

AVAL CONSULTING GROUP.

CIVIL, ENVIRONMENT & STRUCTURAL ENGINEERS



Level 2 Flood Risk Assessment

Littleborough Family Hub Conversion, Calderbrook Road, Littleborough OL15 9JN
Rochdale Borough Council

May 2025

Project Information

Title	Level 2 Flood Risk Assessment
Job Code	94068
Sector	Flood Risk
Report Type	FRA
Client Name	Rochdale Borough Council
Revision	A
Status	Final
Date of Issue	09 May 2025

Revision History

Revision	Date	Author	Reviewer	Approver	Status
A	09 May 2025	DL	PR	WR	Final

Disclaimer

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party. This report may include data obtained from trusted third-party consultants/laboratories that have been supplied to us in good faith. Whilst we do everything, we can to ensure the quality of all the data we use, we cannot be held responsible for the accuracy or integrity of third party data.

Table of Contents

Project Information	i
1. Executive Summary	1
2. Introduction	2
<i>Overview</i>	2
<i>Site Location and Details</i>	2
<i>Proposed Development and Vulnerability Classification</i>	3
3. Relevant Standards and Policies	4
<i>The National Planning Policy Framework (NPPF)</i>	4
<i>Flood and Water Management Act 2010</i>	4
<i>Rochdale Adopted Core Strategy</i>	4
<i>Rochdale Borough's Strategy for Flood Risk Management 2014 - 2024</i>	5
4. Assessment of Flood Risk	7
<i>Flood Zone Areas</i>	7
<i>River/Sea Flooding and Surface Water Flooding Risks</i>	7
<i>Nearest Watercourse</i>	10
<i>Geology, Hydrology and Hydro-Geology</i>	11
<i>Other Sources of Flooding Risks and Historical Flooding</i>	12
<i>Product 4 Data</i>	14
5. Residual Risk and Exception Test	15
<i>Residual Risk</i>	15
<i>Sequential test</i>	15
<i>Exception Test</i>	16
6. Flood Mitigation/Management Measures	17
7. Conclusion	19
Appendices	20

1. Executive Summary

- 1.1 Aval Consulting Group Limited has been commissioned by Rochdale Borough Council ('the client') to provide a Flood Risk Assessment in relation to a planning application at Littleborough Family Hub Conversion, Calderbrook Road, Littleborough OL15 9JN.
- 1.2 The proposed development is for conversion of an existing building in Littleborough to a Family Hub providing a Children's Centre, Youth Club and NHS local services.
- 1.3 A Level 2 Flood Risk Assessment has been carried out as per the requirements of the local authority and the National Planning Policy Framework. The proposed development meets the requirements as it is located within an area of low risk of flooding and includes mitigation.
- 1.4 The proposed development also meets the Sequential and Exception tests as it is deemed to be acceptable in terms of the policies in place.
- 1.5 The site is at low risk of both fluvial and pluvial flooding from nearby watercourses. It is located within an area with a less than 0.5% annual probability of fluvial flooding (Flood Zone 2). In accordance with the NPPF (2024), the proposed development is classified as 'more vulnerable' and is considered appropriate in this location in terms of flood risk.

2. Introduction

Overview

- 2.1 AVAL Consulting Group Limited (ACL) has been commissioned by Rochdale Borough Council ('the client') to provide a Flood Risk Assessment in relation to a planning application at Littleborough Family Hub Conversion, Calderbrook Road, Littleborough OL15 9JN.
- 2.2 This report will state the Flood Zone the development is located in and will analyse the risks of flooding at the site. Mitigation measures will also be discussed.
- 2.3 The existing and proposed development drawings are presented in Appendix A.

Site Location and Details

- 2.4 Figure 2.1 shows the proposed site location. The proposed development is bounded by the existing Littleborough Sports Centre to the North, West and south, Football Field to the east.

