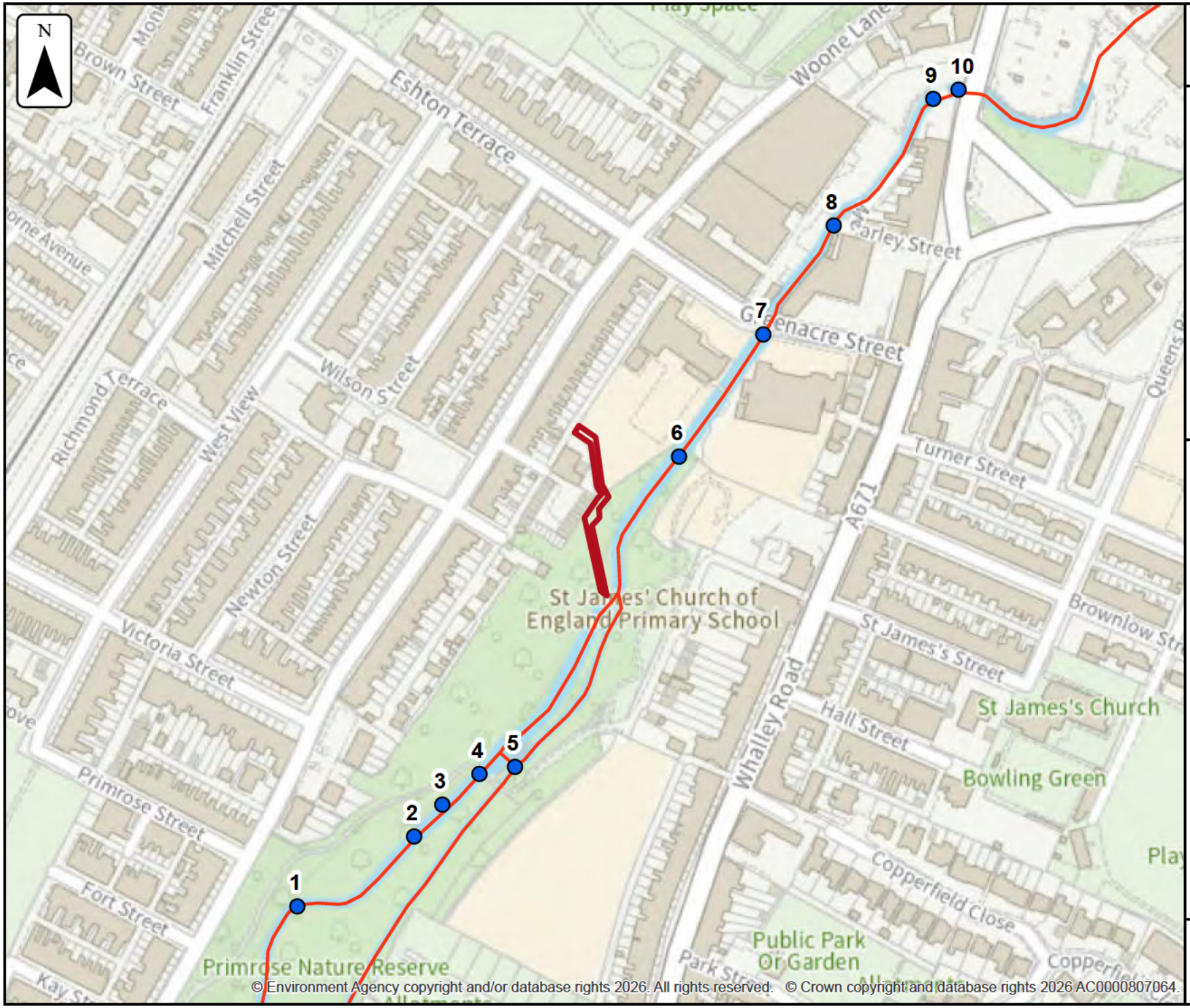
1% AEP (+35%)

