



Proposed Garage at Bridgeway House, 16 Brookes
Lane, Whalley, BB7 9RG

Flood Risk Assessment

For Geoff Sutcliffe

KRS.0887.002.R.001.A

April 2026

www.krsenviro.com

CONTACT DETAILS

Registered Office:
KRS Environmental Ltd
3 Princes Square
Princes Street
Montgomery
Powys
SY15 6PZ

Tel: 01686 668957

Mob: 07711 257466

Email: keelan@krsenviro.com

Web: www.krsenviro.com

LinkedIn: uk.linkedin.com/in/keelanserjeant/

Proposed Garage at Bridgeway House, 16 Brookes Lane, Whalley, BB7 9RG

Project	Flood Risk Assessment
Client	Geoff Sutcliffe
Status	Final
Prepared by	Ruth Evans
Reviewed by	Keelan Serjeant BSc (Hons), MSc, MCIWEM
Date	April 2026

Disclaimer

This report has been produced by KRS Environmental Limited within the terms of the contract with the client and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Contains Environment Agency information © Environment Agency and/or database rights.

Contains public sector information licensed under the Open Government Licence v3.0.

Contains Ordnance Survey data © Crown copyright 2017 Ordnance Survey 100024198.

CONTENTS

CONTENTS	1
TABLES & FIGURES.....	3
EXECUTIVE SUMMARY	4
1.0 INTRODUCTION	5
1.1 Background	5
1.2 National Planning Policy Framework (NPPF).....	5
1.3 Report Structure	6
2.0 LOCATION & DEVELOPMENT DESCRIPTION	7
2.1 Site Location.....	7
2.2 Existing Development.....	7
2.3 Proposed Development.....	7
2.4 Ground Levels.....	7
2.5 Catchment Hydrology.....	8
2.6 Ground Conditions.....	8
3.0 FLOOD RISK.....	9
3.1 Sources of Flooding	9
3.2 Environment Agency.....	9
3.3 Climate Change.....	9
3.4 Environment Agency Flood Zones.....	9
3.5 Flood Vulnerability.....	12
3.6 Historic Flooding	12
3.7 Existing and Planned Flood Defence Measures.....	13
3.8 Fluvial (River) Flooding.....	13
3.8.1 Whalley 2017 Model	13
3.8.2 Environment Agency Rivers and Sea Map.....	17
3.8.3 Summary.....	21
3.9 Tidal (Coastal) Flooding.....	21
3.10 Groundwater Flooding.....	21
3.11 Surface Water (Pluvial) Flooding.....	22
3.12 Sewer Flooding.....	23
3.13 Flooding from Artificial Drainage Systems/Infrastructure Failure	23
3.14 The Effect of the Development on Flood Risk	24
3.15 Summary of Site Specific Flood Risk	24
4.0 SURFACE WATER DRAINAGE.....	27
4.1 Surface Water Management Overview	27
4.2 Surface Water Runoff Rates / Volumes.....	27
5.0 RISK MANAGEMENT	28
5.1 Introduction.....	28
5.2 Finished Floor Levels.....	28
5.3 Flood Resistance Measures	28
5.4 Flood Resilience Measures	29
5.5 Flood Warning and Evacuation	29
5.6 Flood Plan	29
5.7 Safe Access and Egress Route	30
5.8 Flood Warning Codes / Flood Evacuation Procedures.....	31
5.9 Flooding Consequences.....	32
6.0 SEQUENTIAL APPROACH	33
6.1 Sequential / Exception Tests.....	33
7.0 SUMMARY AND CONCLUSIONS	34



7.1	Introduction.....	34
7.2	Flood Risk.....	34
7.3	Surface Water Drainage	35
7.4	Risk Management.....	35
7.5	Sequential/Exception Tests.....	36
7.6	Conclusion	36
	APPENDICES	37
	APPENDIX 1 – Existing and Proposed Site Layout.....	38
	APPENDIX 2 – Environment Agency Data.....	39

TABLES & FIGURES

Figure 1 - Site Location.....	7
Table 1 - Peak River Flow Allowances by River Catchment.....	9
Figure 2 - Environment Agency Flood Zones: Present Day	10
Figure 3 - Environment Agency Flood Zones: Climate Change 2070 to 2125.....	11
Table 2 - Environment Agency Flood Zones and Appropriate Land Use.....	11
Table 3 - Flood Risk Vulnerability and Flood Zone ‘Compatibility’	12
Figure 4 - Environment Agency Historic Flood Outline	13
Figure 5 - Environment Agency Modelled Nodes Location Map	14
Table 4 - Environment Agency Defended Modelled Water Levels (mAOD).....	14
Figure 6 - Environment Agency Defended Modelled Flood Outlines.....	15
Figure 7 - Environment Agency Defended Climate Change Modelled Flood Outlines	15
Table 5 - Environment Agency Undefended Modelled Water Levels (mAOD).....	16
Figure 8 - Environment Agency Undefended Modelled Flood Outlines.....	16
Figure 9 - Environment Agency Undefended Climate Change Modelled Flood Outlines.....	17
Figure 10 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 30 Year Extent.....	18
Figure 11 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 100 Year Extent.....	18
Figure 12 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 1000 Year Extent.....	18
Figure 13 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 30 Year Extent.....	19
Figure 14 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 100 Year Extent.....	19
Figure 15 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 1000 Year Extent.....	19
Figure 16 - Environment Agency Rivers and Sea Flood Map without Defences: Present Day 1 in 100 Year Extent.....	20
Figure 17 - Environment Agency Rivers and Sea Flood Map without Defences: Present Day 1 in 1000 Year Extent.....	20
Figure 18 - Environment Agency Rivers and Sea Flood Map without Defences: Climate Change 1 in 100 Year Extent	20
Figure 19 - Environment Agency Rivers and Sea Flood Map without Defences: Climate Change 1 in 1000 Year Extent.....	21
Figure 20 - Environment Agency Surface Water Flood Map: High Risk 1 in 30 Year Event.....	22
Figure 21 - Environment Agency Surface Water Flood Map: Medium Risk 1 in 100 Year Event.....	22
Figure 22 - Environment Agency Surface Water Flood Map: Low Risk 1 in 1000 Year Event.....	23
Figure 23 - Environment Agency Reservoir Flood Map.....	24
Table 6 - Risk Posed by Flooding Sources.....	24
Figure 24 - Safe Access and Egress Route.....	31

EXECUTIVE SUMMARY

The Site would be expected to remain dry in all but the most extreme conditions. The consequences of flooding are acceptable, and the development would be in accordance with the requirements of the National Planning Policy Framework (NPPF). The Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF.

The Proposed Development should not therefore be precluded on the grounds of flood risk or drainage.

1.0 INTRODUCTION

1.1 Background

This Flood Risk Assessment (FRA) has been prepared by KRS Enviro at the request of Geoff Sutcliffe to support a planning application for the erection of a detached garage (“the Proposed Development”) at Bridgeway House, 16 Brookes Lane, Whalley, BB7 9RG (“the Site”).

This FRA has been carried out in accordance with guidance contained in the National Planning Policy Framework (NPPF)¹, associated Planning Practice Guidance on flood risk and coastal change² (PPG) and the PPG ‘Site-specific flood risk assessment checklist’. This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

It is recognised that developments which are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. The development design should be such that future users will not have difficulty obtaining insurance or mortgage finance, or in selling all or part of the development, as a result of flood risk issues.

1.2 National Planning Policy Framework (NPPF)

One of the key aims of the NPPF is to ensure that flood risk is taken into account at all stages of the planning process; to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk.

It advises that where new development is exceptionally necessary in areas of higher risk, this should be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall. A risk-based approach is adopted at stages of the planning process, applying a source pathway receptor model to planning and flood risk. To demonstrate this, an FRA is required and should include:

- whether a proposed development is likely to be affected by current or future flooding from all sources;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate;
- if necessary, provide the evidence to the Local Planning Authority (LPA) that the Sequential Test can be applied; and
- whether the development will be safe and pass part c) of the Exception Test if this is appropriate.

The report findings are based upon professional judgement and are summarised below with detailed recommendations provided at the end of the report. The report includes rainfall data from the Flood Estimation Handbook (FEH) and hydrogeological information from the British Geological Survey (BGS). The assessment will summarise and refer to these datasets in the text.

¹ Ministry for Housing, Communities and Local Government (2025) National Planning Policy Framework: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>

² Communities and Local Government (2022) Planning Practice Guidance - Flood Risk and Coastal Change: <https://www.gov.uk/guidance/flood-risk-and-coastal-change>

1.3 Report Structure

This FRA has the following report structure:

- Section 2 describes the existing and Proposed Development;
- Section 3 outlines the flood risk to the existing and Proposed Development;
- Section 4 details the proposed surface water drainage for the Site and assesses the potential impacts of the Proposed Development on surface water drainage;
- Section 5 outlines the mitigation measures used to manage the overall level of flood risk;
- Section 6 details the Sequential and Exception Tests; and
- Section 7 presents a summary and conclusions

2.0 LOCATION & DEVELOPMENT DESCRIPTION

2.1 Site Location

The Site is located at Bridgeway House, 16 Brookes Lane, Whalley, BB7 9RG (see Figure 1). The National Grid Reference (NGR) of the Site is 373568, 436425.



Figure 1 - Site Location

2.2 Existing Development

The existing Site consists of detached 5-bedroom residential dwelling and annex building within an established residential area (see Appendix 1).

2.3 Proposed Development

The Proposed Development is for the erection of a detached garage (see Appendix 1). Further details with regard to the Proposed Development can be found in the accompanying information submitted with the planning application.

It should be noted that a planning application for the demolition of the front bays and side office, to be replaced with new front bays within the same footprint and a sunroom to the side was granted on the 24th September 2025 under Ref: 3/2025/0384.

2.4 Ground Levels

The Site slopes from east to west with an approximate maximum ground level of 54.44 metres Above Ordnance Datum (mAOD) on the northeast boundary and an approximate minimum ground level of 53.09 on the western boundary, as per the Ordnance Survey Digital Terrain Model (DTM).

2.5 Catchment Hydrology

The Wiswell Brook is located adjacent to the northern boundary of the Site and is culverted under King Street to the west before emerging to join the River Calder. There is a reservoir located approximately 97m to the east of the Site. The River Calder is located approximately 480m to the south of the Site.

2.6 Ground Conditions

The British Geological Survey (BGS) map³ shows that the bedrock deposits at the Site consists of the Bowland Shale Formation – mudstone. Sedimentary bedrock formed between 337 and 319 million years ago during the Carboniferous period. The superficial deposits consist of Till, Devensian – diamicton. Sedimentary superficial deposit formed between 116 and 11.80 thousand years ago during the Quaternary period.

Information from the National Soil Resources Institute⁴ details the Site area as being situated on slowly permeable seasonally wet acid loamy and clayey soils with impeded drainage.

³ https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.14476159.932338379.1655890995-1831306757.1655472887

⁴ <http://www.landis.org.uk/soilscapes/>

3.0 FLOOD RISK

3.1 Sources of Flooding

All sources of flooding have been considered, these are; fluvial (river) flooding, tidal (coastal) flooding, groundwater flooding, surface water (pluvial) flooding, sewer flooding and flooding from artificial drainage systems/infrastructure failure.

3.2 Environment Agency

Information regarding the current flood risk at the application Site and local flood defences has been obtained from the Environment Agency (see Appendix 2). The Environment Agency has provided modelled data from the Whalley 2017 model.

3.3 Climate Change

Projections of future climate change, in the UK, indicate more frequent, short-duration, high intensity rainfall and more frequent periods of long duration rainfall. Guidance included within the NPPF recommends that the effects of climate change are incorporated into FRA's. Recommended precautionary sensitivity ranges for peak rainfall intensities and peak river flows are outlined in the flood risk assessments: climate change allowances guidance⁵. Table 1 shows the peak river flow allowances by river management catchment.

The flood risk assessments: climate change allowances guidance recommends that the central allowances are used to assess climate change throughout the lifetime of the development which is 100 years. Therefore, the fluvial design event for the Site is the 1 in 100 year (+36%) event.

Table 1 - Peak River Flow Allowances by River Catchment

River Catchment	Allowance Category	2020s	2050s	2080s
Ribble Management Catchment	Upper	+27%	+44%	+71%
	Higher	+19%	+29%	+46%
	Central	+16%	+23%	+36%

3.4 Environment Agency Flood Zones

A review of the Environment Agency's Flood Zones indicates that the Site is located within Flood Zones 1, 2 and 3, with a 'low to high probability' of fluvial flooding, with less than 1 in 1000 annual probability of river flooding in any year (<0.1%) to a 1 in 100 or greater annual probability of river flooding (>1%) in any year, as shown in Figures 2 and 3.

The Site should not be designated as Flood Zone 3b 'Functional Floodplain'. The definition of Flood Zone 3b 'Functional Floodplain' as per the PPG is: "This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise:

- land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or

⁵ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#high-allowances>

- *land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).*

Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.”

The Site does not comprise land where water has to flow or be stored in times of flood. The Site does not perform a water conveyance flood route or a flood storage area. The Site does not provide a function of flood conveyance (i.e. free flow) or flood storage, either through natural processes, or by design (e.g. washlands and flood storage areas). The Site is already developed therefore, the Site is located within Flood Zone 3a.

The Flood Zones are the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. They show the worst case scenario. The Environment Agency Flood Zones and acceptable development types are explained in Table 2. Table 2 shows that some development types are generally acceptable in Flood Zones 1, 2 and 3a.

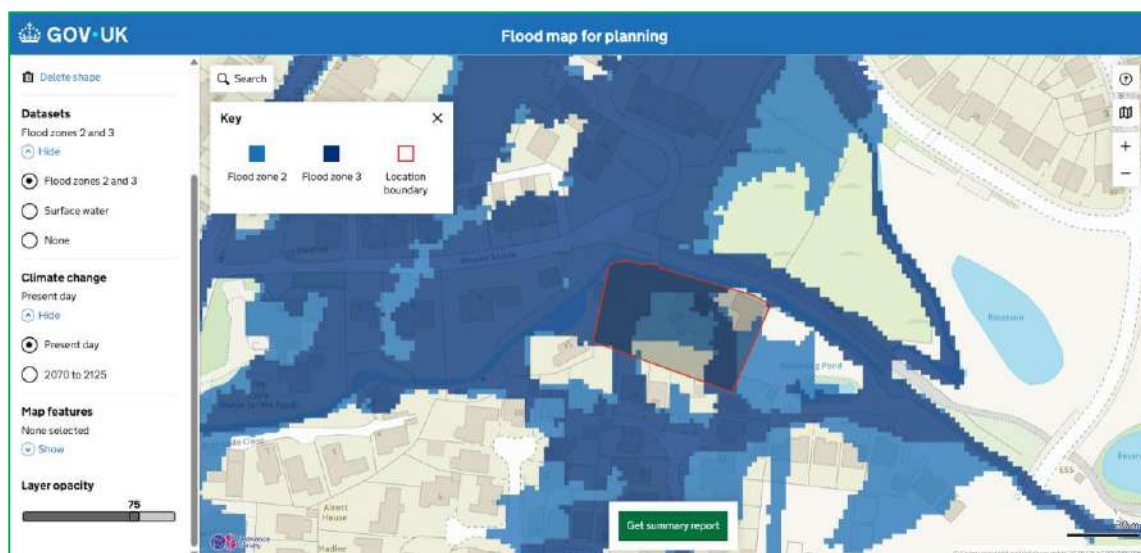


Figure 2 - Environment Agency Flood Zones: Present Day

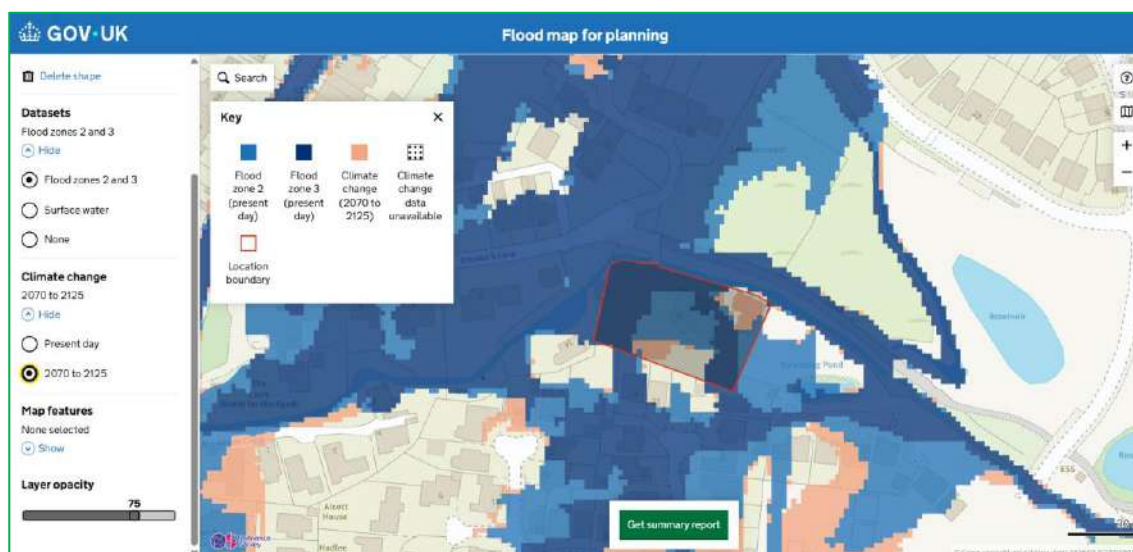


Figure 3 - Environment Agency Flood Zones: Climate Change 2070 to 2125

Table 2 - Environment Agency Flood Zones and Appropriate Land Use

Flood Zone	Probability	Explanation	Appropriate Land Use
Zone 1	Low	Less than a 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)	All development types generally acceptable
Zone 2	Medium	Between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% 0.1%) in any year	Most development type are generally acceptable
Zone 3a	High	A 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year	Some development types not acceptable
Zone 3b	'Functional Floodplain'	<p>This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise:</p> <ul style="list-style-type: none"> land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). <p>Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)</p>	Some development types not acceptable

3.5 Flood Vulnerability

In the PPG, appropriate uses have been identified for the Flood Zones. Applying the Flood Risk Vulnerability Classification in the PPG, the existing and proposed use is classified as 'more vulnerable'.