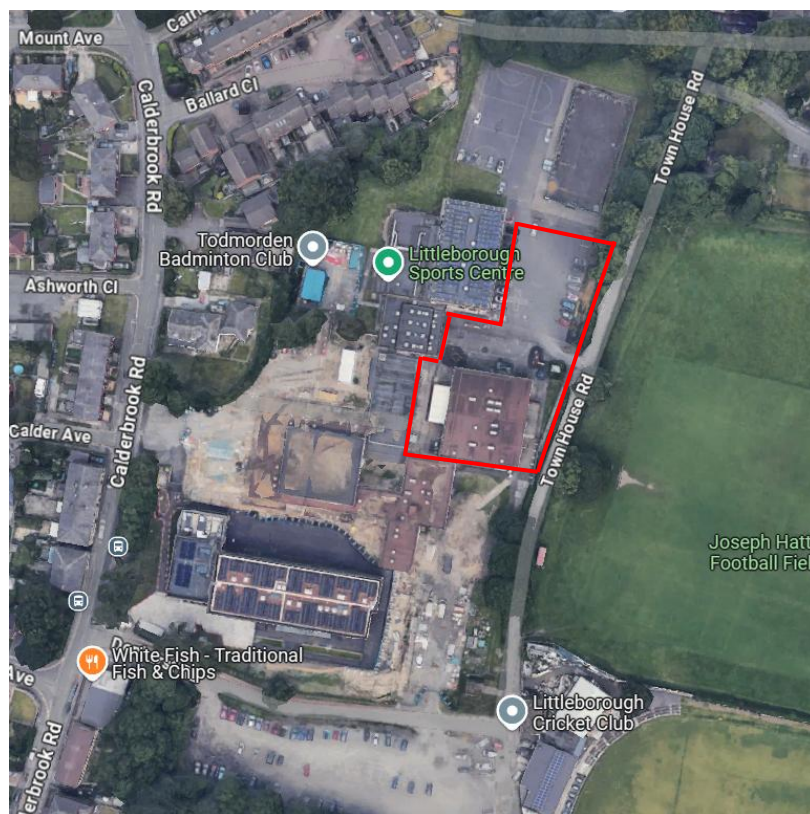


Figure 2.1: Proposed Site Location (Source: Google)

Proposed Development and Vulnerability Classification

- 2.5 The proposed development is for the conversion of an existing building in Littleborough to a Family Hub providing a Children's Centre, Youth Club and NHS local services.
- 2.6 As per the National Planning Policy Framework, the proposed development will be under the **'More Vulnerable'** classification.

3. Relevant Standards and Policies

- 3.1 This section summarises all legislation, policy, statutory and non-statutory guidelines relevant to the proposed development. That also includes all the latest regional and local planning policy guidance specifically applicable to the proposed development.

The National Planning Policy Framework (NPPF)

- 3.2 The latest National Planning Policy Framework (NPPF) was published on 12th of December 2024. The NPPF is supported by technical guidance set out within the Planning Practice Guidance for Flood Risk and Drainage, including the classification of the site vulnerability and the requirement to do an Exception Test in relation to the Flood Zone and Vulnerability Classification.
- 3.3 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.
- 3.4 It advises that where new development is necessary in areas of higher risk, flood mitigation resilience and resistance measures should be incorporated which can include but not limited to a higher finished floor level, installing flood boards and moving electrical points above. The developments upstream of the proposed development should also be taken into the consideration of flood risk.
- 3.5 The NPPF's flood risk advice is all set out in Chapter 14 of the Framework document, meeting the challenge of climate change, flooding and coastal change.

Flood and Water Management Act 2010

- 3.6 The Flood and Water Management Act 2010 received Royal Assent on 8th April 2010. This Act provides duties on the Environment Agency, Local Authorities, Developers and other bodies to manage flood risks. The Act has significant planning and design implications for Developers.
- 3.7 It should be noted that these standards and procedures are being reviewed by the respective regulatory bodies and third parties against the requirements imposed by the Flood and Water Management Act 2010. The advice and recommendations provided may change when associated regulations have been issued in order to implement the full scope of the Act.

Rochdale Adopted Core Strategy

- 3.8 Rochdale Adopted Core Strategy (adopted October 2016) highlights the main policy regarding Flood Risk.
- 3.9 *PG8 - Managing water resources and flood risk*

We will ensure that new development (including flood risk mitigation measures) does not lead to any form of increased flooding locally or further downstream, does not impede natural water and flood risk management, is not detrimental to existing or potential flood storage areas, contributes where possible to alleviating existing flood

*risk, is itself well protected from flood risk and ensures prudent use of water resources.
We will require:*

A. Compliance with a 'sequential' approach to new development and flood risk, directing development away from areas of high risk, in accordance with the National Planning Policy Framework;

B. Full regard to and compliance with the advice of the Environment Agency (or equivalent agency) and the objectives and priorities for flood risk management set out in the Local Flood Risk Management Strategy, including any mitigation measures recommended for particular sites;

C. Full regard to the published evidence of local flood risk and its significance as included in Strategic Flood Risk Assessments, Surface Water Management Plans and other recognised sources of flood risk data and the production of additional Flood Risk Assessments (FRAs) as appropriate;