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)
374074/441237

Scale
1:2,500

Created
3 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

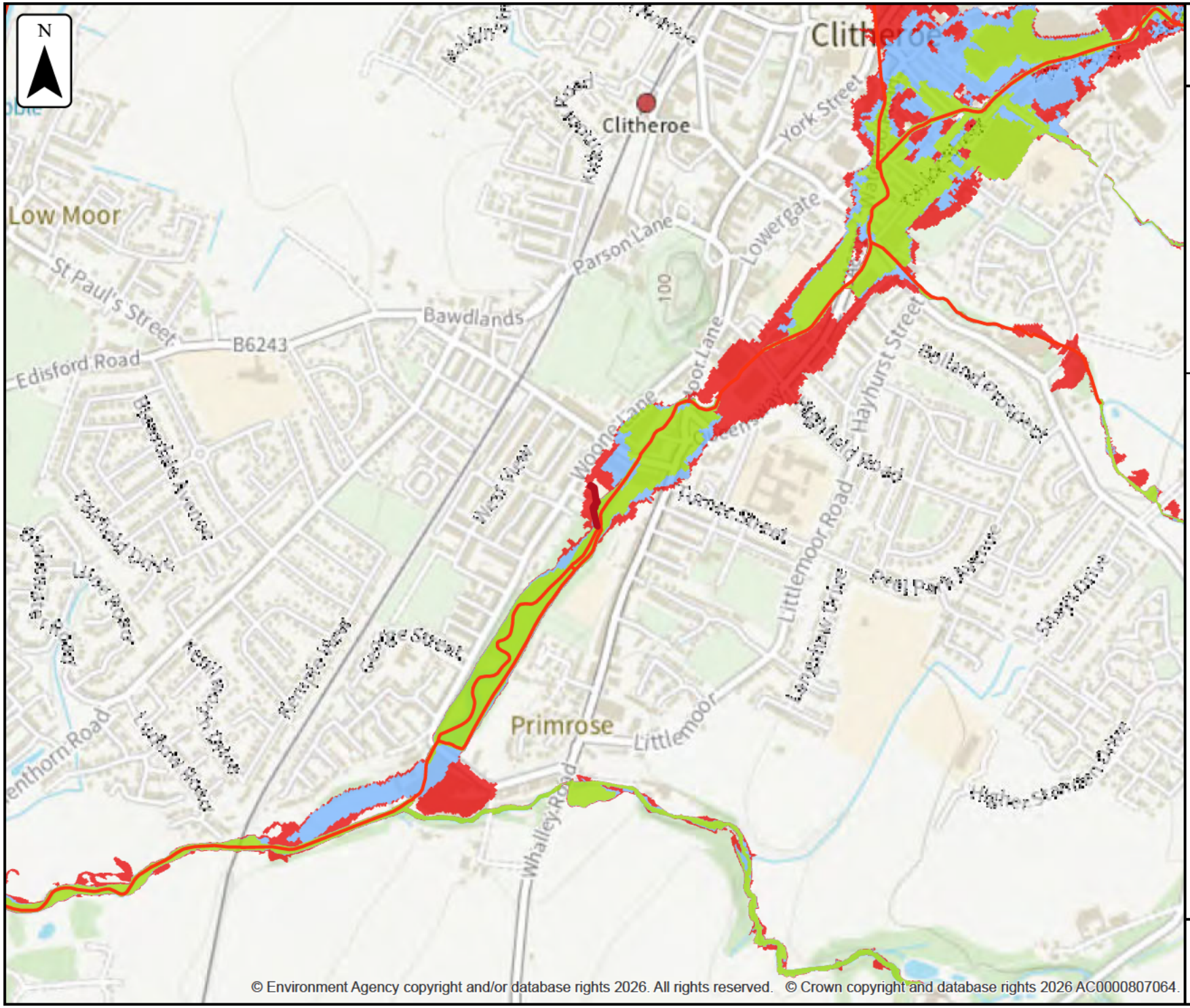
Label	Modelled location ID	Easting	Northing	1% AEP (+30%)	1% AEP (+35%)	1% AEP (+70%)	0.1% AEP (+30%)
				Level	Level	Level	Level
1	982452	373929	441040	71.01	71.03	71.07	71.20
2	982411	373986	441075	71.01	71.02	71.06	71.19
3	982433	374000	441090	71.0	71.02	71.06	71.18
4	982337	374018	441105	71.0	71.02	71.06	71.17
5	982362	374035	441108	71.03	71.05	71.09	71.25
6	982191	374115	441260	71.44	71.47	71.65	72.02
7	982466	374156	441319	71.87	71.91	72.08	72.45
8	982380	374190	441372	72.65	72.70	72.91	73.24
9	982328	374239	441434	72.67	72.73	72.92	73.24
10	982315	374251	441438	72.71	72.76	72.97	73.31