The Proposed Development will not change the nature or times of occupation or introduce a new 'more vulnerable' use into the floodplain. Table 3 of this report and the PPG state that 'more vulnerable' uses are appropriate within Flood Zones 3a after the completion of a satisfactory FRA.

Table 3 - Flood Risk Vulnerability and Flood Zone 'Compatibility'

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception test required	✓	✓
Zone 3a	Exception test required	✓	✗	Exception test required	✓
Zone 3b 'Functional Floodplain'	Exception test required	✓	✗	✗	✗

Key: ✓: Development is appropriate, ✗: Development should not be permitted.

3.6 Historic Flooding

Environment Agency data shows that the Site has not historically flooded, which has been confirmed by the client. However, it is noted that flooding occurred in December 2015 close to the northern and western boundaries of the Site however, this did not affect the Site (see Figure 4). The channel capacity was exceeded as no raised flood defences were in place at the time. There are no other records of anecdotal information of flooding at the Site including within the British Hydrological Society "Chronology of British Hydrological Events". No other historical records of flooding for the Site have been recorded. Therefore, it has been concluded that the Site has not historically flooded in the recent past.

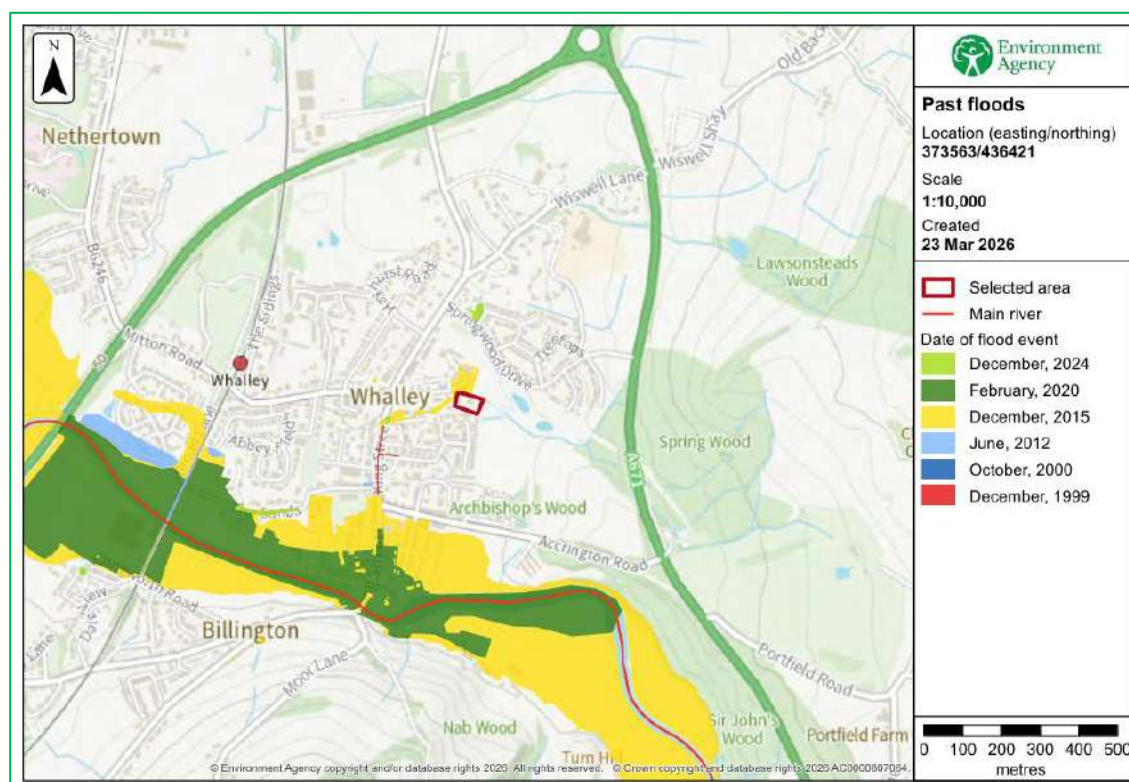


Figure 4 - Environment Agency Historic Flood Outline

3.7 Existing and Planned Flood Defence Measures

The Environment Agency data shows that the Site is not protected against flooding by flood defence measures. However, further property level protection measures will be used to protect the Site from flooding these are discussed in Section 5.0.

3.8 Fluvial (River) Flooding

The primary, but unlikely, flood risk posed to the Site is from fluvial flooding from the adjacent Wiswell Brook.

3.8.1 Whalley 2017 Model

Actual Defended Scenario

The Environment Agency has provided defended modelled data from the Whalley 2017 model. Figure 5 shows the model node locations and Table 4 shows the defended Environment Agency floodplain water levels for the Site. The modelled water levels have been compared to the ground level of the Site and areas within the vicinity of the Site to assess the flood risk at the Site in detail. Figures 6 and 7 show the Environment Agency defended modelled flood outlines.

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the defended 1 in 100 year (+15%) and the 1 in 1000 year events. Due to the small difference between the defended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the defended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the defended 1 in 100 year (+36%) event. The Site will be flood free during the defended 1 in 100 year (+36%) event and the 1 in 1000 year event.

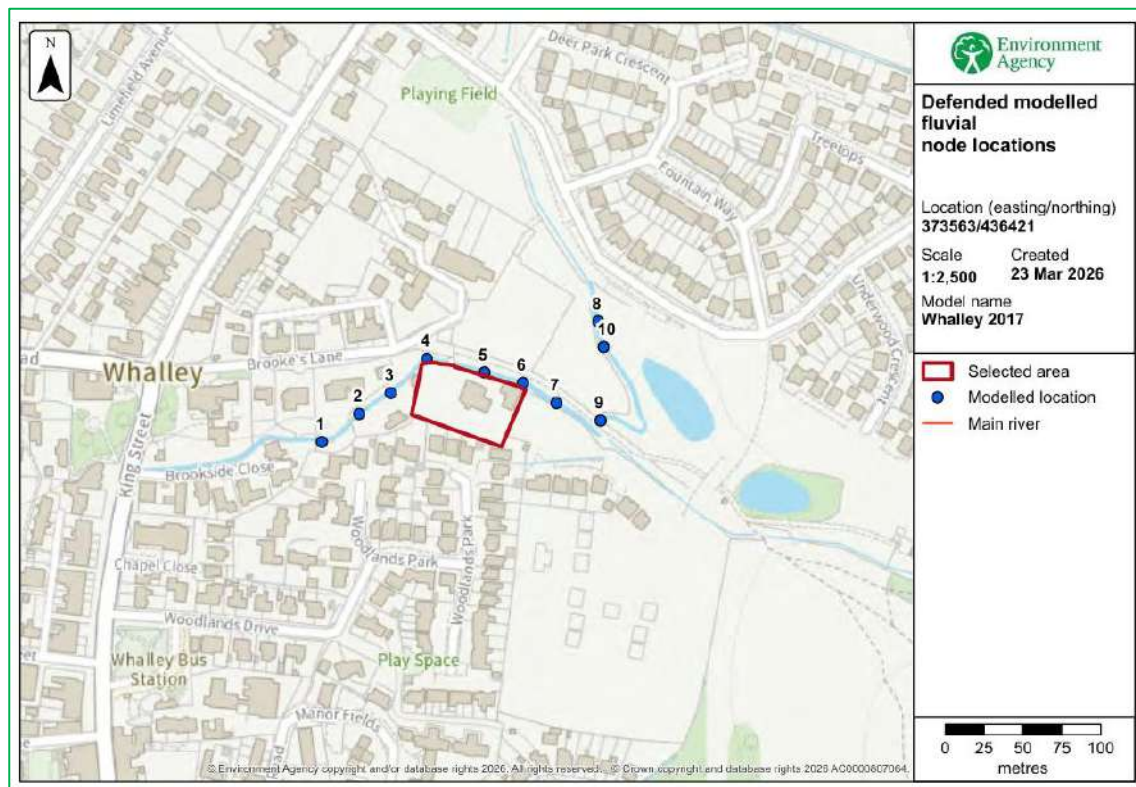


Figure 5 - Environment Agency Modelled Nodes Location Map

Table 4 - Environment Agency Defended Modelled Water Levels (mAOD)

Node Label	Easting	Northing	Return Period (years)					
			25	75	100	100 (+15%)	200	1000
3	373514	436427	51.24	51.38	51.42	51.52	51.53	51.83
4	373538	436449	52.17	52.27	52.29	52.36	52.37	52.56
5	373575	436440	52.39	52.46	52.48	52.54	52.54	52.72
6	373599	436433	52.81	52.83	52.85	52.88	52.88	52.79

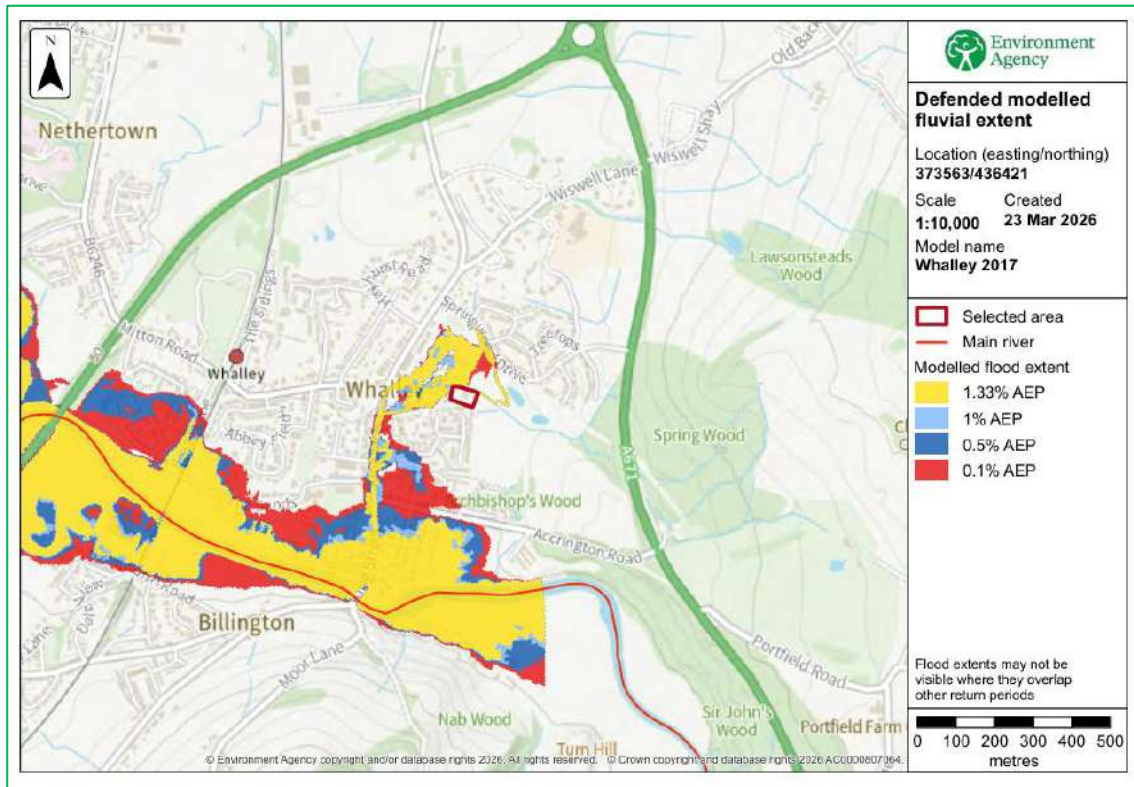


Figure 6 - Environment Agency Defended Modelled Flood Outlines

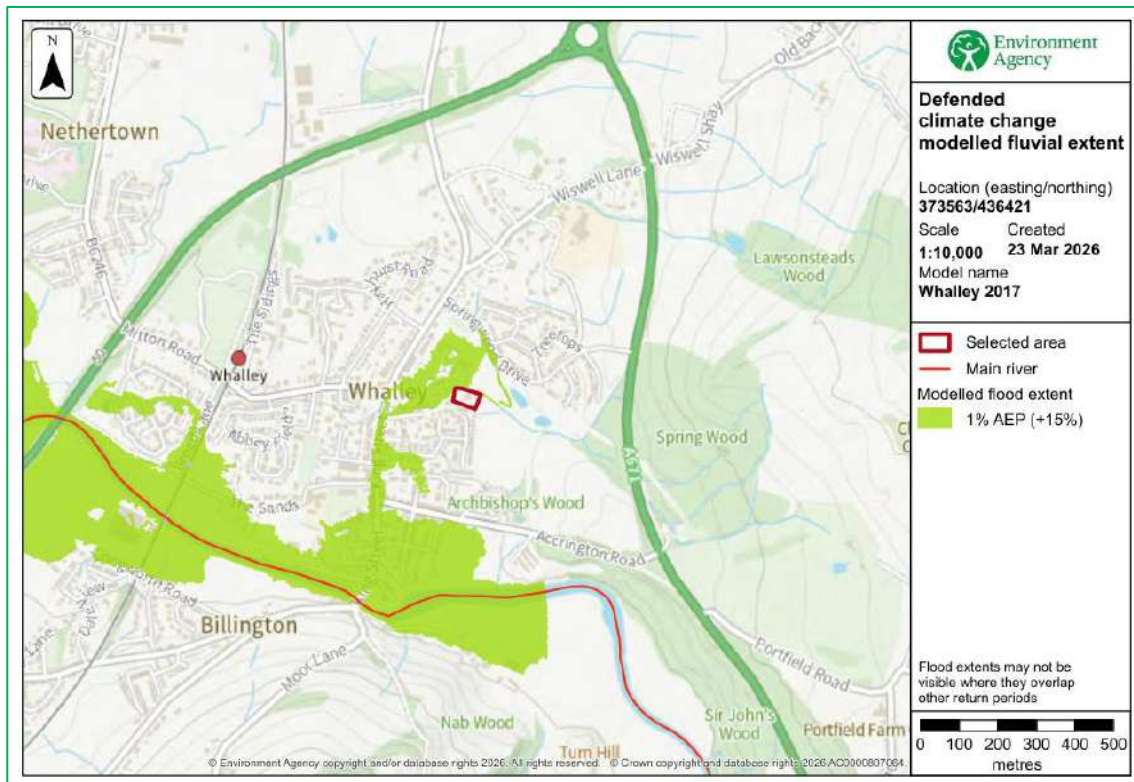


Figure 7 - Environment Agency Defended Climate Change Modelled Flood Outlines

Residual Undefended Scenario

The Environment Agency has provided undefended modelled data from the Whalley 2017 model. Table 5 shows the undefended Environment Agency floodplain water levels for the Site. The modelled water levels have been compared to the ground level of the Site and areas within the vicinity of the Site to assess the flood risk at the Site in detail. Figures 8 and 9 show the Environment Agency undefended modelled flood outlines.

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+15%) and the 1 in 1000 year events. Due to the small difference between the undefended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the undefended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the undefended 1 in 100 year (+36%) event. The Site will be flood free during the undefended 1 in 100 year (+36%) event and the 1 in 1000 year event.