D. Incorporation of appropriate measures for the management of surface and flood water, including flood storage areas, Sustainable Urban Drainage Systems (SUDS) and the protection of 'overland flow paths';

E. Compliance with any Surface Water Management Plan or drainage strategies produced, such as for the identified critical drainage areas of Littleborough and Heywood;

F. The avoidance of culverting, and support the opening up of existing culverts wherever Rochdale Core Strategy Adopted October 2016 rochdale.gov.uk 103 possible;

G. The incorporation of measures for the conservation of water to minimise potable water consumption, including rainwater collection measures, which should be integral to the design of buildings and spaces;

H. Development that does not directly or indirectly lead to pollution of existing water resources such as watercourses and groundwater or the derogation of the quantity of groundwater;

I. The incorporation of measures to improve water quality; and

J. The taking of opportunities to improve the habitat value of watercourses and water bodies. In addition, we will identify additional flood storage areas which will be protected from development.

Rochdale Borough's Strategy for Flood Risk Management 2014 - 2024

3.10 The Rochdale Borough's Strategy for Flood Risk Management objectives are stated below:

- *Understand our flood risks better;*
- *Communicate those risks more effectively to those who are at risk from flooding and with those who can help manage and respond to flood risk and its consequences;*

- *Help people, communities and businesses to take greater ownership of flood risk where they can manage and where possible reduce their risk and be better prepared to respond to and recover from flood events;*
- *Work as a Lead Local Flood Authority with other flood risk management agencies to manage flood risk better, reduce the impact of flooding and wherever possible reduce or remove the risk of flooding through investing in our drainage infrastructure and its future management;*
- *Ensure that development and land management do not increase flood risks and contribute to sustainable drainage and the reduction of flood risk; and*
- *Ensure that how we manage and reduce flood risk helps our local communities, economy and environment to be more resilient to climate change impacts and helps to deliver a clean and safe water environment, rich in wildlife and opportunities for its enjoyment.*

4. Assessment of Flood Risk

Flood Zone Areas

- 4.1 The proposed development boundary falls within Flood Zone 3, as identified by both the Environment Agency's Flood Map and the Local Authority's Strategic Flood Risk Assessment (SFRA). However, a small area of the building footprint under consideration lies within Flood Zone 2. Figure 4.1 illustrates the proposed development in relation to the Flood Zone 2 and 3 extents, based on QGIS layers obtained from the Environment Agency.