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	982452	373929	441040	38.27	43.95	50.0	70.16
2	982411	373986	441075	36.49	40.90	47.73	66.70
3	982433	374000	441090	35.09	39.07	46.10	64.43
4	982337	374018	441105	33.70	36.93	44.16	61.83
5	982362	374035	441108	12.48	12.96	15.80	22.42
6	982191	374115	441260	33.94	34.96	40.05	45.66
7	982466	374156	441319	26.85	27.32	28.22	28.49
8	982380	374190	441372	26.21	26.37	26.43	26.32
9	982328	374239	441434	25.90	25.92	25.97	25.94
10	982315	374251	441438	27.36	27.41	27.62	27.82

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)
374074/441237

Scale
1:10,000

Created
3 Mar 2026

Model name
Mearley Brook 2018

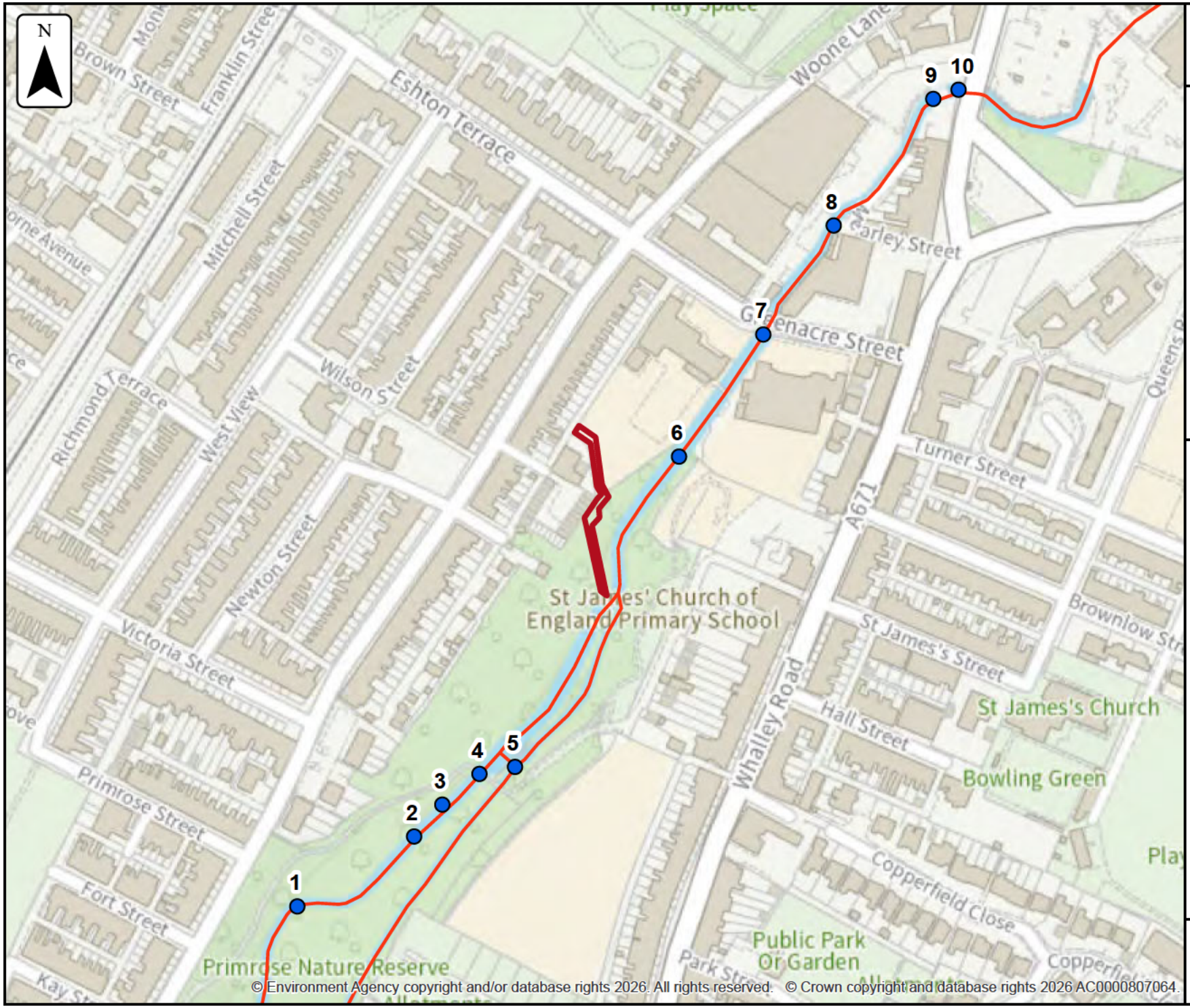
- Selected area
- Main river

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)
374074/441237

Scale
1:2,500

Created
3 Mar 2026

Model name
Mearley Brook 2018

- Selected area
- Modelled location
- Main river

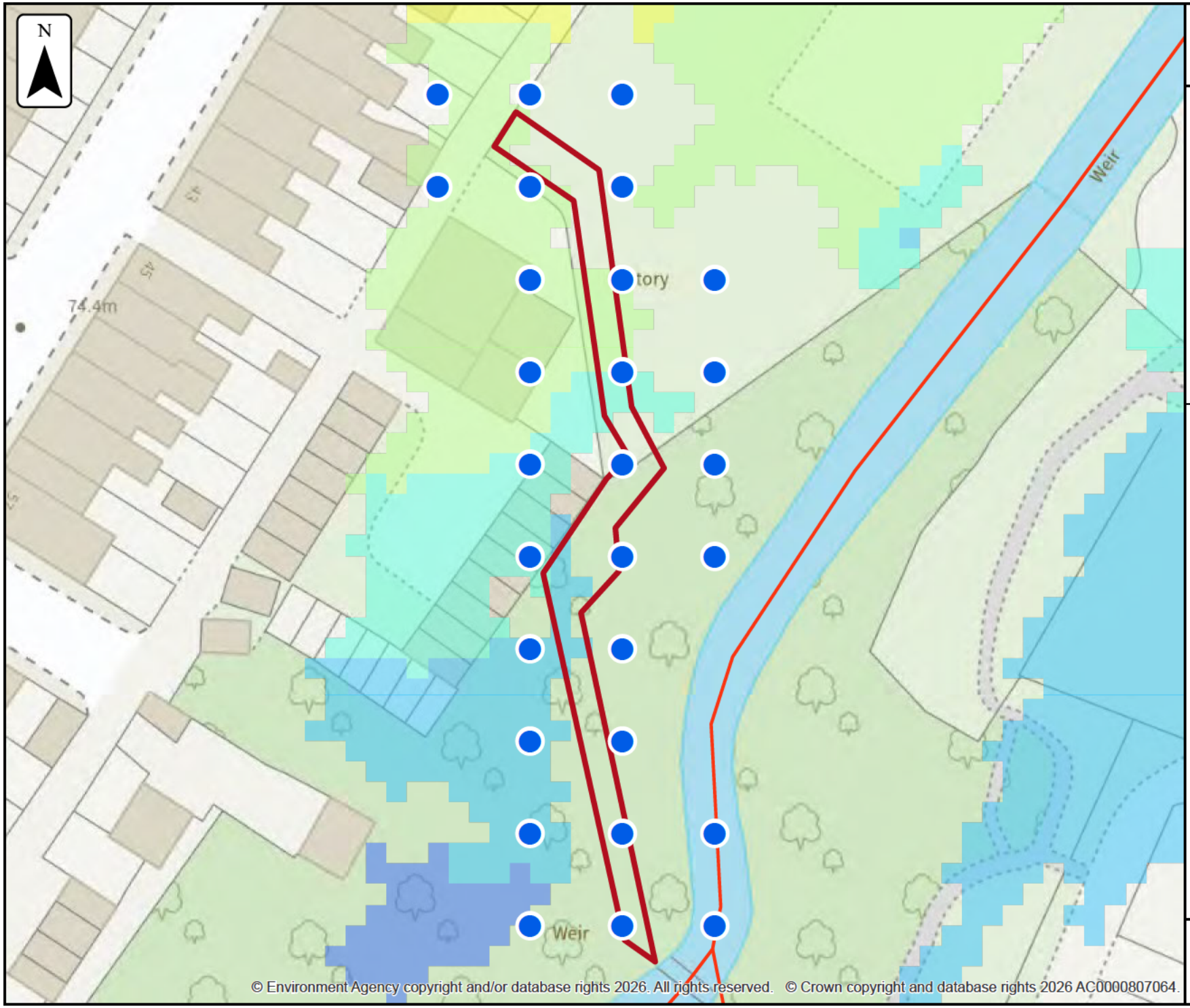
0 25 50 75 100
metres

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	982452	373929	441040	70.02	70.79	71.08	22.57	30.45	54.55
2	982411	373986	441075	70.01	70.79	71.07	21.76	29.48	51.90
3	982433	374000	441090	70.0	70.78	71.06	21.05	28.69	49.97
4	982337	374018	441105	70.0	70.78	71.06	20.58	27.73	47.88
5	982362	374035	441108	70.04	70.81	71.11	2.39	9.06	17.76
6	982191	374115	441260	70.89	71.21	71.74	21.85	31.76	42.21
7	982466	374156	441319	71.33	71.88	72.40	19.43	19.70	19.83
8	982380	374190	441372	71.78	72.31	72.70	15.92	15.86	19.85
9	982328	374239	441434	71.77	72.30	72.72	16.98	17.28	17.48
10	982315	374251	441438	71.85	72.33	72.78	16.99	17.30	17.51

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)
374074/441237

Scale
1:500

Created
3 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 71 - 71.25
- 71.25 - 71.5
- 71.5 - 71.75
- 71.75 - 72.0
- 72.0 - 72.25
- 72.25 - 72.5
- 72.5 - 72.75
- 72.75 - 73.0
- 73.0 - 73.25