Table 5 - Environment Agency Undefended Modelled Water Levels (mAOD)

Node Label	Easting	Northing	Return Period (years)					
			25	75	100	100 (+15%)	200	1000
3	373514	436427	51.25	51.38	51.42	51.52	51.53	51.83
4	373538	436449	52.17	52.27	52.29	52.36	52.37	52.56
5	373575	436440	52.39	52.46	52.48	52.54	52.54	52.72
6	373599	436433	52.81	52.83	52.85	52.88	52.88	52.97

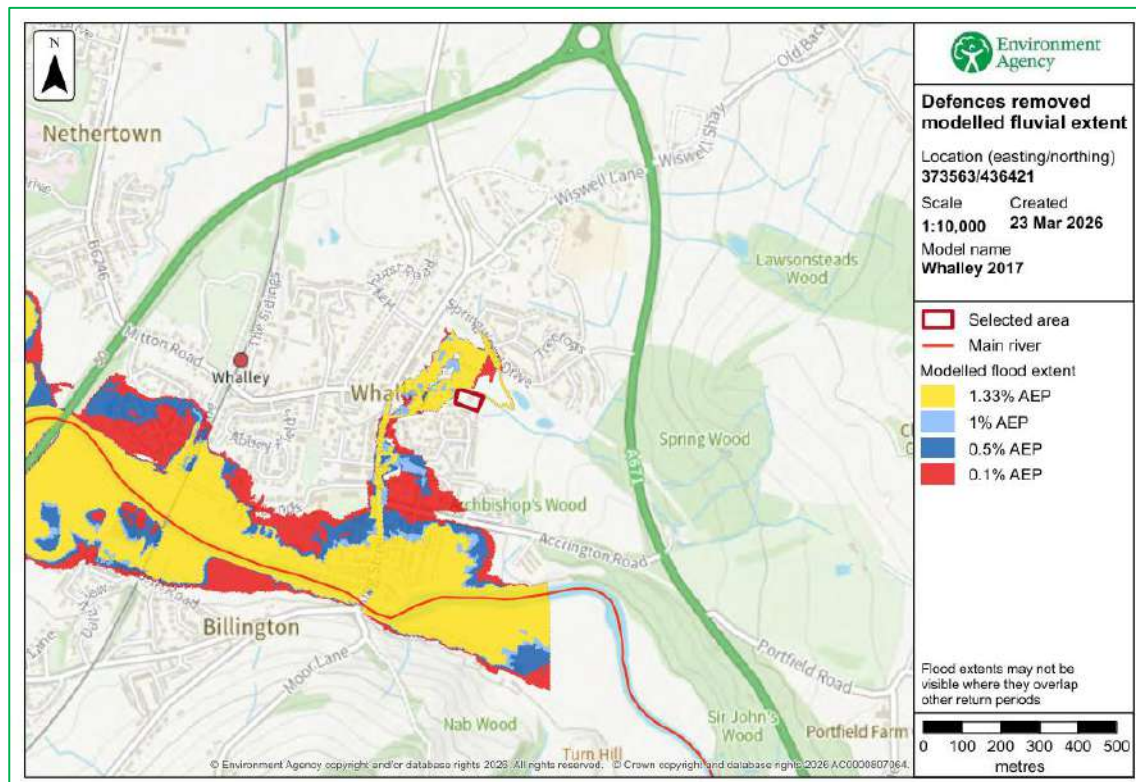


Figure 8 - Environment Agency Undefended Modelled Flood Outlines

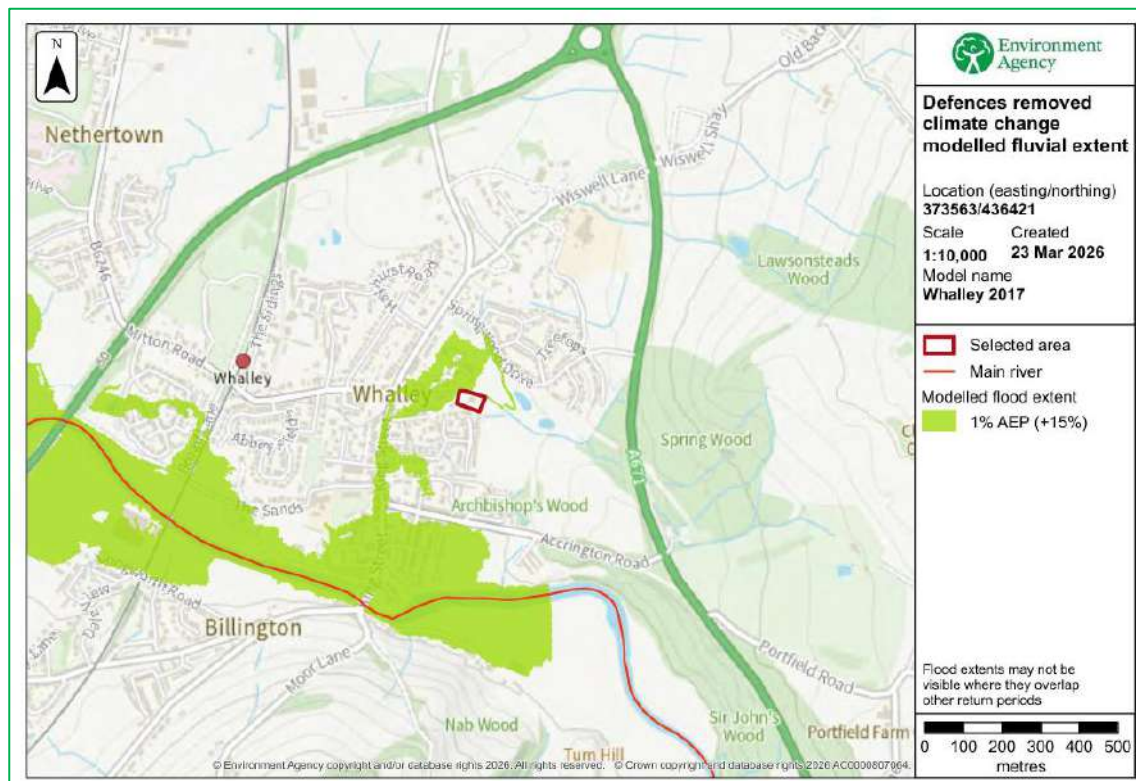


Figure 9 - Environment Agency Undefended Climate Change Modelled Flood Outlines

3.8.2 Environment Agency Rivers and Sea Map

The Site is located within Flood Zones 1, 2 and 3a therefore to assess the fluvial flood risk posed to the Site further and to provide a conservative estimate of flood risk the Environment Agency Rivers and Sea flood map has been used. The Environment Agency Rivers and Sea flood map is representative of the fluvial flood risk (see Figures 10 to 19). The Site is shown to have a ‘low to high probability’ of fluvial flooding, with less than 1 in 1000 annual probability of river flooding in any year (<0.1%) to a 1 in 100 or greater annual probability of river flooding (>1%) in any year.

Actual Defended Scenario

The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated with floodwater for events up to and including the defended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude that the Proposed Development may be inundated with floodwater during the defended scenarios.



Figure 10 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 30 Year Extent

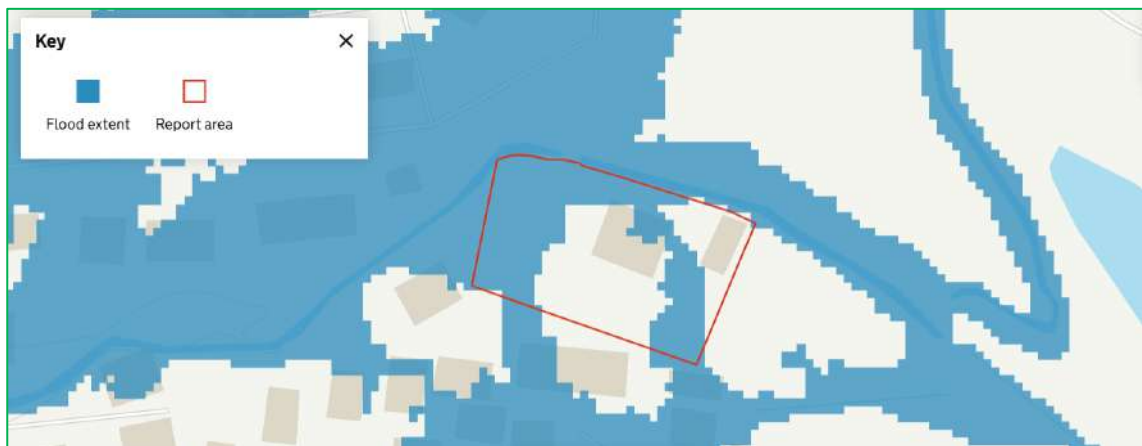


Figure 11 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 100 Year Extent



Figure 12 - Environment Agency Rivers and Sea Flood Map with Defences: Present Day 1 in 1000 Year Extent

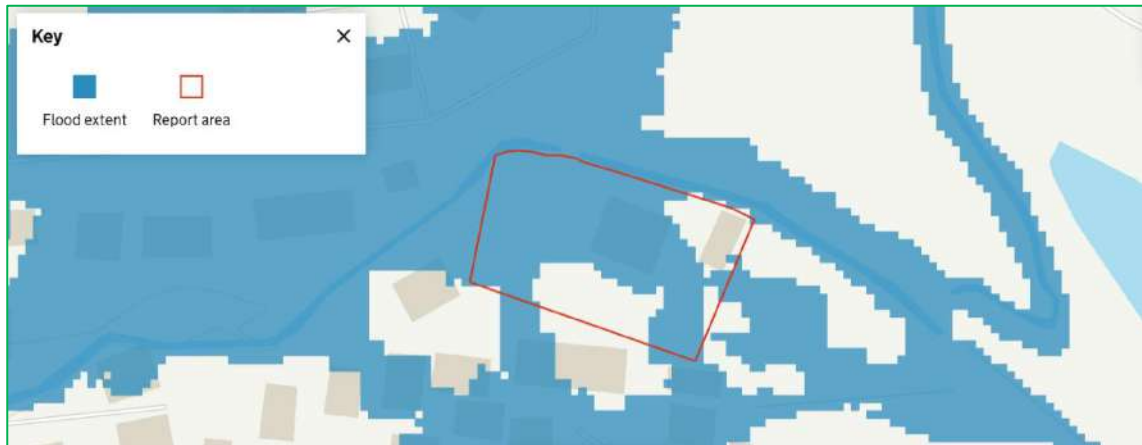


Figure 13 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 30 Year Extent



Figure 14 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 100 Year Extent



Figure 15 - Environment Agency Rivers and Sea Flood Map with Defences: Climate Change 1 in 1000 Year Extent

Residual undefended Scenario

The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated with floodwater for events up to and including the undefended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude

that the Proposed Development may be inundated with floodwater during the undefended scenarios.

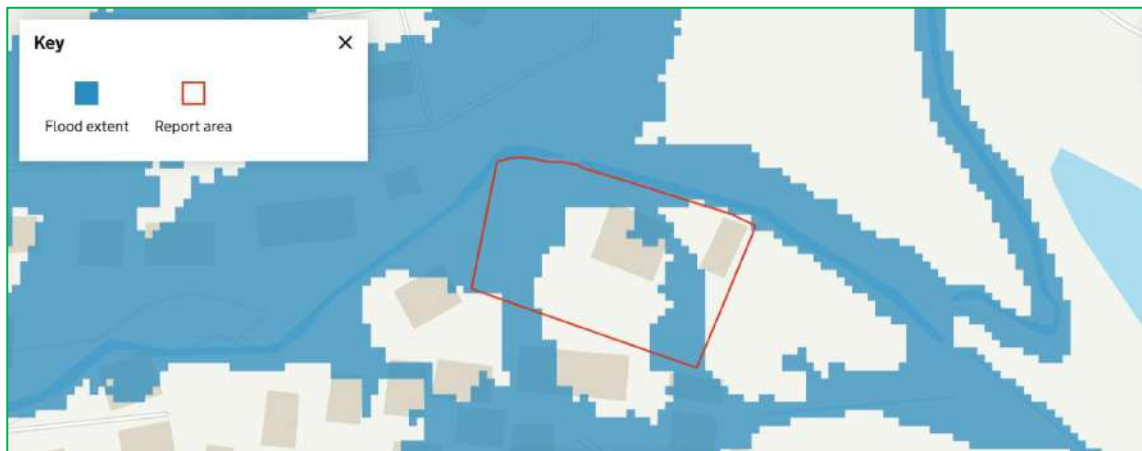


Figure 16 - Environment Agency Rivers and Sea Flood Map without Defences: Present Day 1 in 100 Year Extent



Figure 17 - Environment Agency Rivers and Sea Flood Map without Defences: Present Day 1 in 1000 Year Extent



Figure 18 - Environment Agency Rivers and Sea Flood Map without Defences: Climate Change 1 in 100 Year Extent

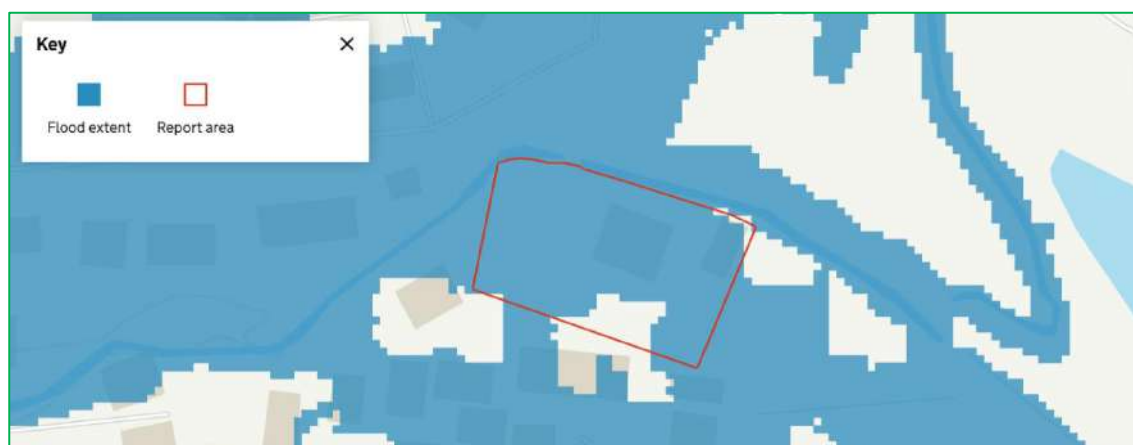


Figure 19 - Environment Agency Rivers and Sea Flood Map without Defences: Climate Change 1 in 1000 Year Extent

3.8.3 Summary

Flooding to a water depth of 0.20m has a low chance with an annual probability of less than 1 in 1000 years (<0.1%) during the present day scenario and during the 2036 to 2069 scenario. The mechanism for flooding is generally prolonged episodes of rainfall, which affords good time for flood warnings to be issued. The likelihood of a rapid water level rise and possible rapid inundation of urban areas posing a risk to life is considered to be minimal with a forewarning of two (2) days of a pending flood event. The site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a minimal actual and residual flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**. The risk from this source will be further mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site (see Section 5.0).

3.9 Tidal (Coastal) Flooding

The Site is not located within the vicinity of tidal flooding sources and the risk of tidal flooding is considered to be **not significant**.

3.10 Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements and car parks) underlain by permeable rocks (aquifers).

Environment Agency data shows that flooding from groundwater is unlikely in this area. Site ground conditions suggest a low potential for groundwater flooding. The risk of flooding from groundwater flooding is considered to be **not significant**.

3.11 Surface Water (Pluvial) Flooding

The Site is not situated near to large areas of poor permeability and the soil conditions at the Site and within the vicinity of the Site indicate that the Site would not be at risk of surface water flooding. Surface water flooding tends to occur sporadically in both location and time such surface water would tend to be confined to the streets around the development.

The Environment Agency Surface Water flood map shows that the Site has a very low risk of surface water flooding with a chance of flooding of less than a 1 in 1000 (0.1%) annual probability of flooding in any year, as shown in Figures 20 to 22.

Given the scale and nature of the Proposed Development and the size and location of the surface water flooding sources it has been concluded that surface water flooding poses a very low flood risk to the Site. Therefore, the risk of flooding from surface water flooding is considered to be **not significant**.