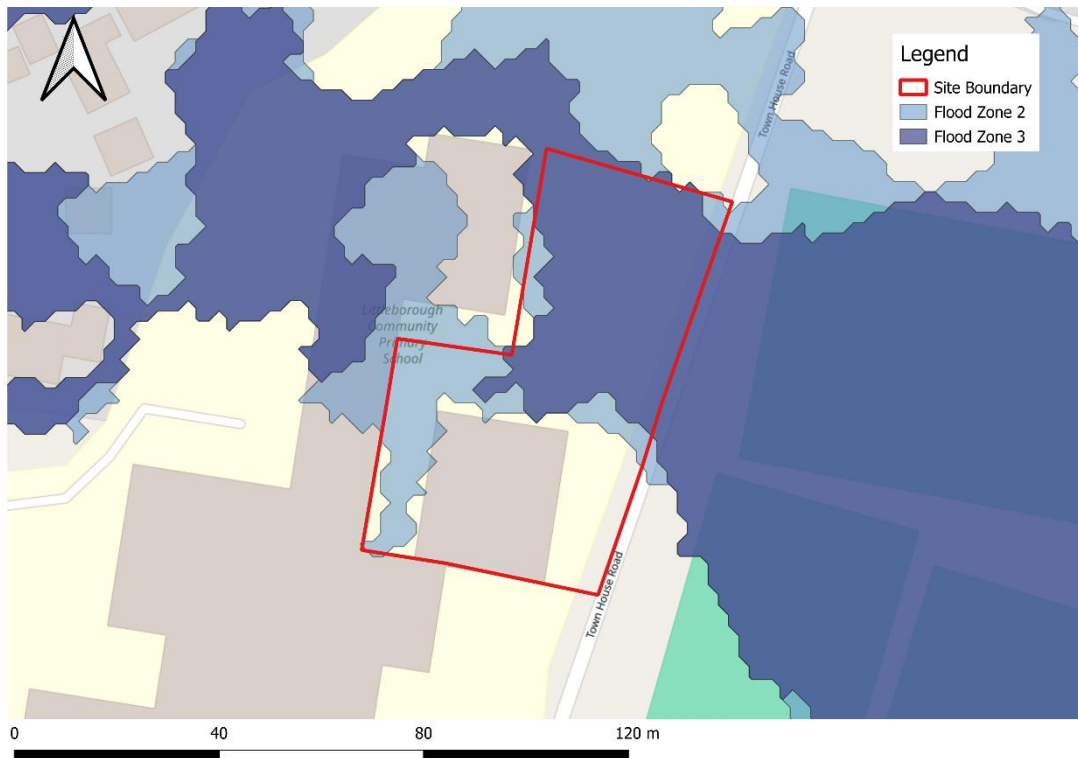


Figure 4.1: Flood Zone Area (Source: QGIS Layer from the EA)

River/Sea Flooding and Surface Water Flooding Risks

- 4.2 In terms of the risk of flooding from Surface Water and the River/Seas, the proposed development is at low risk of river/sea and at medium risk of surface water flooding as shown in Figures 4.2 and 4.3. When considering Climate Change, the risks of flooding from both river/sea and surface water remain at low and medium risk respectively as shown in Figures 4.4 and 4.5.
- 4.3 The maps of likelihood of flooding from River/Seas and Surface Water at varying depths (without and with Climate Change) can be found within Appendix C. In short, the site is at a low and very low likelihood of flooding under any depths for river/sea and surface water.

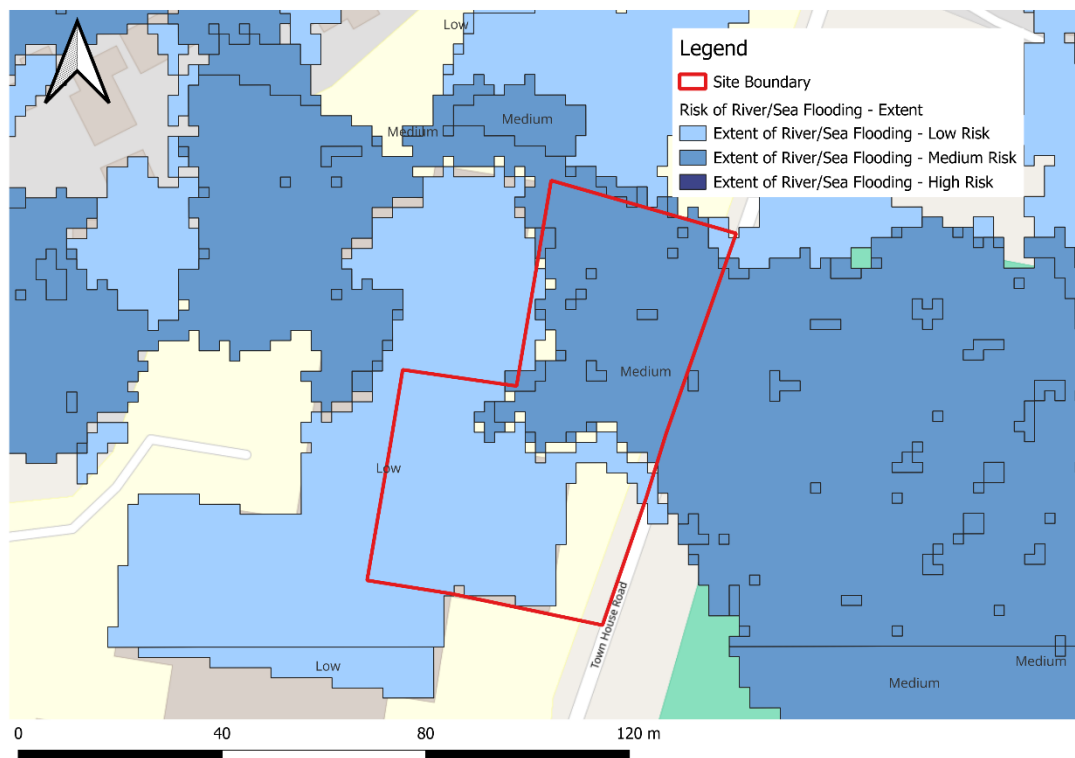


Figure 4.2: Extent of Flooding from River or the Seas (Source: QGIS Layer from the EA)