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

Sample point data

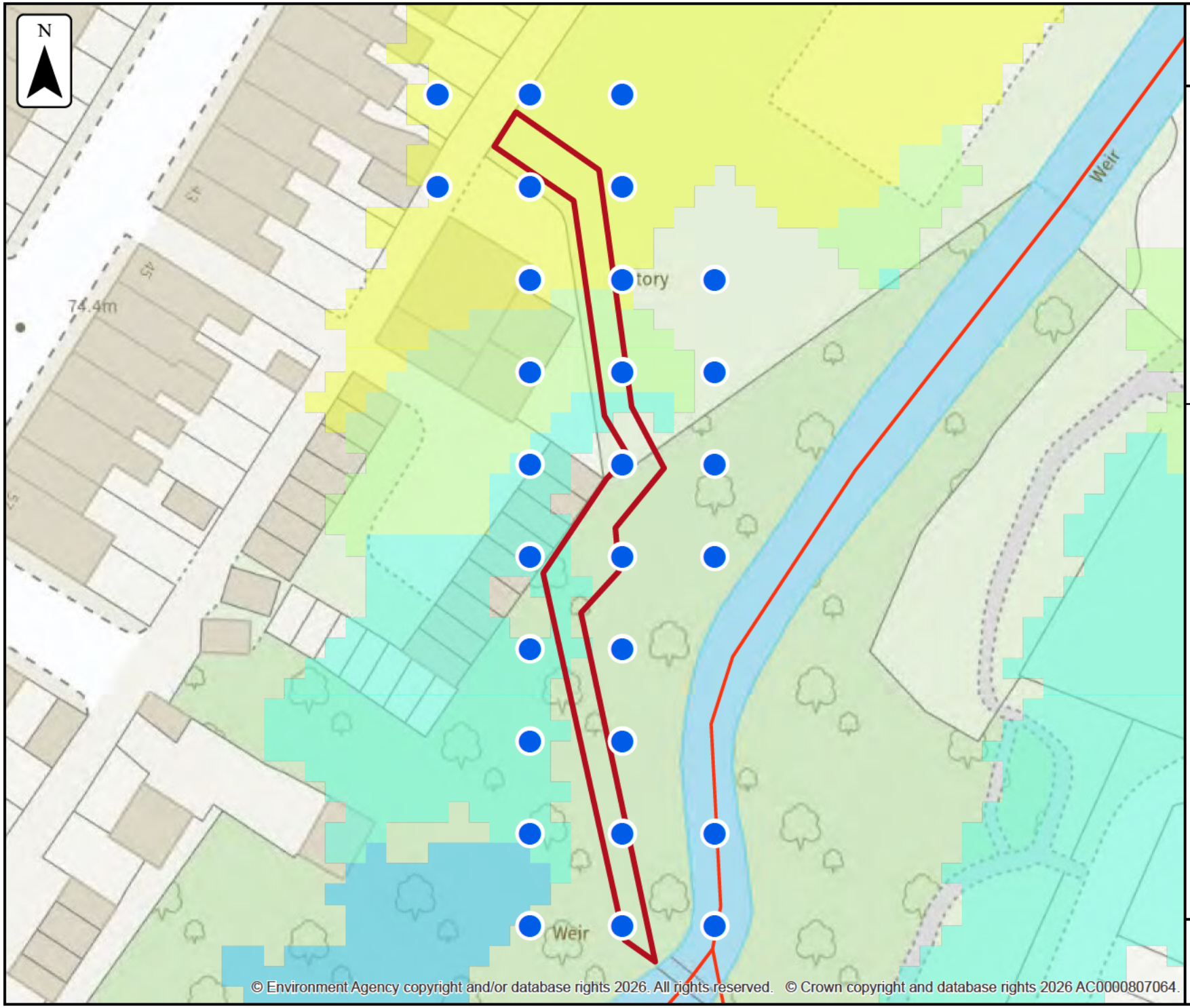
Defended

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
1	374067	441195	NoData	NoData
2	374076	441195	NoData	NoData
3	374085	441195	NoData	NoData
4	374067	441204	71.58	0.36
5	374076	441204	NoData	NoData
6	374085	441204	NoData	NoData
7	374067	441213	71.61	0.42
8	374076	441213	NoData	NoData
9	374067	441222	71.71	0.04
10	374076	441222	NoData	NoData
11	374067	441231	71.92	0.00
12	374076	441231	NoData	NoData

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
13	374085	441231	NoData	NoData
14	374067	441240	71.96	0.01
15	374076	441240	NoData	NoData
16	374085	441240	NoData	NoData
17	374067	441249	72.03	0.10
18	374076	441249	71.96	0.10
19	374085	441249	NoData	NoData
20	374067	441258	72.18	0.29
21	374076	441258	NoData	NoData
22	374085	441258	NoData	NoData
23	374058	441267	72.19	0.11
24	374067	441267	72.19	0.29

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
25	374076	441267	NoData	NoData
26	374058	441276	NoData	NoData
27	374067	441276	NoData	NoData
28	374076	441276	NoData	NoData
Max value in selected area:			72.19	0.12

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.