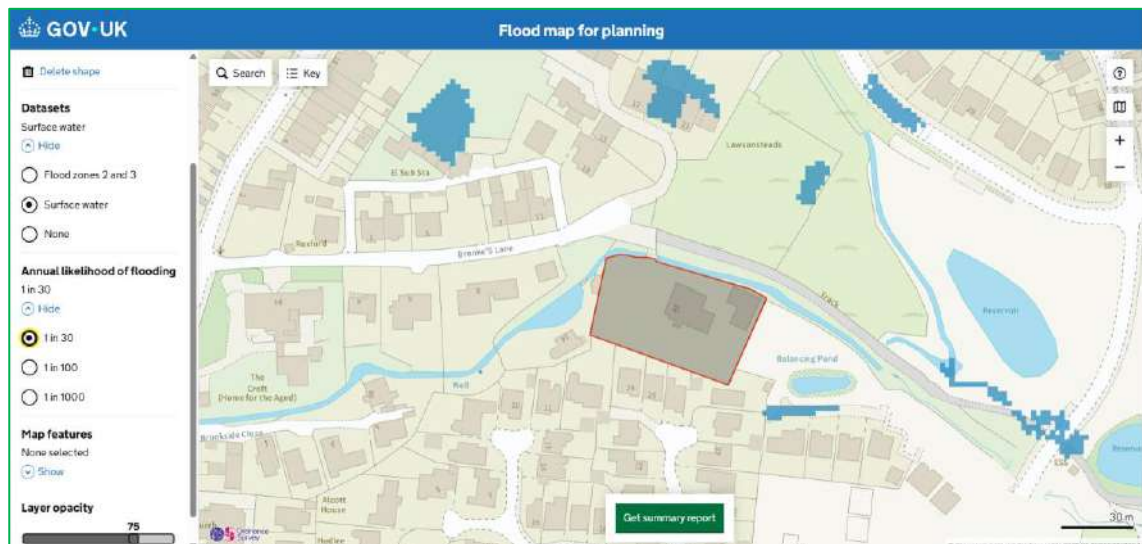


Figure 20 - Environment Agency Surface Water Flood Map: High Risk 1 in 30 Year Event

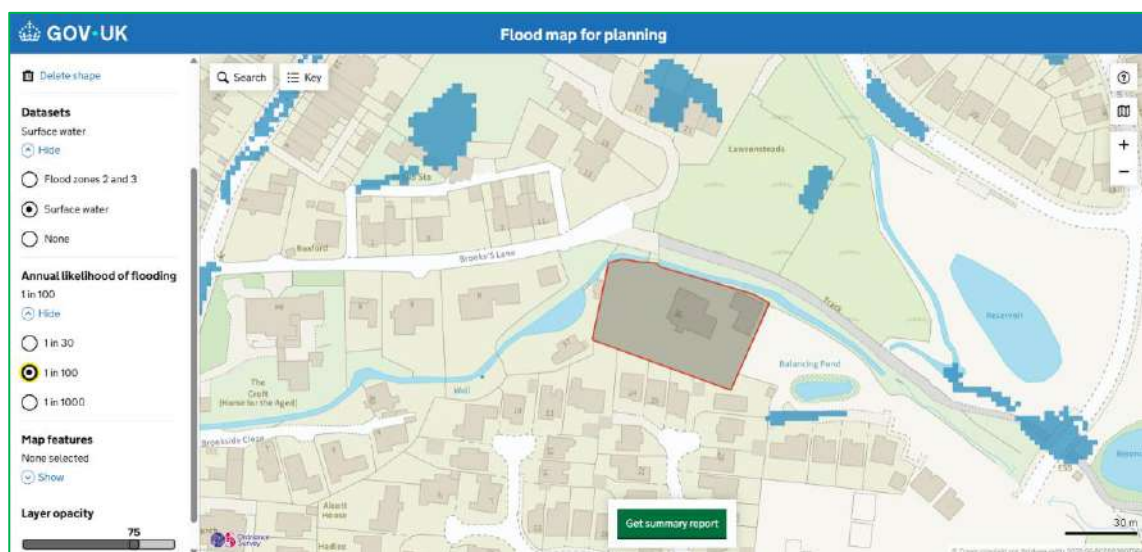


Figure 21 - Environment Agency Surface Water Flood Map: Medium Risk 1 in 100 Year Event



Figure 22 - Environment Agency Surface Water Flood Map: Low Risk 1 in 1000 Year Event

3.12 Sewer Flooding

Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time such flood flows would tend to be confined to the streets around the development.

There are existing sewers located within the vicinity of the Site and these will inevitably have a limited capacity so in extreme conditions there would be surcharges, which may in turn cause flooding. Flood flows could also be generated by burst water mains, but these would tend to be of a restricted and much lower volume than weather generated events and so can be discounted for the purposes of this assessment.

Given the design parameters normally used for drainage design in recent times and allowing for some deterioration in the performance of the installed systems, which are likely to have been in place for many years, an appropriate flood risk probability from this source could be assumed to have a return period in the order of 1 in 10 to 1 in 20 years. The provision of adequate level difference between the ground floors and adjacent ground level would reduce the annual probability of damage to property from this source to 1 in 100 years or less. Therefore, the risk of flooding from sewer flooding is considered to be **not significant**.

3.13 Flooding from Artificial Drainage Systems/Infrastructure Failure

There are no other nearby artificial water bodies, reservoirs, water channels and artificial drainage systems that could be considered a flood risk to the Site. The Environment Agency Reservoir flood map shows that the Site is not at risk of reservoir flooding (see Figure 23). The risk of flooding from artificial drainage systems/infrastructure failure is considered to be **not significant**.



Figure 23 - Environment Agency Reservoir Flood Map

3.14 The Effect of the Development on Flood Risk

The Proposed Development will have no impact on flood risk and the overall direction of the movement of water will be maintained within the developed Site and surrounding area. There will no net loss in flood storage capacity. The conveyance routes (flow paths) will not be blocked or obstructed.

There will be no detriment to the flood storage capacity of the Site. There will be no increase in the flood water levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

3.15 Summary of Site Specific Flood Risk

A summary of the sources of flooding and a review of the risk posed by each source at the Site is shown in Table 6.

Table 6 - Risk Posed by Flooding Sources

Sources of Flooding	Potential Flood Risk	Potential Source	Probability/Significance
Fluvial Flooding	Yes	Wiswell Brook	Medium
Tidal Flooding	No	None Reported	None
Groundwater Flooding	No	None Reported	None
Surface Water Flooding	No	None Reported	None
Sewer Flooding	No	None Reported	None
Flooding from Artificial Drainage Systems/Infrastructure Failure	No	None Reported	None

The Site is unlikely to flood except in extreme conditions. The primary, but unlikely, flood risk to the Site is from fluvial flooding from the adjacent Wiswell Brook. The Site is located within Flood Zones 1, 2 and 3a, with a ‘low to high probability’ of fluvial flooding, with less than 1 in 1000 annual

probability of river flooding in any year (<0.1%) to a 1 in 100 or greater annual probability of river flooding (>1%) in any year

The existing and proposed use is classified as 'more vulnerable'. The Proposed Development will not change the nature or times of occupation or introduce a new 'more vulnerable' use into the floodplain. 'More vulnerable' uses are appropriate within Flood Zones 3a after the completion of a satisfactory FRA.

Actual Defended Scenario

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the defended 1 in 100 year (+15%) event and the 1 in 1000 year event. Due to the small difference between the defended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the defended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the defended 1 in 100 year (+36%) event. The Site will be flood free during the defended 1 in 100 year (+36%) event and the 1 in 1000 year event.

To assess the fluvial flood risk posed to the Site further and to provide a conservative estimate of flood risk the Environment Agency Rivers and Sea flood map has been used. The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated with floodwater for events up to and including the defended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude that the Proposed Development may be inundated with floodwater during the defended scenarios.

Residual Undefended Scenario

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+15%) event and the 1 in 1000 year event. Due to the small difference between the undefended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the undefended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the undefended 1 in 100 year (+36%) event. The Site will be flood free during the undefended 1 in 100 year (+36%) event and the 1 in 1000 year event.

To assess the fluvial flood risk posed to the Site further and to provide a conservative estimate of flood risk the Environment Agency Rivers and Sea flood map has been used. The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated with floodwater for events up to and including the undefended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude that the Proposed Development may be inundated with floodwater during the undefended scenarios.

Summary

Flooding to a water depth of 0.20m has a low chance with an annual probability of less than 1 in 1000 years (<0.1%) during the present day scenario and during the 2036 to 2069 scenario. The mechanism for flooding is generally prolonged episodes of rainfall, which affords good time for flood warnings to be issued. The likelihood of a rapid water level rise and possible rapid inundation of urban areas posing a risk to life is considered to be minimal with a forewarning of two (2) days of a pending flood event. The site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a minimal actual and residual

flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**.

The flood risk at the Site will be further mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site (see Section 5.0).

The Proposed Development will have no impact on flood risk and the overall direction of the movement of water will be maintained within the developed Site and surrounding area. There will be no net loss in flood storage capacity. The conveyance routes (flow paths) will not be blocked or obstructed.

There will be no detriment to the flood storage capacity of the Site. There will be no increase in the flood water levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

4.0 SURFACE WATER DRAINAGE

4.1 Surface Water Management Overview

It is recognised that consideration of flood issues should not be confined to the floodplain. The alteration of natural surface water flow patterns through developments can lead to problems elsewhere in the catchment, particularly flooding downstream. For example, replacing vegetated areas with roofs, roads and other paved areas can increase both the total and the peak flow of surface water runoff from the Site. Changes of land use on previously developed land can also have significant downstream impacts where the existing drainage system may not have sufficient capacity for the additional drainage.

An assessment of the surface water runoff rates has been undertaken, in order to determine the surface water options and attenuation requirements for the Site. The assessment considers the impact of the proposals compared to current conditions. Therefore, the surface water attenuation requirement for the developed Site can be determined and reviewed against existing arrangements.

The surface water drainage arrangements for any development site should be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the Proposed Development unless specific off-site arrangements are made and result in the same net effect.

4.2 Surface Water Runoff Rates / Volumes

The Proposed Development will not alter the impermeable areas of the Site. There will be no increase in surface water runoff or exacerbation of off-site risk as a result of the development. It is understood that the existing drainage infrastructure at the Site efficiently and effectively manages surface water runoff generated at the Site.

5.0 RISK MANAGEMENT

5.1 Introduction

The flood risk at this location is considered suitable for the Proposed Development within the NPPF. In this flood zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development and the use of flood mitigation measures.

The flooding sources will be mitigated on the Site by using a number of techniques, and mitigation strategies to manage and reduce the overall flood risk at the Site. This will ensure the development will be safe and there is:

- Minimal risk to life;
- Minimal disruption to people living and working in the area;
- Minimal potential damage to property;
- Minimal impact of the Proposed Development on flood risk generally; and;
- Minimal disruption to natural heritage.

The flood risk at the Site will be reduced by mitigation measures; these are discussed in more detail below.

5.2 Finished Floor Levels

The finished floor levels of the proposed garage will be raised above the external ground levels. It is recognised however that owing to limited headroom constraints, massing, planning policy and Building Regulations it is considered impractical to raise the finished floor levels further. Therefore, in order to mitigate against this, it is recommended that the occupants of the Site are sign up to receive flood warnings from the Environment Agency and a Flood Plan to a safe area away from the building during times of flood is developed.

A combination of resistance (proofing) and resilience measures will be included to provide further protection. This is discussed below.

5.3 Flood Resistance Measures

The flood risk can be mitigated through the design of the proposed garage. Flood resistance measures are measures that help resist floodwaters entering a property (airbrick covers are an example of a flood resistance measure). Flood resistant measures will be used, including:

- The walls of the garage will be thick.
- Sealant will be used around all external doors and windows.
- All windows will be located above ground levels.
- All external doors and windows are constructed from hard wearing materials.

These factors will prevent water entering the property and make the property more resistant to seepage.

5.4 Flood Resilience Measures

Flood resilience measures are designed in such a way as to reduce the cost and time required to reinstate the property should it be flooded (tiled floors are an example of a flood resilience measure).

The property will be constructed in such a way that although floodwater may enter the building, elements that are damaged by floodwater can be easily repaired or replaced. This is a form of flood resilience. They are suitable as no other measure is practicable. Robust materials and finishes will be used.

All electrics wiring, switches, sockets, socket outlets etc. to be located a minimum of 450mm above the finished floor levels.

5.5 Flood Warning and Evacuation

The Site is located in a flood risk area therefore; the Site will participate in the Environment Agency flood warning telephone service for the River Calder at Whalley. The Site will register contact details with the Environment Agency's Flood Warnings Service (Floodline 0345 988 1188) in order to receive Flood Warnings. The Environment Agency operate a free flood warning service providing alerts by phone, text or email when flooding is anticipated providing an opportunity for home owners to take necessary precautions, giving enough time for the building to be safely evacuated and mitigation measures to be put in place.

All occupants/visitors of the Site will be made aware of the Environment Agency Floodline telephone number (call Floodline on 0345 988 1188 to get more information) and the three Flood Warning Codes and their meaning. The owner of the Site will carry out the role of Flood Warden for the Site and ensure they have an understanding of the flood mechanisms of the Site and will ensure that the safety of the occupants and visitors will not be compromised.

The Environment Agency uses three Flood Warnings Codes. They can be issued in any order, usually ending with an 'all clear'. They are issued by the Environment Agency through their website and Floodline Warning Service. The flood warning will be passed onto the occupier/visitors of the Site verbally, by telephone and/or in person. It will be ensured that everyone receives the flood warnings when required.

5.6 Flood Plan

A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed. Sensible precautions would include raising electrical items, moving valuable items off the ground or where possible moving them to a higher floor, rolling up carpets and rugs and turning off utilities. In addition, consider what actions you would take should the property need to be evacuated including access and egress routes and preparing a flood kit in advance containing warm clothing, medication, a torch, food and wellingtons.

The Flood Plan is a 'living' document and therefore should be periodically reviewed and updated to provide advice and guidance to occupants in the event of an extreme flood. The Flood Plan will therefore reduce the vulnerability of the occupants to flooding and makes them aware of the mechanisms of flooding at the Site.

Residual Risk

If flooding starts to affect the Site without any pre-warning i.e. in real time (e.g. through a failure of the flood warning delivery) the following actions will be taken:

- Occupants and visitors should consider evacuating the Site.
- If flood levels continue to rise, occupants and visitors are advised to evacuate before safe access is lost. Occupants and visitors should monitor the flood progression and evacuate.

The Flood Warden will monitor flood levels and keep occupants and visitors informed and will decide whether to initiate the Flood Plan. If required a 'safe haven' can also be maintained and may be required in very extreme events if a flood warning has not been received.

5.7 Safe Access and Egress Route

The NPPF requires that, where required, safe access and escape is available to/from new developments in flood risk areas. Access routes should be such that occupants can safely access and exit their houses in design flood conditions. These routes must also provide the emergency services with access to the development during a flood event and enable flood defence authorities to carry out any necessary duties during the period of flood.

The Site is at such a ground level that it would only flood in the most extreme flood event. The Site is located where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2. The ground levels rise to the north west of the Site with the water depths decreasing rapidly. Therefore, a safe access and egress route, including emergency access can be maintained for vehicles and/or by foot.

Facilities such as community centres, shops etc. are located to the north of the Site. There may also be large areas than those shown in Figure 2 that are flood free located nearer and within the vicinity of the Site. In the event of a flood warning, vital belongings, including waterproof clothing, necessary medication and essentials for infants and children will be collected. It should be ensured that all occupiers and visitors to the Site are accounted for, and then exit the Site using the routes shown in Figure 24.

The Safe Access and Egress Route shown in Figure 24 indicates the exit routes that all people (i.e. occupants and visitors) on Site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone. Therefore, safe access and egress can be maintained in accordance with the NPPF and Environment Agency guidance.



Figure 24 - Safe Access and Egress Route

5.8 Flood Warning Codes / Flood Evacuation Procedures

In order for the following evacuation procedures to be effective:

- The Site will participate in the Environment Agency flood warning telephone service. The Site will register contact details with the Environment Agency' Flood Warnings Service (Floodline 0345 988 1188) in order to receive Flood Warnings/Alerts.
- The flood warning will be passed onto the visitors of the Site verbally, by telephone and/or in person. It will be ensured that everyone receives the flood warnings when required.

Flood Alert



'Flooding of low-lying land and roads is expected. Be aware, be prepared, watch out!'

The Environment Agency will issue a Flood Alert status when flooding is possible, based upon weather and river/sea conditions. Be prepared to act on your Flood Plan. At this stage occupants and visitors should make themselves aware of the Flood Plan and evacuation routes. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast.

Flood Warning



'Flooding of homes and businesses is expected. Act now!'

The Flood Warning alert will be issued when water levels are rising, and further rain is expected. The Site will be evacuated. Move family, pets and valuables to a safe place.

Safe access and egress, including emergency access can be maintained for vehicles and/or by foot. Water, electricity and gas supplies should be located and switched off before evacuating. The Environment Agency Floodline on 0345 988 1188 to get more information should be contacted to get more information, periodically and listen to and watch for weather and flood warnings on local radio and television stations.

Severe Flood Warning



'Severe Flooding is expected. There is extreme danger life and property. Act now!'

If the Site has not already been evacuated, it will be evacuated immediately. Co-operate with the emergency services and call 999 if immediately in danger. Safe access and egress, including emergency access can be maintained for vehicles and/or by foot.

Warning No Longer in Force

'Flood Watches or Flood Warnings are no longer in force for this area'.

Occupants and visitors should contact the Council to check that it is safe to return to the Site. Please be careful water may be around for several days. If there is any doubt that appliances may be water damaged, they must be checked before switching the power or gas back on. Contact your insurance company as soon as possible to get their approval before arranging any clean-up or repairs.

5.9 Flooding Consequences

The mitigation measures detailed above show that the flood risk can be effectively managed and therefore the consequences of flooding are acceptable. The Site is unlikely to flood except in extreme conditions. This takes into account the property level protection measures.

6.0 SEQUENTIAL APPROACH

6.1 Sequential / Exception Tests

The risk-based Sequential Test in accordance with the NPPF aims to steer new development to areas at the lowest probability of flooding (i.e. Flood Zone 1). However, paragraph 176 of the NPPF confirms that: *'Applications for some minor development and changes of use⁶ should not be subject to the Sequential or Exception Tests but should still meet the requirements for site-specific flood risk assessments'*.