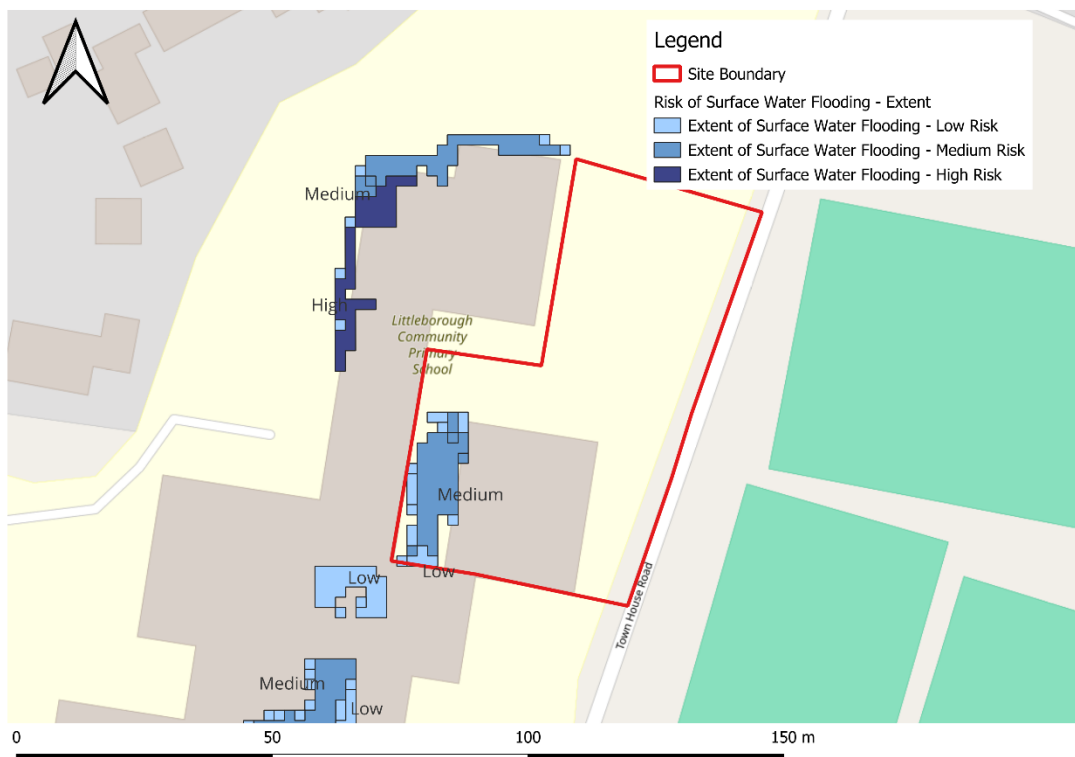


Figure 4.3: Extent of Flooding from Surface Water (Source: QGIS Layer from the EA)