Environment Agency

Defended climate change modelled fluvial extent and height

Location (easting/northing)
374074/441237

Scale
1:500

Created
3 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 71 - 71.25
- 71.25 - 71.5
- 71.5 - 71.75
- 71.75 - 72.0
- 72.0 - 72.25
- 72.25 - 72.5
- 72.5 - 72.75
- 72.75 - 73.0
- 73.0 - 73.25

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

0 5 10 15 20
metres

Sample point data

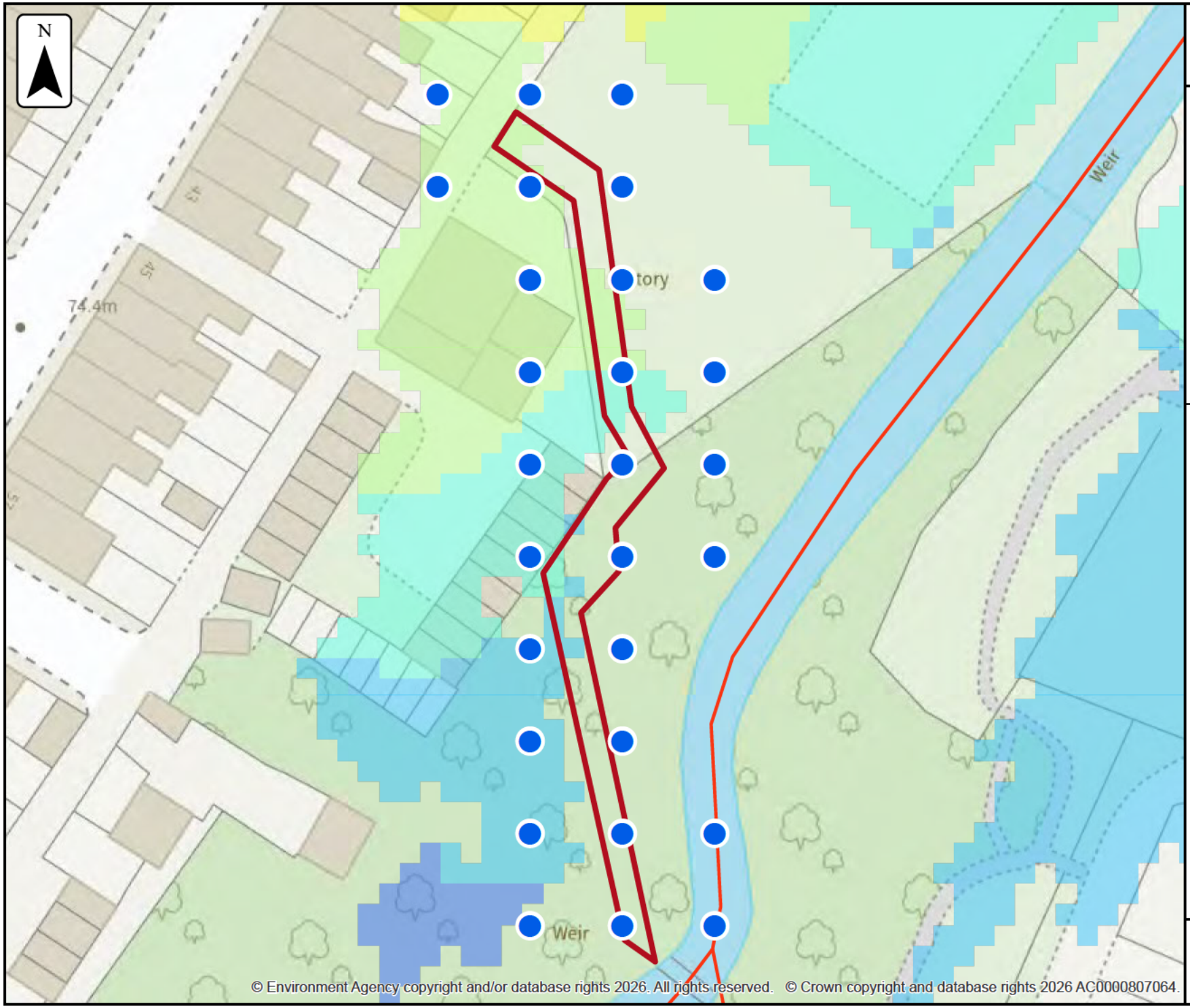
Defended climate change

Label	Easting	Northing	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Depth	Depth
1	374067	441195	NoData	NoData	NoData	NoData
2	374076	441195	NoData	NoData	NoData	NoData
3	374085	441195	NoData	NoData	NoData	NoData
4	374067	441204	71.49	71.80	0.28	0.58
5	374076	441204	NoData	NoData	NoData	NoData
6	374085	441204	NoData	NoData	NoData	NoData
7	374067	441213	71.51	71.84	0.32	0.65
8	374076	441213	NoData	NoData	NoData	NoData
9	374067	441222	71.69	71.86	0.01	0.18
10	374076	441222	NoData	NoData	NoData	NoData
11	374067	441231	71.92	71.94	0.00	0.01
12	374076	441231	NoData	NoData	NoData	NoData

Label	Easting	Northing	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Depth	Depth
13	374085	441231	NoData	NoData	NoData	NoData
14	374067	441240	71.96	72.00	0.01	0.04
15	374076	441240	NoData	NoData	NoData	NoData
16	374085	441240	NoData	NoData	NoData	NoData
17	374067	441249	72.02	72.06	0.09	0.13
18	374076	441249	71.94	72.02	0.08	0.16
19	374085	441249	NoData	NoData	NoData	NoData
20	374067	441258	72.14	72.30	0.25	0.41
21	374076	441258	NoData	72.28	NoData	0.05
22	374085	441258	NoData	NoData	NoData	NoData
23	374058	441267	72.15	72.31	0.07	0.23
24	374067	441267	72.15	72.31	0.25	0.41

Label	Easting	Northing	1% AEP (+70%)	0.1% AEP (+30%)	1% AEP (+70%)	0.1% AEP (+30%)
			Height	Height	Depth	Depth
25	374076	441267	NoData	72.32	NoData	0.08