The development proposals should therefore be considered by the LPA to satisfy the Sequential and Exception Tests as set out in the NPPF.

⁶ This includes householder development, small non-residential extensions (with a footprint of less than 250m²) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park home site, where the sequential and exception tests should be applied as appropriate.

7.0 SUMMARY AND CONCLUSIONS

7.1 Introduction

This report presents a FRA in accordance with the NPPF for the Proposed Development at Bridgeway House, 16 Brookes Lane, Whalley, BB7 9RG.

This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

7.2 Flood Risk

The Site is unlikely to flood except in extreme conditions. The primary, but unlikely, flood risk to the Site is from fluvial flooding from the adjacent Wiswell Brook. The Site is located within Flood Zones 1, 2 and 3a, with a 'low to high probability' of fluvial flooding, with less than 1 in 1000 annual probability of river flooding in any year (<0.1%) to a 1 in 100 or greater annual probability of river flooding (>1%) in any year.

The existing and proposed use is classified as 'more vulnerable'. The Proposed Development will not change the nature or times of occupation or introduce a new 'more vulnerable' use into the floodplain. 'More vulnerable' uses are appropriate within Flood Zones 3a after the completion of a satisfactory FRA.

Actual Defended Scenario

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the defended 1 in 100 year (+15%) event and the 1 in 1000 year event. Due to the small difference between the defended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the defended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the defended 1 in 100 year (+36%) event. The Site will be flood free during the defended 1 in 100 year (+36%) event and the 1 in 1000 year event.

To assess the fluvial flood risk posed to the Site further and to provide a conservative estimate of flood risk the Environment Agency Rivers and Sea flood map has been used. The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated with floodwater for events up to and including the defended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude that the Proposed Development may be inundated with floodwater during the defended scenarios.

Residual Undefended Scenario

The Environment Agency modelled data shows that the Site will not be inundated with floodwater for all events up to and including the undefended 1 in 100 year (+15%) event and the 1 in 1000 year event. Due to the small difference between the undefended 1 in 100 year (+15%) and 1 in 100 year (+36%) event and the fact that the Site will also not be inundated with floodwater during the undefended 1 in 1000 year event, it has been concluded that the Site will not be inundated with floodwater during the undefended 1 in 100 year (+36%) event. The Site will be flood free during the undefended 1 in 100 year (+36%) event and the 1 in 1000 year event.

To assess the fluvial flood risk posed to the Site further and to provide a conservative estimate of flood risk the Environment Agency Rivers and Sea flood map has been used. The Environment Agency Rivers and Sea flood maps show that the Proposed Development will not be inundated

with floodwater for events up to and including the undefended 1 in 100 year event. It is only when climate change is taken into account or flood events of a greater magnitude that the Proposed Development may be inundated with floodwater during the undefended scenarios.

Summary

Flooding to a water depth of 0.20m has a low chance with an annual probability of less than 1 in 1000 years (<0.1%) during the present day scenario and during the 2036 to 2069 scenario. The mechanism for flooding is generally prolonged episodes of rainfall, which affords good time for flood warnings to be issued. The likelihood of a rapid water level rise and possible rapid inundation of urban areas posing a risk to life is considered to be minimal with a forewarning of two (2) days of a pending flood event. The site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2.

Given the scale and nature of the Proposed Development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a minimal actual and residual flood risk to the site. Therefore, the risk of fluvial flooding is considered to be of **medium significance**.

The flood risk at the Site will be further mitigated by using a number of property level protection measures to manage and reduce the overall flood risk at the Site.

The Proposed Development will have no impact on flood risk and the overall direction of the movement of water will be maintained within the developed Site and surrounding area. There will be no net loss in flood storage capacity. The conveyance routes (flow paths) will not be blocked or obstructed.

There will be no detriment to the flood storage capacity of the Site. There will be no increase in the flood water levels due to the Proposed Development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

7.3 Surface Water Drainage

The Proposed Development will not alter the impermeable areas of the Site. It is understood that the existing drainage infrastructure at the Site efficiently and effectively manages surface water runoff generated at the Site. There will be no increase in surface water runoff or exacerbation of off-site risk as a result of the development.

7.4 Risk Management

The flood risk at the Site will be reduced by mitigation measures, discussed below.

Finished Floor Levels: The finished floor levels of the proposed garage will be raised above the external ground levels. It is recognised however that owing to limited headroom constraints, massing, planning policy and Building Regulations it is considered impractical to raise the finished floor levels further. Therefore, in order to mitigate against this, it is recommended that the occupants of the Site are sign up to receive flood warnings from the Environment Agency and a Flood Plan to a safe area away from the building during times of flood is developed.

A combination of resistance (proofing) and resilience measures will be included to provide further protection. This is discussed below.

Flood Resistance Measures: Flood resistant measures will be used, including:

- The walls of the garage will be thick.

- Sealant will be used around all external doors and windows.
- All windows will be located above ground levels.
- All external doors and windows are constructed from hard wearing materials.

These factors will prevent water entering the property and make the property more resistant to seepage.

Flood Resilience Measures: Robust materials and finishes will be used:

- All electrics wiring, switches, sockets, socket outlets etc. to be located a minimum of 450mm above the finished floor levels.

Flood Warning and Evacuation: The Site is located in a flood risk area therefore; the Site will participate in the Environment Agency flood warning telephone service. The Site will register contact details with the Environment Agency' Flood Warnings Service (Floodline 3845 988 1188) in order to receive Flood Warnings.

Flood Plan: A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed.

Safe Access and Egress Route: The Site is at such a ground level that it would only flood in the most extreme flood event. The Site is located where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2. The ground levels rise to the north of the Site with the water depths decreasing rapidly therefore, a safe access and egress route, including emergency access can be maintained for vehicles and/or by foot.

Facilities such as community centres, shops etc. are located to the north of the Site. In the event of a flood warning, vital belongings, including waterproof clothing, necessary medication and essentials for infants and children will be collected. It should be ensured that all occupiers and visitors to the Site are accounted for, and then exit the Site.

The Safe Access and Egress Route indicates the exit routes that all people (i.e. occupants and visitors) on Site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone. Therefore, safe access and egress can be maintained in accordance with the NPPF and Environment Agency guidance.

7.5 Sequential/Exception Tests

The development proposals should therefore be considered by the LPA to satisfy the Sequential and Exception Tests as set out in the NPPF.

7.6 Conclusion

In conclusion, the Proposed Development, would be expected to remain dry in all but the most extreme conditions. Providing the recommendations made in this FRA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable and the development would be in accordance with the requirements of the NPPF.

This FRA demonstrates that the Proposed Development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF. The development should not therefore be precluded on the grounds of flood risk.



APPENDICES

APPENDIX 1 – Existing and Proposed Site Layout

Notes:

CONSERVATION AREA BOUNDARY

Rev	Date	Revision

FOR PLANNING APPROVAL
SITE PLAN SHOWING TREE COVERAGE
TO THE PERIMETER AND WITHIN THE SITE

project:
BRIDGEWAY
16 BROOKES LANE
WHALLEY
LANCASHIRE

client:
MR GEOFF SUTCLIFFE

drawing title:
EXISTING SITE PLAN

scale: 1:200 @ A2

drawn: DH checked: PH

date: 28 NOVEMBER 2025

project no.	drg. no.	rev.
PHA/ 1012	5000	

Brooke's Lane

SITE ENTRANCE

Public Footpath

Bridgeway

SYCAMORE

BEECH

FIR TREE

MINI FIR TREE
REMOVED

MIXED ARRAY

GRASS

GRAVEL

MIXED ARRAY

GRAVEL

MONKEY PUZZLE
REMOVED

FIR TREE
REMOVED

HOLLY

GRAVEL

14

FIR TREE

MIXED ARRAY

GRASS

CONIFERS

CONIFERS

MIXED ARRAY

24

25

Brooke's Lane

SITE ENTRANCE

Public Footpath

Bridgeway

14

24

25

SYCAMORE

BEECH

FIR TREE

MIXED ARRAY

GRAVEL

MIXED ARRAY

GRASS

GRAVEL

HOLLY

GRAVEL

FIR TREE

GRASS

MIXED ARRAY

CONIFERS

CONIFERS

MIXED ARRAY

Notes:

CONSERVATION AREA BOUNDARY

Rev	Date	Revision
-----	------	----------

FOR PLANNING APPROVAL
SITE PLAN SHOWING TREE COVERAGE
TO THE PERIMETER AND WITHIN THE SITE

project:
BRIDGWAY
16 BROOKES LANE
WHALLEY
LANCASHIRE

client:
MR GEOFF SUTCLIFFE

drawing title:
EXISTING SITE PLAN

scale: 1:200 @ A2

drawn: DH	checked: PH
-----------	-------------

date: 13 NOVEMBER 2025

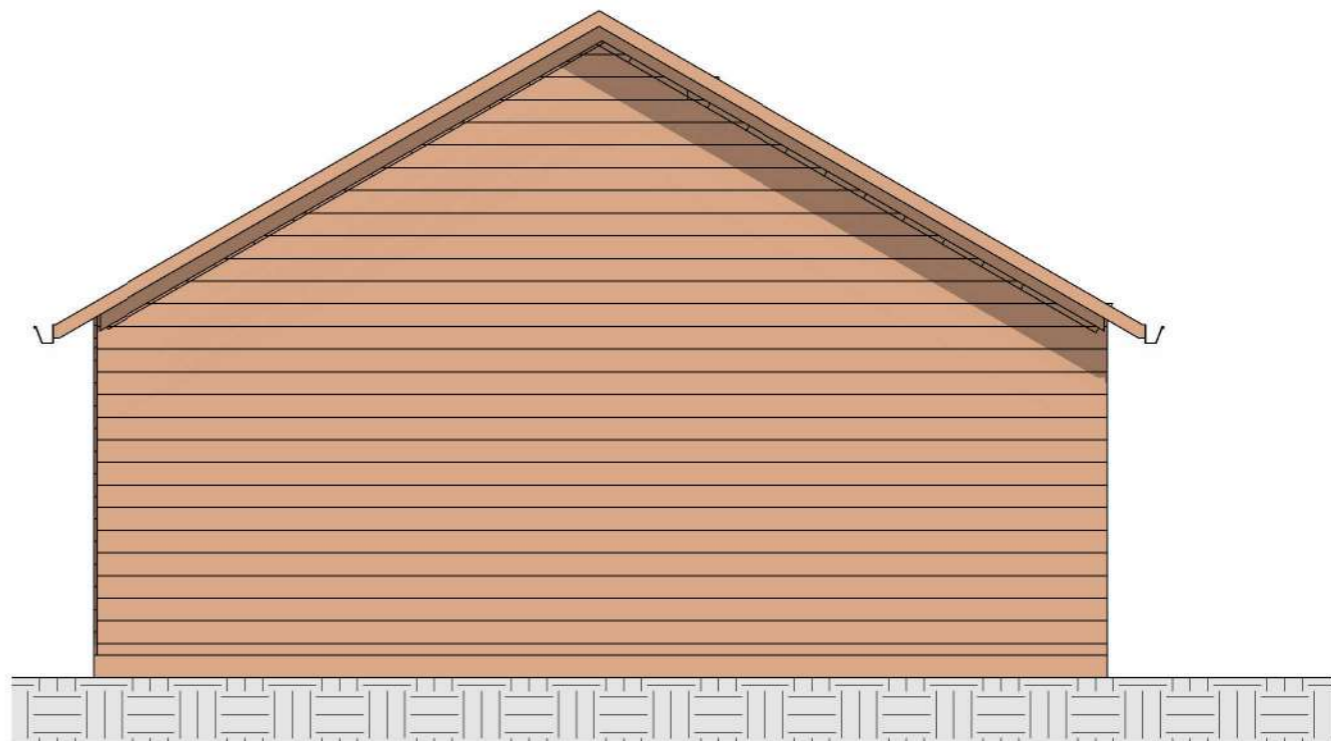
project no. PHA/ 1012	drg. no. 6000	rev.
--------------------------	------------------	------



PROPOSED NORTH.

3

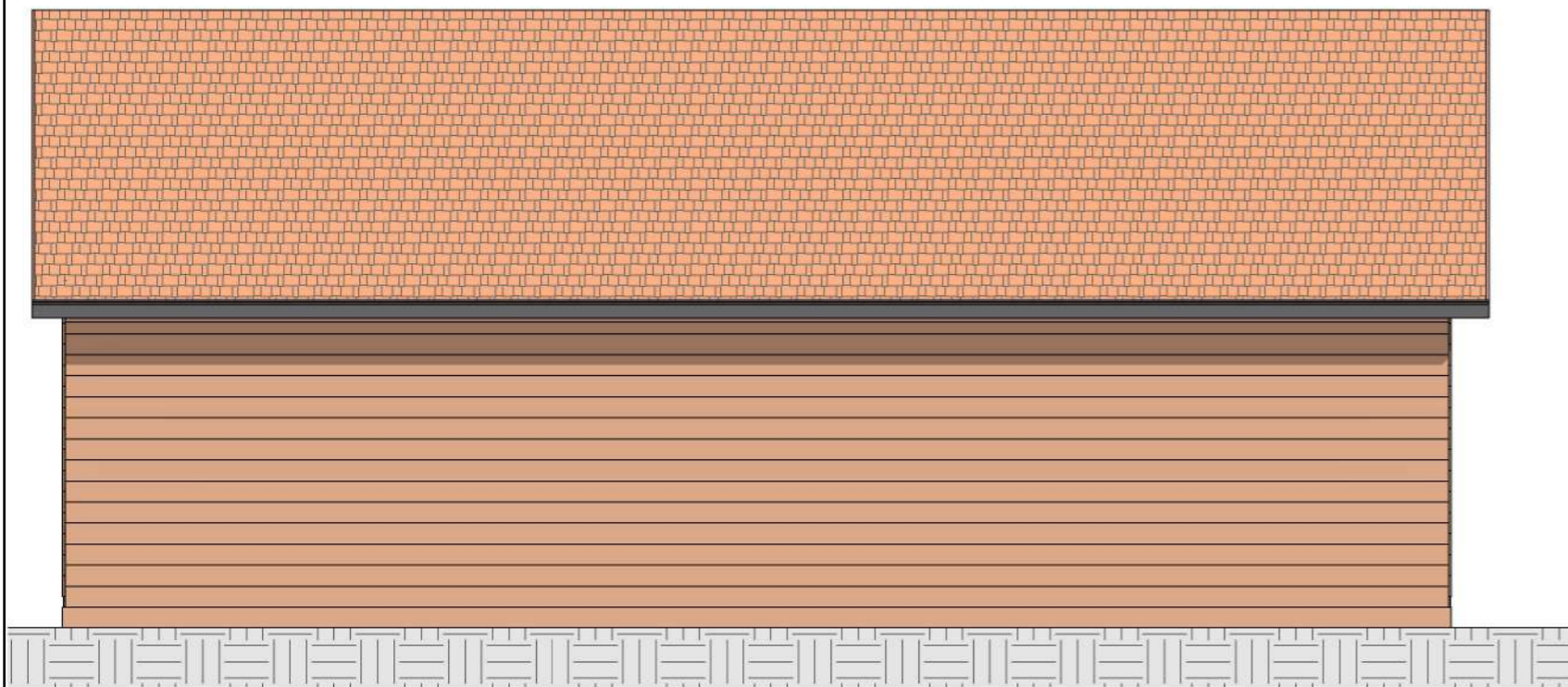
1 : 50



PROPOSED WEST.