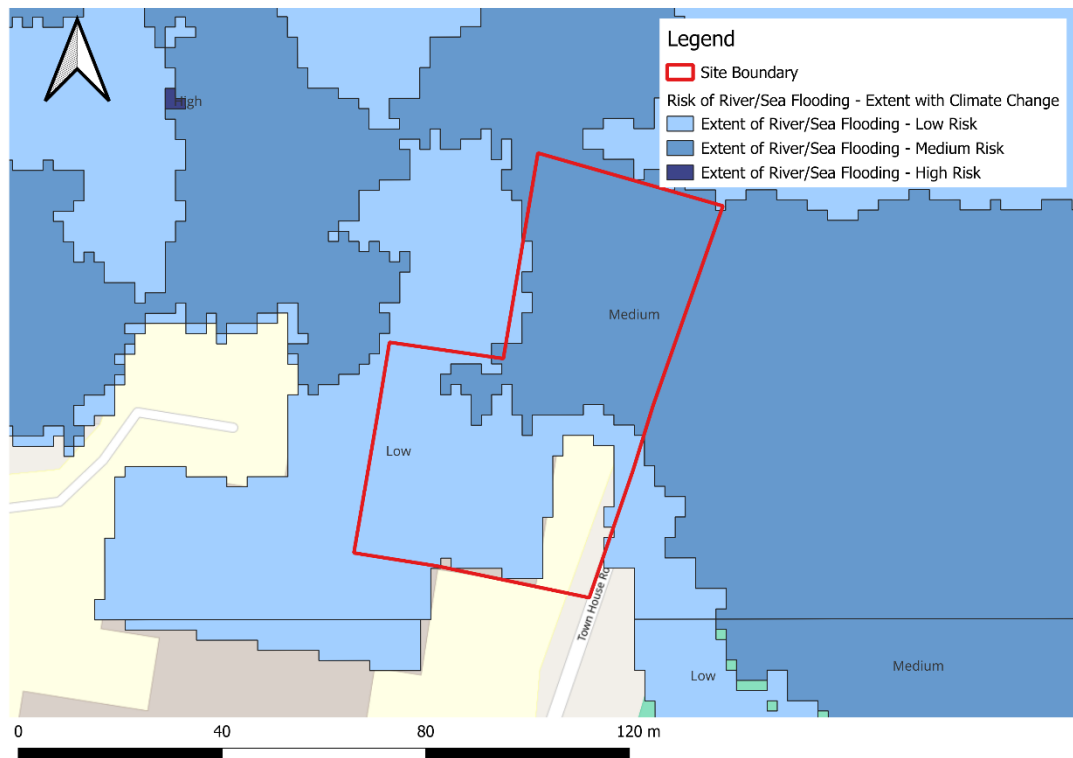


Figure 4.4: Extent of Flooding from River or the Seas with Climate Change (Source: QGIS Layer from the EA)

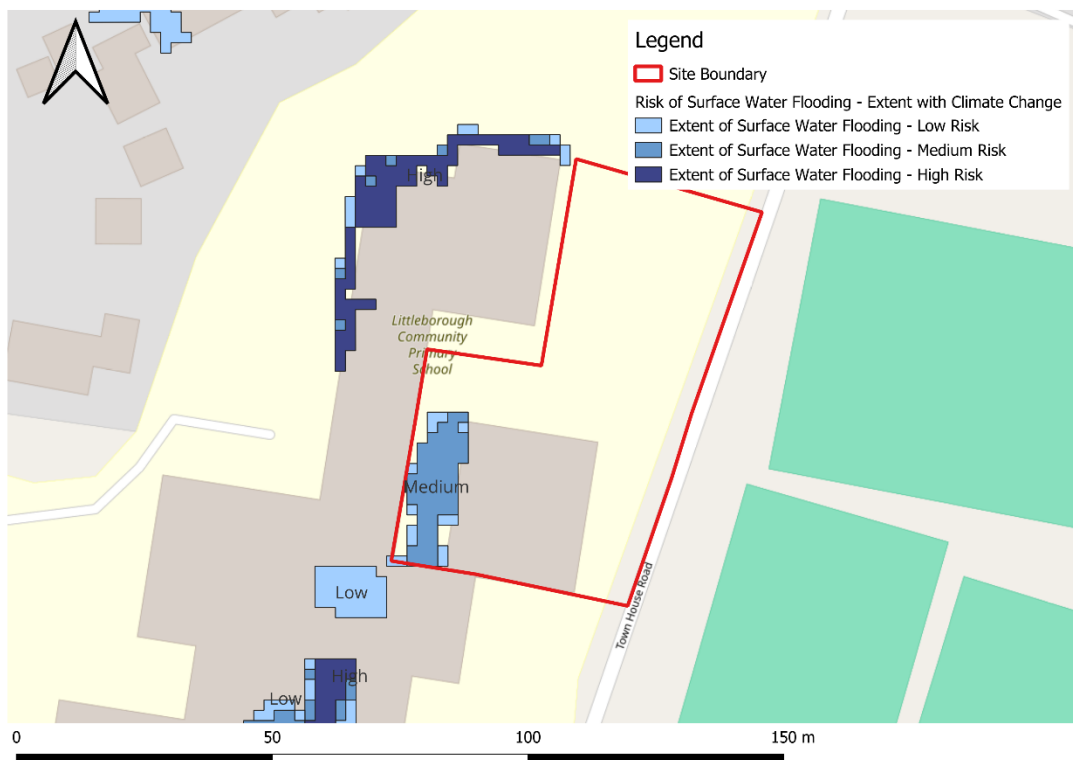


Figure 4.5: Extent of Flooding from Surface Water with Climate Change (Source: QGIS Layer from the EA)

Nearest Watercourse

- 4.4 The nearest watercourse is a Town House Brook, which is around 200m north of the site boundary.