26	374058	441276	NoData	72.32	NoData	0.16
27	374067	441276	NoData	72.32	NoData	0.19
28	374076	441276	NoData	72.34	NoData	0.04
Max value in selected area:			72.15	72.32	0.08	0.36

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.



Environment Agency

Defences removed modelled fluvial extent and height

Location (easting/northing)
374074/441237

Scale
1:500

Created
3 Mar 2026

Model name
Mearley Brook 2018

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 71 - 71.25
- 71.25 - 71.5
- 71.5 - 71.75
- 71.75 - 72.0
- 72.0 - 72.25
- 72.25 - 72.5
- 72.5 - 72.75
- 72.75 - 73.0
- 73.0 - 73.25

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

Sample point data

Defences removed

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
1	374067	441195	NoData	NoData
2	374076	441195	NoData	NoData
3	374085	441195	NoData	NoData
4	374067	441204	71.57	0.54
5	374076	441204	NoData	NoData
6	374085	441204	NoData	NoData
7	374067	441213	71.60	0.43
8	374076	441213	NoData	NoData
9	374067	441222	71.68	0.07
10	374076	441222	NoData	NoData
11	374067	441231	71.82	0.02
12	374076	441231	NoData	NoData

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
13	374085	441231	NoData	NoData
14	374067	441240	71.93	0.01
15	374076	441240	NoData	NoData
16	374085	441240	NoData	NoData
17	374067	441249	72.03	0.08
18	374076	441249	71.97	0.05
19	374085	441249	NoData	NoData
20	374067	441258	72.18	0.29
21	374076	441258	NoData	NoData
22	374085	441258	NoData	NoData
23	374058	441267	72.19	0.07
24	374067	441267	72.19	0.20

Label	Easting	Northing	0.1% AEP	0.1% AEP
			Height	Depth
25	374076	441267	NoData	NoData
26	374058	441276	NoData	NoData
27	374067	441276	NoData	NoData
28	374076	441276	NoData	NoData
Max value in selected area:			72.20	0.16

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.

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