4

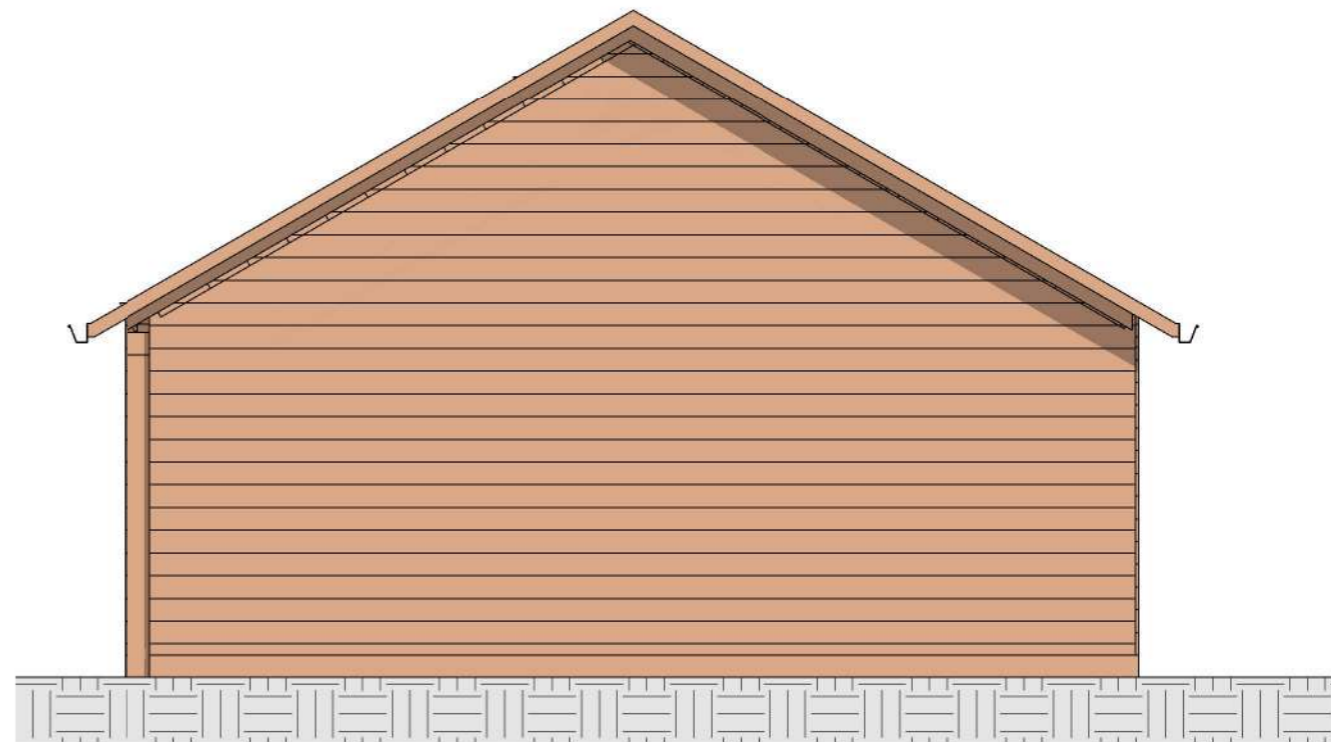
1 : 50



PROPOSED SOUTH.

2

1 : 50



PROPOSED EAST.

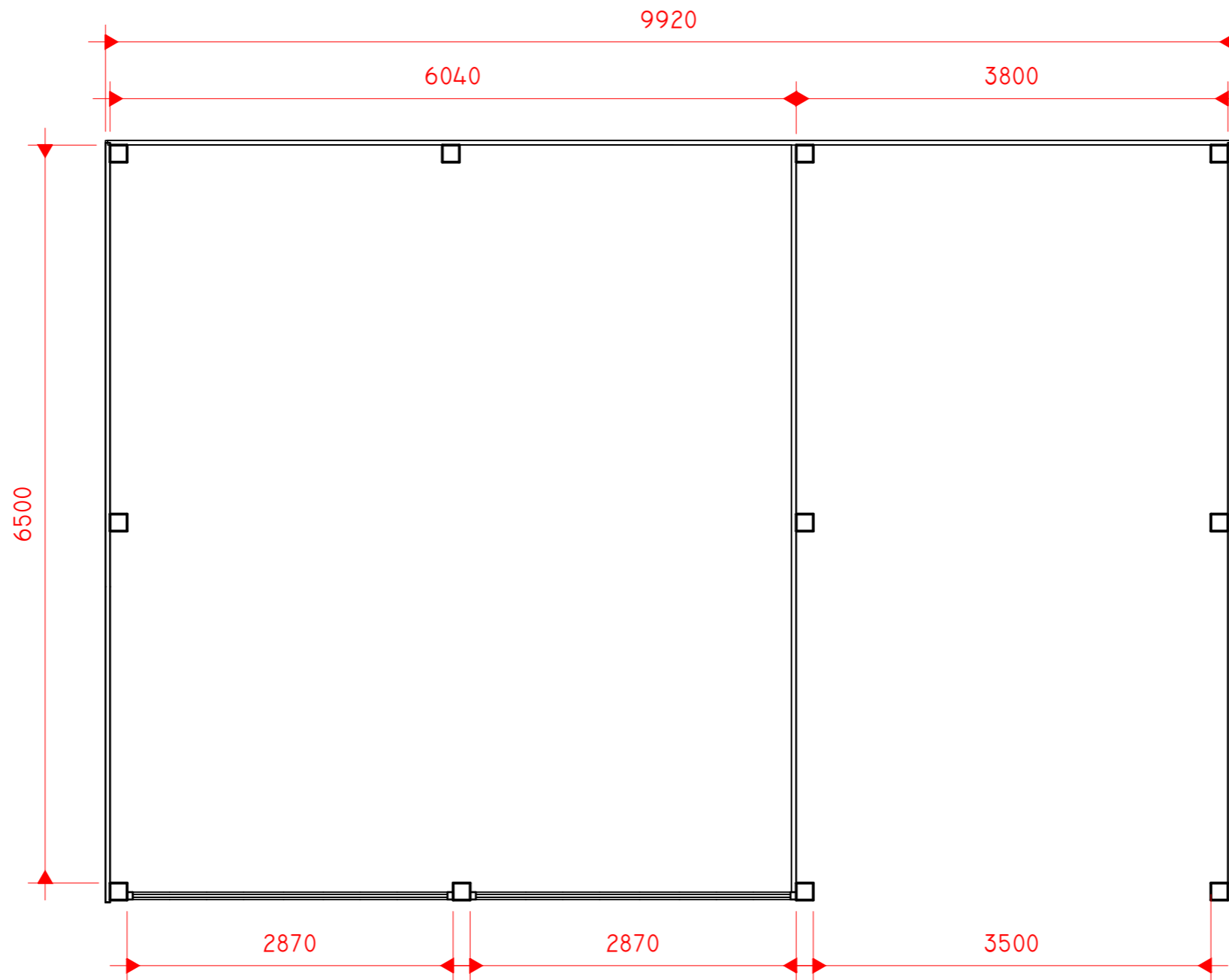
1

1 : 50

No.	Description	Date

<h1>Peter Hitchen Architects</h1>			
CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE

PROJECT ADDRESS: Portico Alteration and proposed new Garage at Bridgeway, 16 Brooke's Lane, Whalley		CLIENT: Mr and Mrs Sutcliffe	
Date: 28/11/2025	Project number: PHA/1012	Scale (@ A3): 1 : 50	
SHEET: Proposed Garage Elevations		Drawn by: DH	DRAWING NUMBER: A2.3
		Checked by: PH	



1 GARAGE PLAN
1 : 50

No.	Description	Date

Peter Hitchen Architects

CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE

PROJECT ADDRESS: Portico Alteration and proposed new Garage at Bridgeway, 16 Brooke's Lane, Whalley		CLIENT: Mr and Mrs Sutcliffe	
Date: 28/11/2025	Project number: PHA/1012	Scale (@ A3): 1 : 50	
SHEET: PROPOSED GARAGE PLAN		Drawn by: DH	DRAWING NUMBER: A2.4
		Checked by: PH	

APPENDIX 2 – Environment Agency Data

Flood risk assessment data



Location of site: 373563 / 436421 (shown as easting and northing coordinates)

Document created on: 23 March 2026

This information was previously known as a product 4.

Customer reference number: 2J16EBC7FMF4

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: Whalley 2017

Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial, defences removed climate change fluvial

Date: 11 August 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 occurring 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








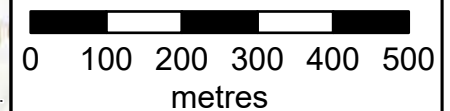
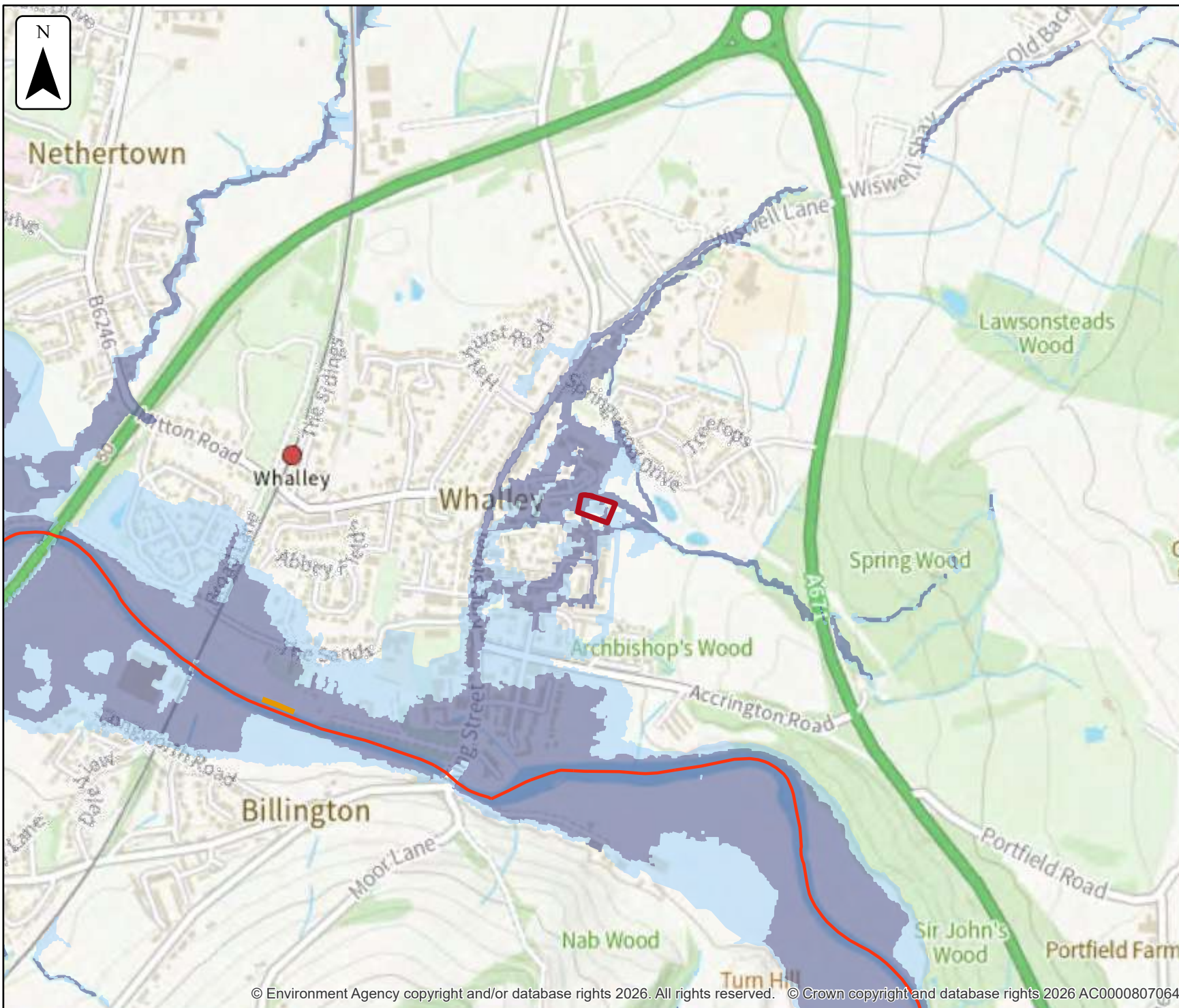
Flood map for planning

Location (easting/northing)
373563/436421

Scale
1:10,000

Created
23 Mar 2026

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



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.





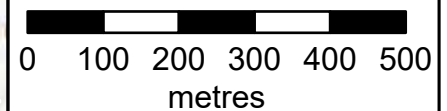
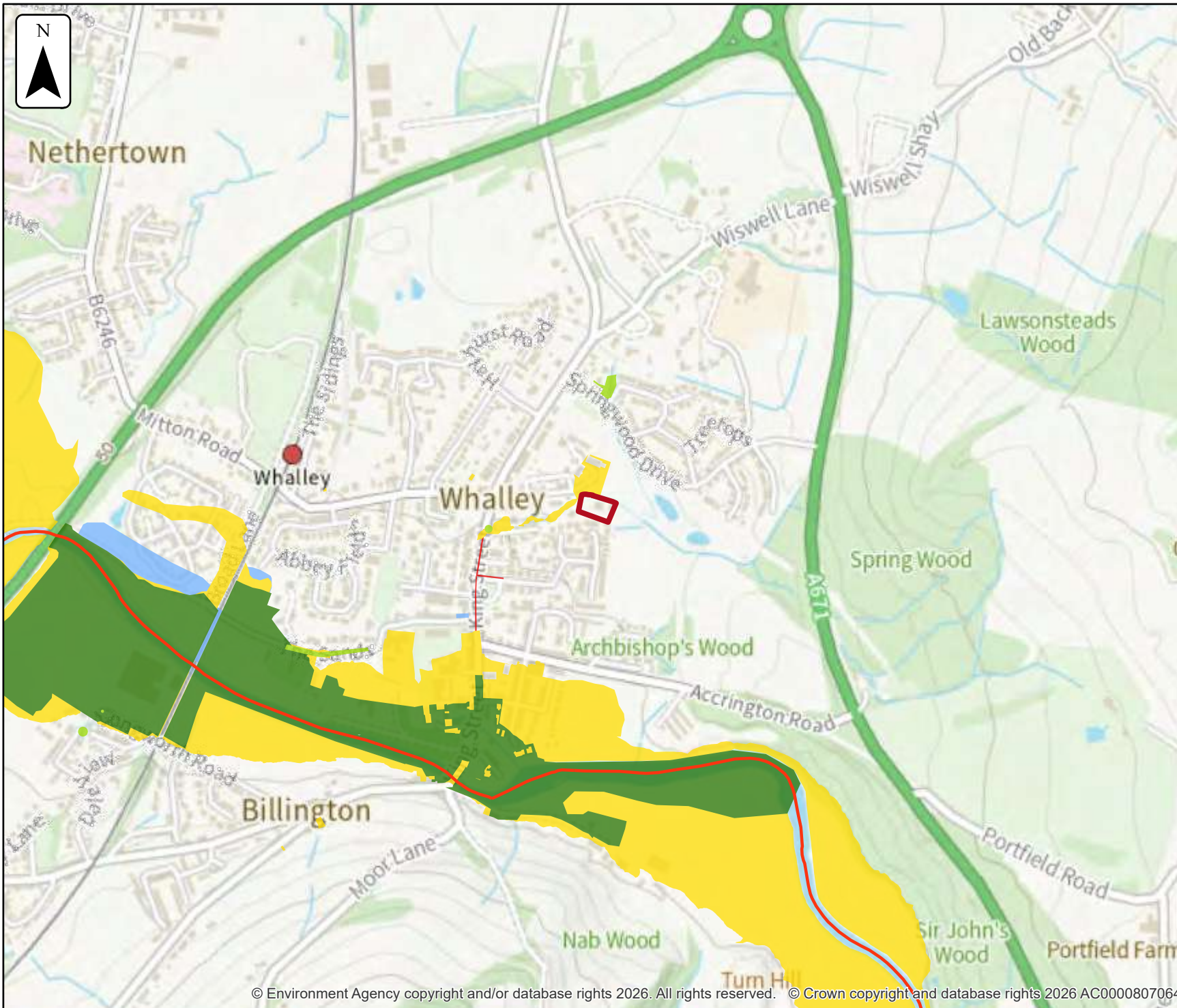
Past floods

Location (easting/northing)
373563/436421

Scale
1:10,000

Created
23 Mar 2026

-  Selected area
-  Main river
- Date of flood event
 -  December, 2024
 -  February, 2020
 -  December, 2015
 -  June, 2012
 -  October, 2000
 -  December, 1999



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
31 December 2024	1 January 2025	unknown	unknown	No
9 February 2020	10 February 2020	main river	overtopping of defences	No
26 December 2015	27 December 2015	main river	channel capacity exceeded (no raised defences)	Yes
22 June 2012	23 June 2012	unknown	local drainage/surface water	No
26 October 2000	27 October 2000	main river	channel capacity exceeded (no raised defences)	No
11 December 1999	12 December 1999	ordinary watercourse	obstruction/blockage - debris screen	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