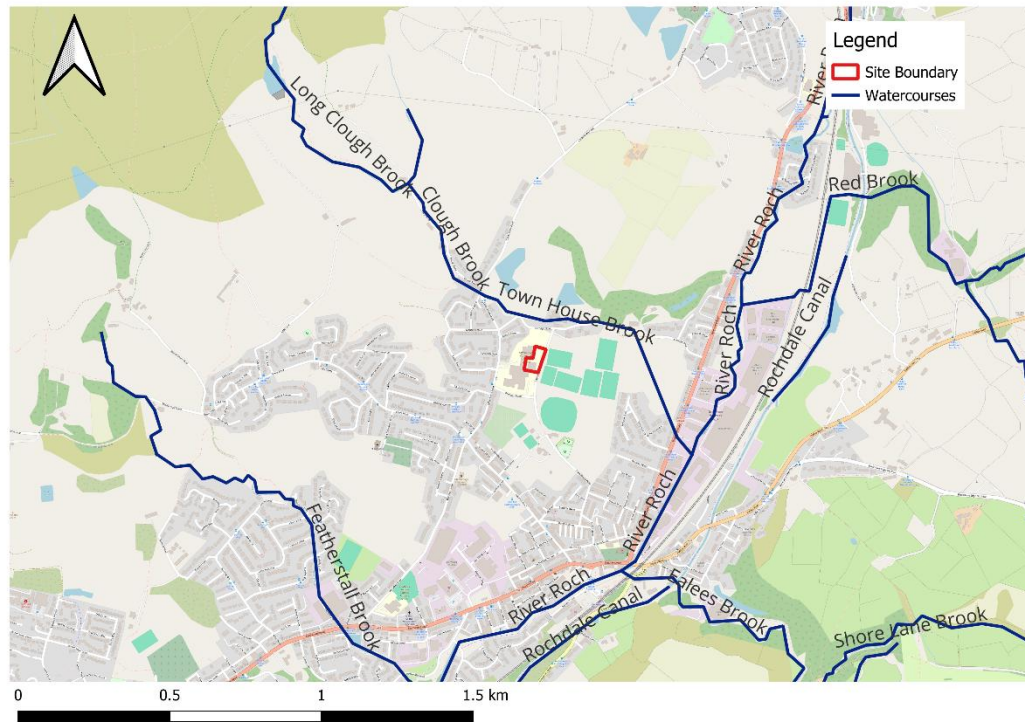


Figure 4.6: Nearest Watercourses (Source: QGIS)

Geology, Hydrology and Hydro-Geology

- 4.5 The BGS Bedrock Geology provides details of the bedrock geology within the site. Figure 4.7 shows the bedrock geology within the site, which is identified to be Rough Rock - Sandstone.
- 4.6 The Cranfield Soil and AgriFood Institute (CSAI), incorporating the National Soil Resources Institute (NSRI,) at Cranfield University maintains soil reports and maps for England and Wales. The Soilscales dataset map, shown in Figure 4.8 indicates that different soils in the site boundary are 'Loamy'. These soils are identified as 'Freely Draining', which suggests the ground conditions are suitable for a natural discharge of surface water to the ground.

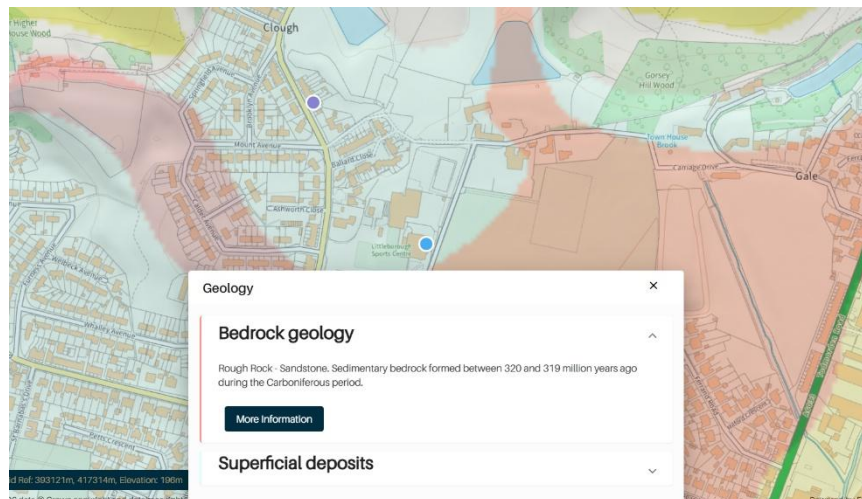


Figure 4.7: BGS Bedrock Geology Map (Source: BGS Geology Map Viewer)