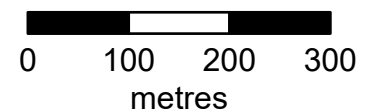
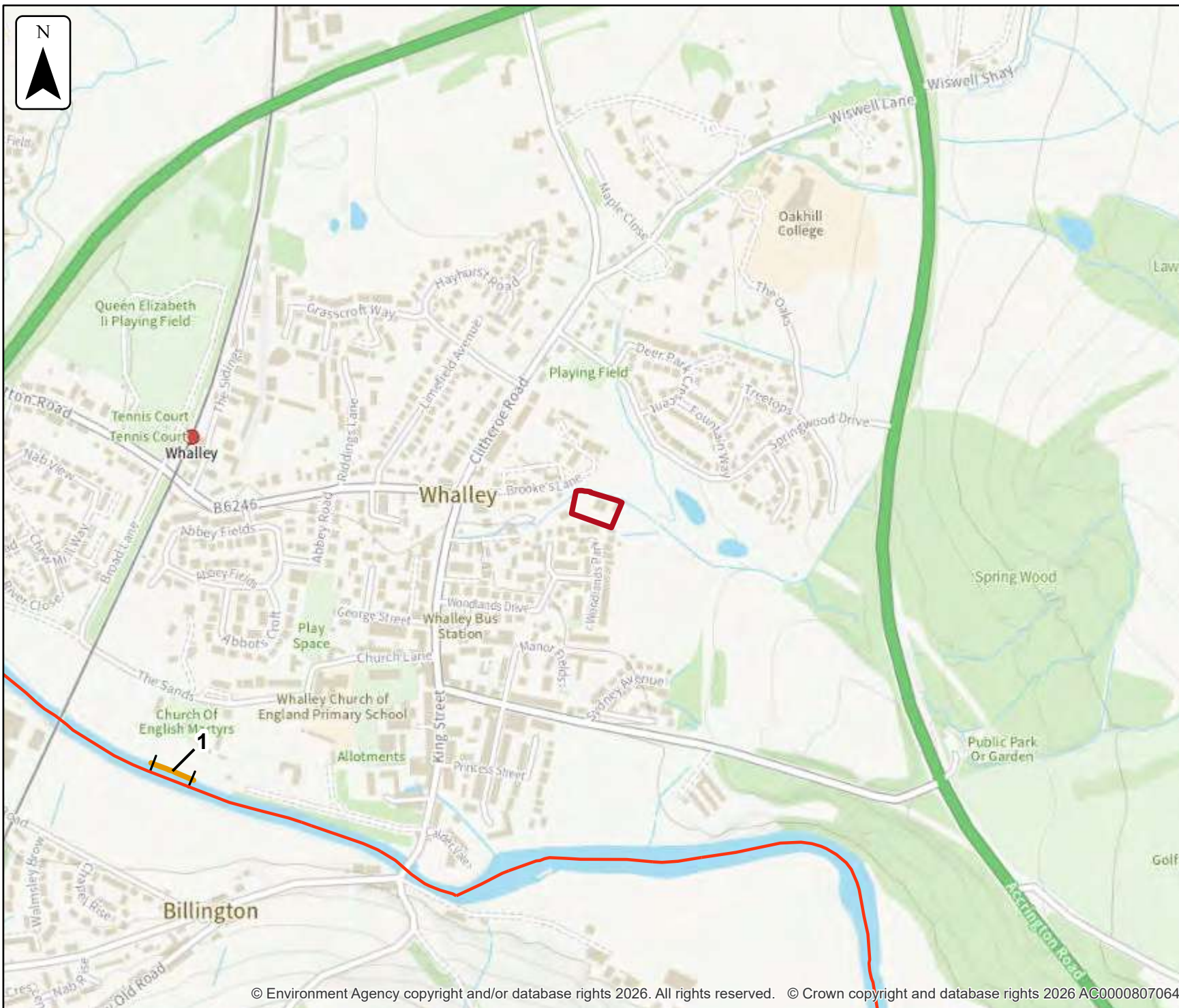
Flood defences

Location (easting/northing)
373563/436421

Scale
1:7,500

Created
23 Mar 2026

-  Selected area
-  Main river
-  Flood defence



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	64827	Embankment	5		43.90	43.90	43.90

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
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change

No data available

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

Model name: Whalley 2017

Scenario(s): Defences removed climate change modelled fluvial, Defences removed modelled fluvial, Defended climate change modelled fluvial, Defended modelled fluvial









Defended modelled fluvial extent

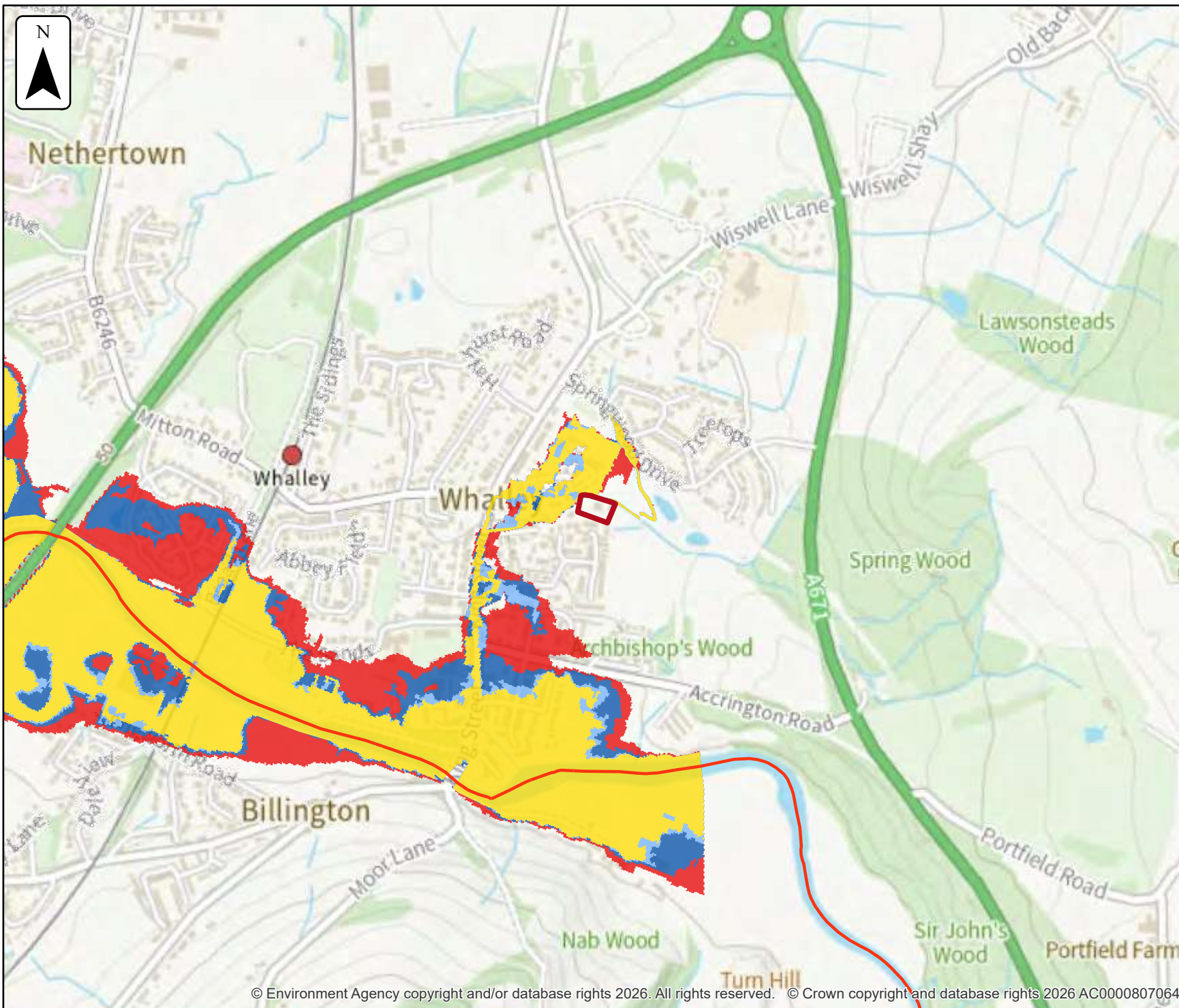
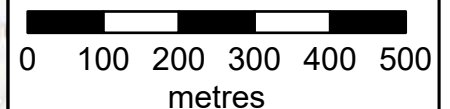
Location (easting/northing)
373563/436421

Scale Created
1:10,000 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Main river
- Modelled flood extent**
-  1.33% AEP
-  1% AEP
-  0.5% AEP
-  0.1% AEP

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








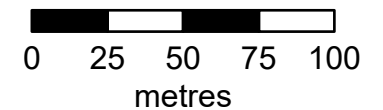
Defended modelled fluvial node locations

Location (easting/northing)
373563/436421

Scale Created
1:2,500 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	10% AEP	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	931605	373470	436395	50.27	50.39	50.52	50.66	50.70	50.79	51.24
2	931661	373494	436413	50.72	50.86	50.97	51.07	51.10	51.20	51.36
3	931646	373514	436427	50.92	51.09	51.24	51.38	51.42	51.53	51.83
4	931671	373538	436449	51.96	52.09	52.17	52.27	52.29	52.37	52.56
5	931670	373575	436440	52.23	52.33	52.39	52.46	52.48	52.54	52.72
6	931665	373599	436433	52.70	52.77	52.81	52.83	52.85	52.88	52.97
7	931619	373621	436420	53.12	53.20	53.24	53.27	53.29	53.31	53.38
8	931652	373648	436473	55.99	56.10	56.14	56.18	56.22	56.26	56.35
9	931607	373649	436409	53.60	53.72	53.77	53.81	53.85	53.90	53.99
10	931638	373651	436456	55.52	55.63	55.68	55.72	55.75	55.79	55.89

Data in this table comes from the Whalley 2017 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	10% AEP	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	931605	373470	436395	1.10	1.61	2.15	2.68	2.86	3.34	3.99
2	931661	373494	436413	1.10	1.61	2.14	2.66	2.81	3.31	4.63
3	931646	373514	436427	1.10	1.60	2.03	2.50	2.64	3.07	4.04
4	931671	373538	436449	1.10	1.60	1.97	2.41	2.54	2.89	4.19
5	931670	373575	436440	0.60	0.91	1.07	1.21	1.33	1.49	1.95
6	931665	373599	436433	0.60	0.91	1.07	1.21	1.34	1.49	1.94
7	931619	373621	436420	0.60	0.91	1.07	1.21	1.33	1.49	1.93
8	931652	373648	436473	0.60	0.91	1.07	1.21	1.33	1.49	1.94
9	931607	373649	436409	0.60	0.91	1.07	1.21	1.33	1.49	1.94
10	931638	373651	436456	0.60	0.91	1.07	1.21	1.33	1.49	1.93

Data in this table comes from the Whalley 2017 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 modelled fluvial extent

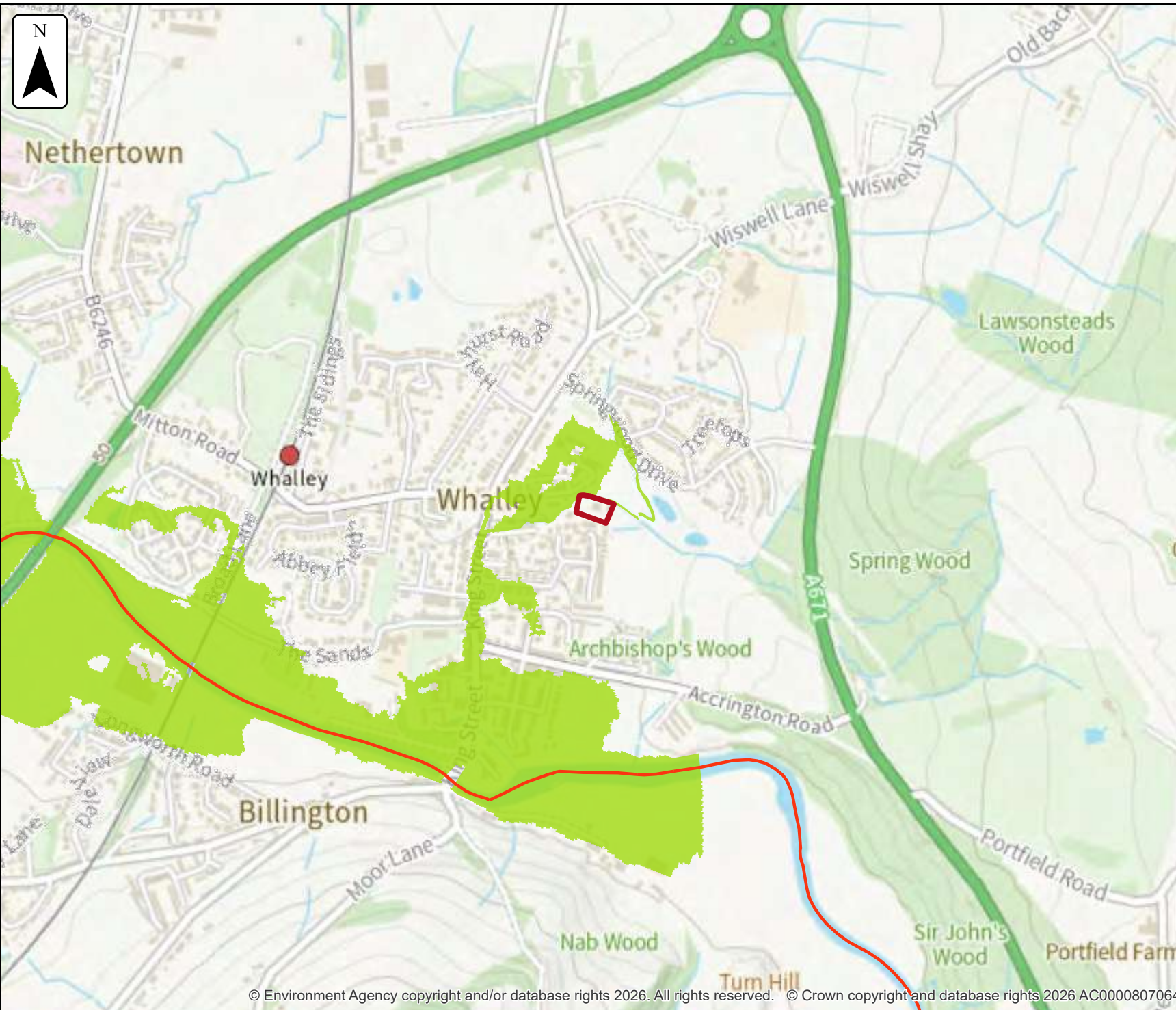
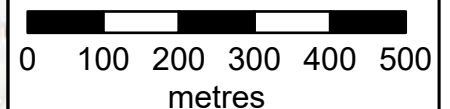
Location (easting/northing)
373563/436421

Scale Created
1:10,000 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Main river
- Modelled flood extent
-  1% AEP (+15%)

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








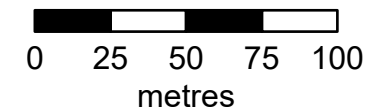
Defended climate change modelled fluvial node locations

Location (easting/northing)
373563/436421

Scale Created
1:2,500 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+15%)	
				Level	Flow
1	931605	373470	436395	50.78	3.29
2	931661	373494	436413	51.19	3.21
3	931646	373514	436427	51.52	3.01
4	931671	373538	436449	52.36	2.85
5	931670	373575	436440	52.54	1.48
6	931665	373599	436433	52.88	1.48
7	931619	373621	436420	53.30	1.47
8	931652	373648	436473	56.25	1.48
9	931607	373649	436409	53.89	1.48
10	931638	373651	436456	55.79	1.48

Data in this table comes from the Whalley 2017 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.









Defences removed modelled fluvial extent

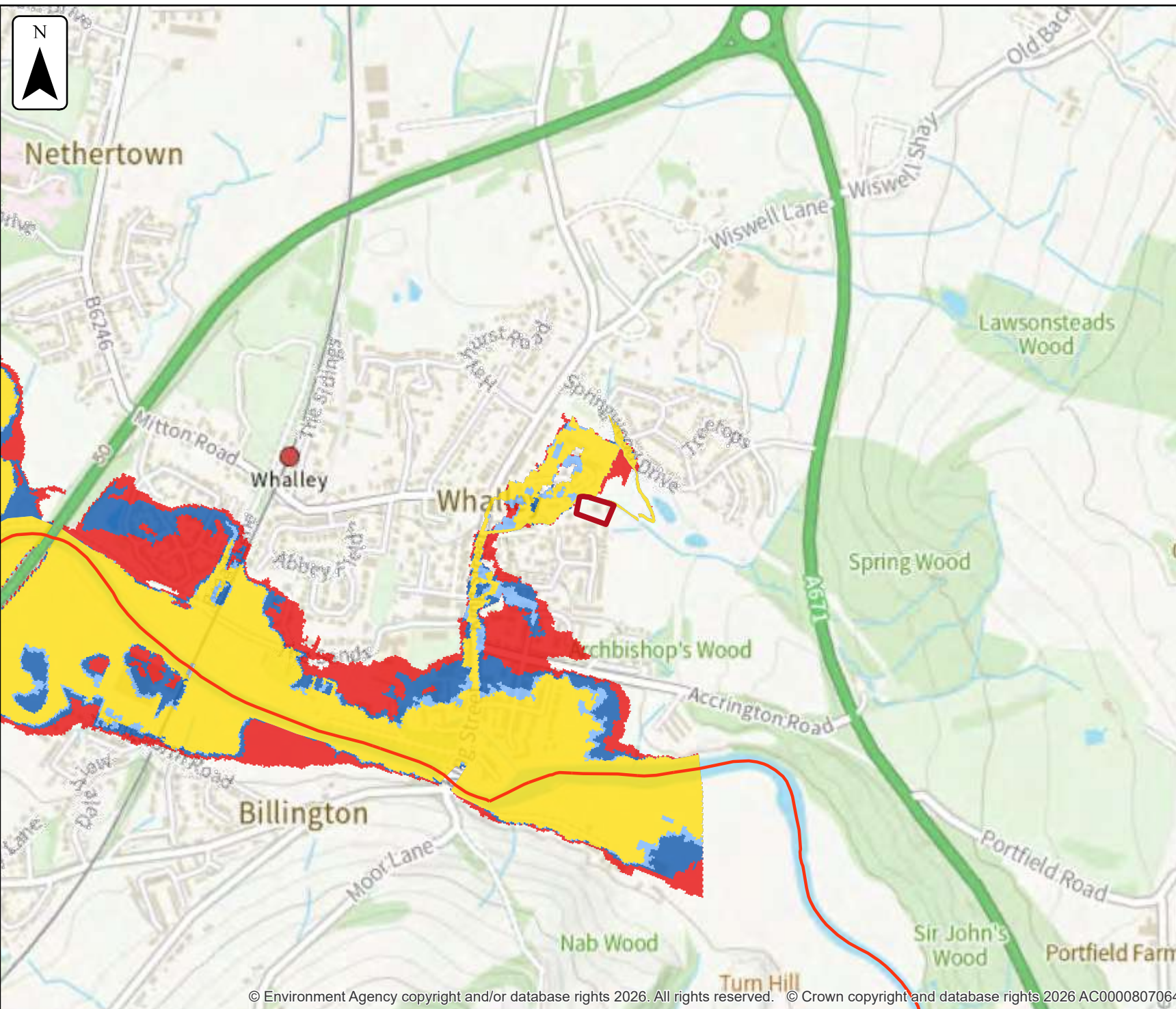
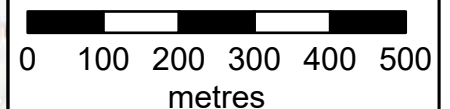
Location (easting/northing)
373563/436421

Scale Created
1:10,000 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Main river
- Modelled flood extent**
-  1.33% AEP
-  1% AEP
-  0.5% AEP
-  0.1% AEP

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








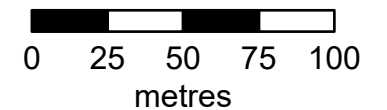
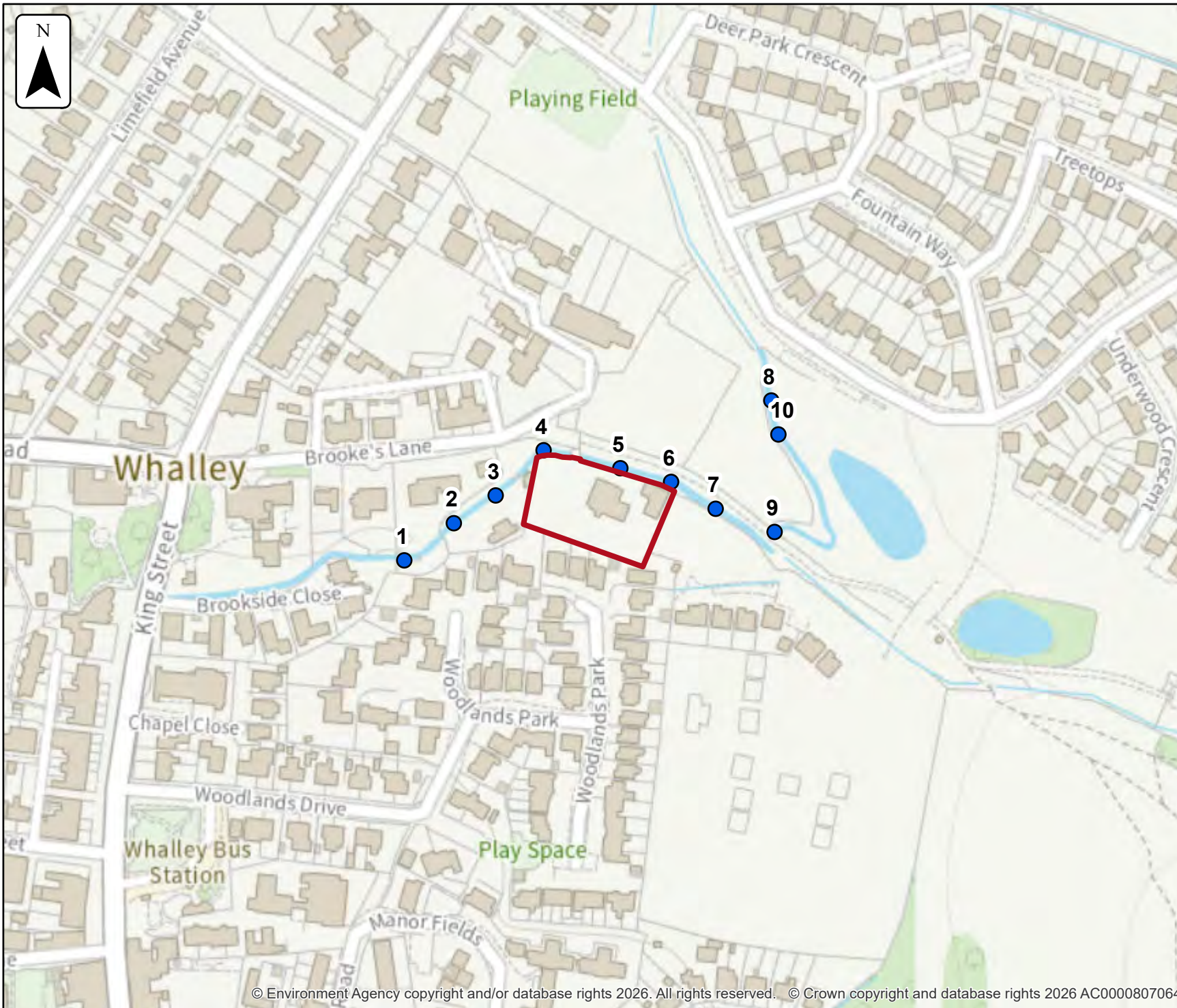
Defences removed modelled fluvial node locations

Location (easting/northing)
373563/436421

Scale Created
1:2,500 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	50% AEP	10% AEP	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	931605	373470	436395	50.27	50.41	50.52	50.66	50.70	50.79	51.25
2	931661	373494	436413	50.72	50.88	50.97	51.07	51.10	51.20	51.36
3	931646	373514	436427	50.92	51.11	51.25	51.38	51.42	51.53	51.83
4	931671	373538	436449	51.96	52.11	52.17	52.27	52.29	52.37	52.56
5	931670	373575	436440	52.23	52.36	52.39	52.46	52.48	52.54	52.72
6	931665	373599	436433	52.70	52.79	52.81	52.83	52.85	52.88	52.97
7	931619	373621	436420	53.12	53.23	53.24	53.27	53.29	53.31	53.37
8	931652	373648	436473	55.99	56.13	56.14	56.18	56.22	56.26	56.35
9	931607	373649	436409	53.60	53.75	53.77	53.81	53.85	53.90	53.99
10	931638	373651	436456	55.52	55.66	55.68	55.72	55.75	55.79	55.89

Data in this table comes from the Whalley 2017 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.

Defences removed

Label	Modelled location ID	Easting	Northing	50% AEP	10% AEP	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	931605	373470	436395	1.10	1.70	2.15	2.69	2.85	3.30	4.0
2	931661	373494	436413	1.10	1.70	2.14	2.66	2.81	3.31	4.65
3	931646	373514	436427	1.10	1.70	2.02	2.50	2.64	3.04	4.08
4	931671	373538	436449	1.10	1.70	1.97	2.41	2.54	2.89	4.19
5	931670	373575	436440	0.60	1.0	1.07	1.21	1.33	1.49	1.95
6	931665	373599	436433	0.60	1.0	1.07	1.21	1.33	1.49	1.94
7	931619	373621	436420	0.60	1.0	1.07	1.21	1.33	1.49	1.94
8	931652	373648	436473	0.60	1.0	1.07	1.21	1.33	1.49	1.94
9	931607	373649	436409	0.60	1.0	1.07	1.21	1.33	1.49	1.94
10	931638	373651	436456	0.60	1.0	1.07	1.21	1.33	1.49	1.93

Data in this table comes from the Whalley 2017 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.






Defences removed climate change modelled fluvial extent

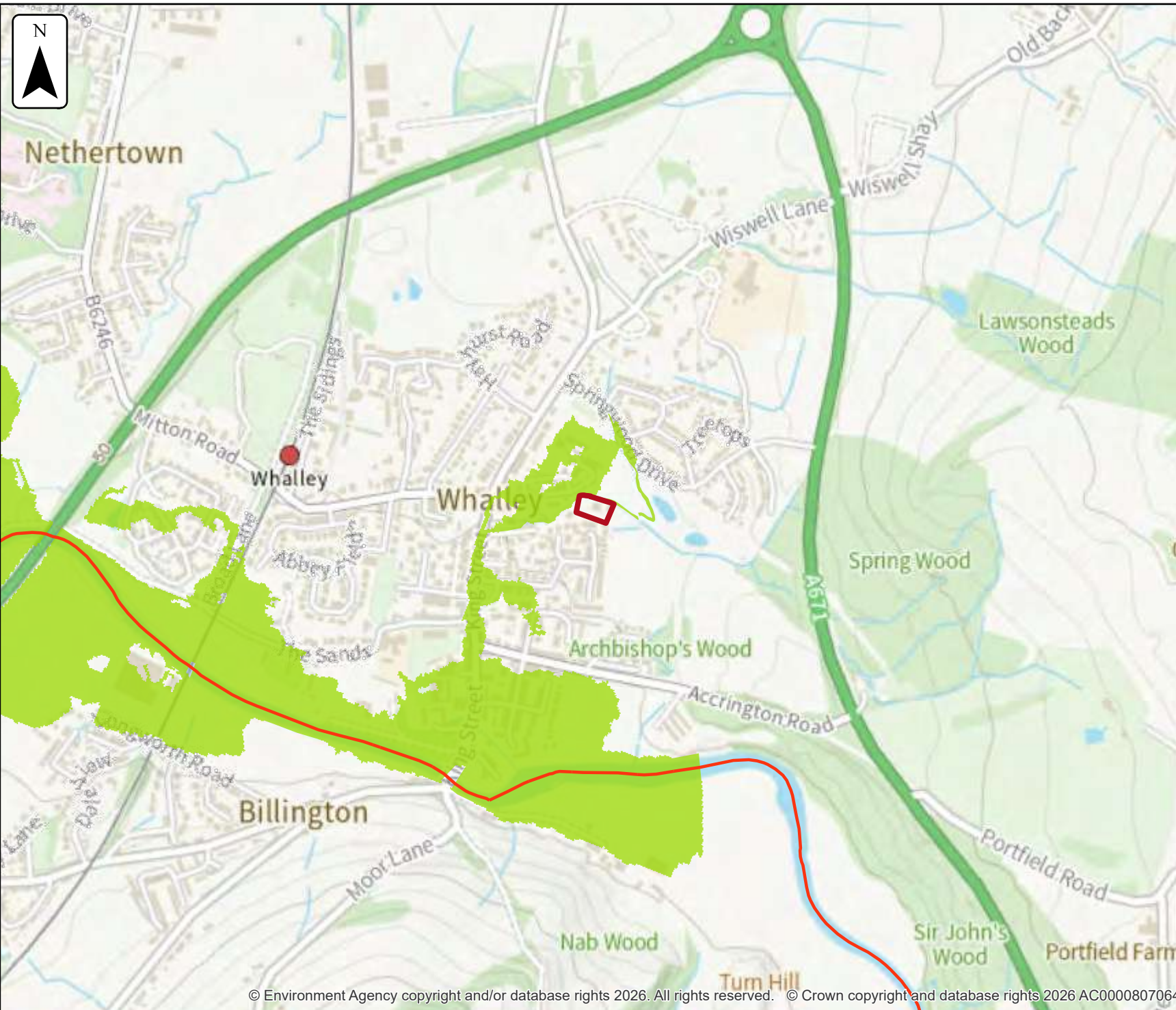
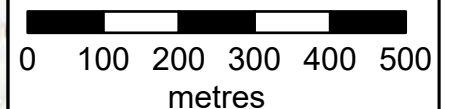
Location (easting/northing)
373563/436421

Scale Created
1:10,000 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Main river
- Modelled flood extent
-  1% AEP (+15%)

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








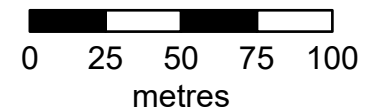
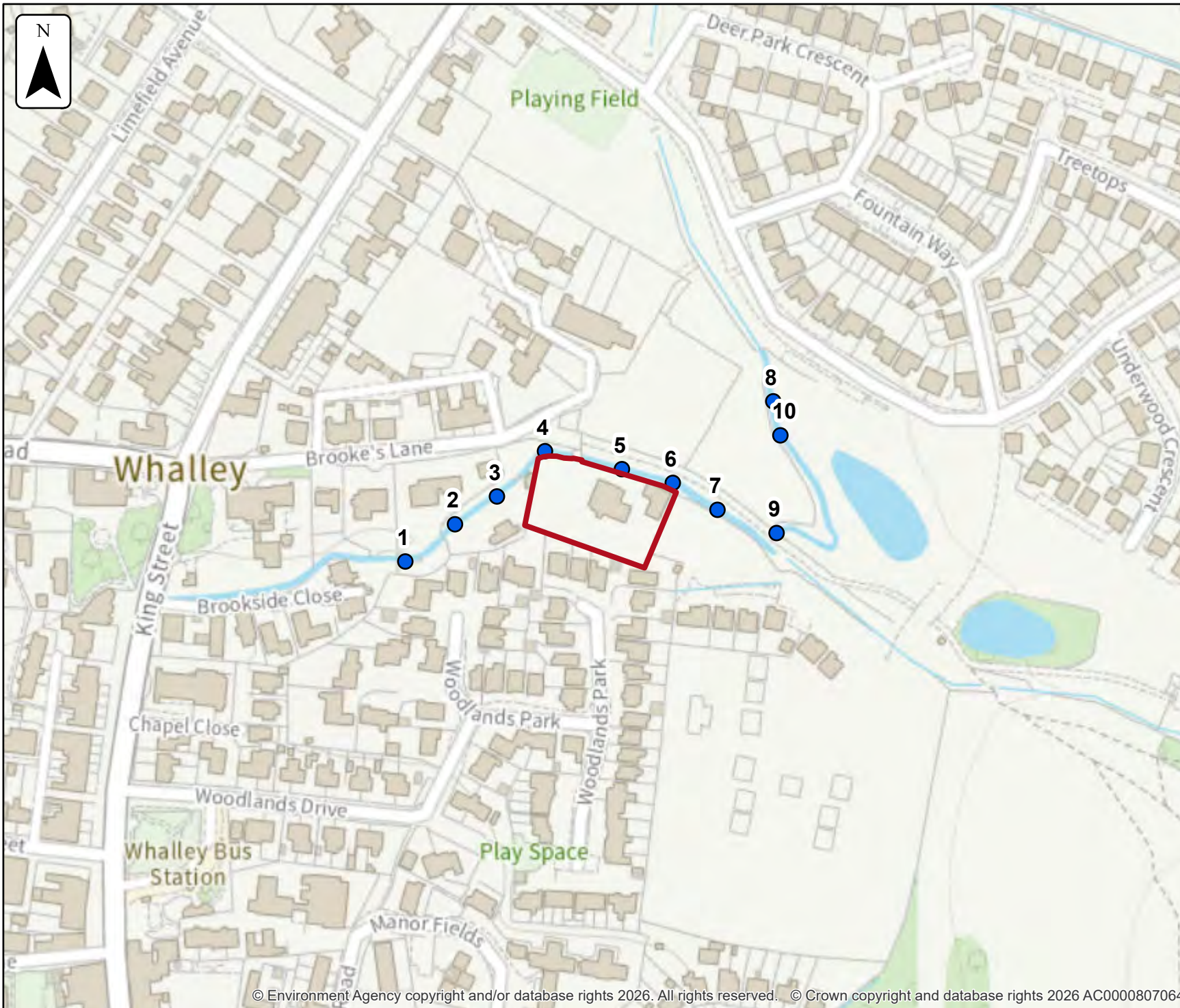
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
373563/436421

Scale Created
1:2,500 23 Mar 2026

Model name
Whalley 2017

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+15%)	
				Level	Flow
1	931605	373470	436395	50.78	3.29
2	931661	373494	436413	51.19	3.23
3	931646	373514	436427	51.52	3.0
4	931671	373538	436449	52.36	2.85
5	931670	373575	436440	52.54	1.48
6	931665	373599	436433	52.88	1.48
7	931619	373621	436420	53.30	1.47
8	931652	373648	436473	56.25	1.48
9	931607	373649	436409	53.89	1.48
10	931638	373651	436456	55.79	1.48

Data in this table comes from the Whalley 2017 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.

Strategic flood risk assessments

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

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as 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.cmlnc@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