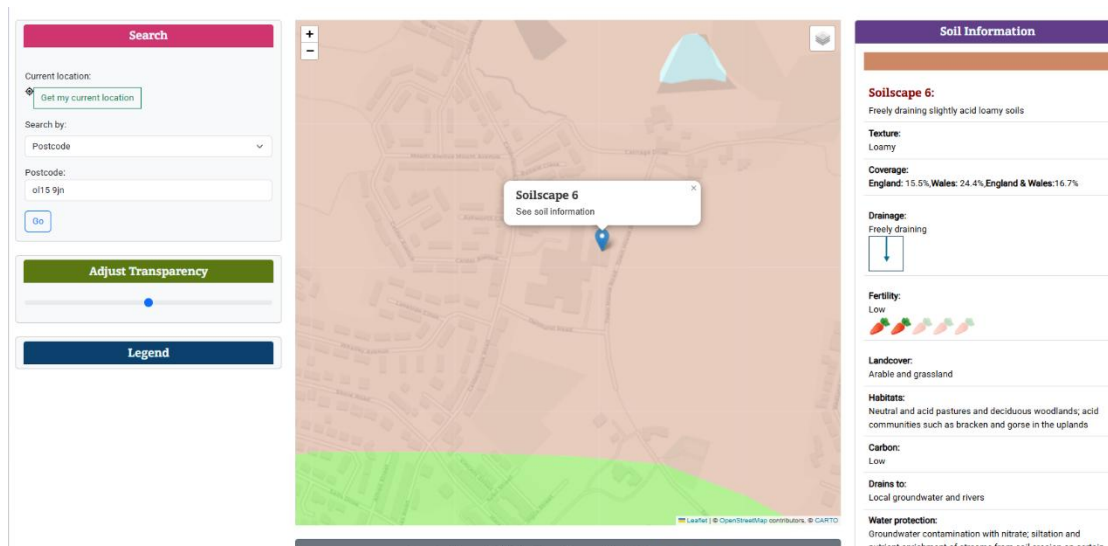


Figure 4.8: Soilscales Map (Source: Soilscales)

Other Sources of Flooding Risks and Historical Flooding

- 4.7 The Environment Agency's Aquifer Designation Map dataset held on Natural England's MAGIC website provides authoritative geographic information about the natural environments across Great Britain. An inspection of the map shows that the site does not lie within an area of aquifer designation, however the site lies within an area at a medium-high groundwater vulnerability. This can be seen in Figure 4.9.
- 4.8 As per Environment Agency, the site has no recorded previous flooding. Figure 4.10 displays the recorded flood outlines.

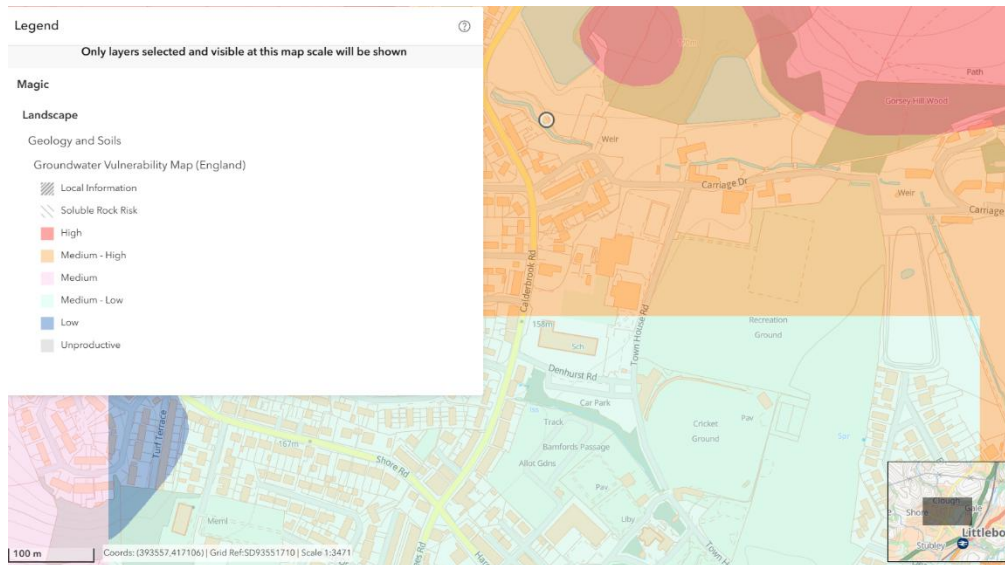


Figure 4.9: Groundwater Vulnerability Map (Source: Magic Maps)



Figure 4.10: Recorded Flood Outlines (Source: QGIS Layer from the EA)

- 4.9 It should be noted the site is within an area benefitting from river/sea flood defences, as can be seen in Figures 4.12 and 4.13.



Figure 4.12: River/Sea Flood Defence Locations (QGIS Layer from EA)

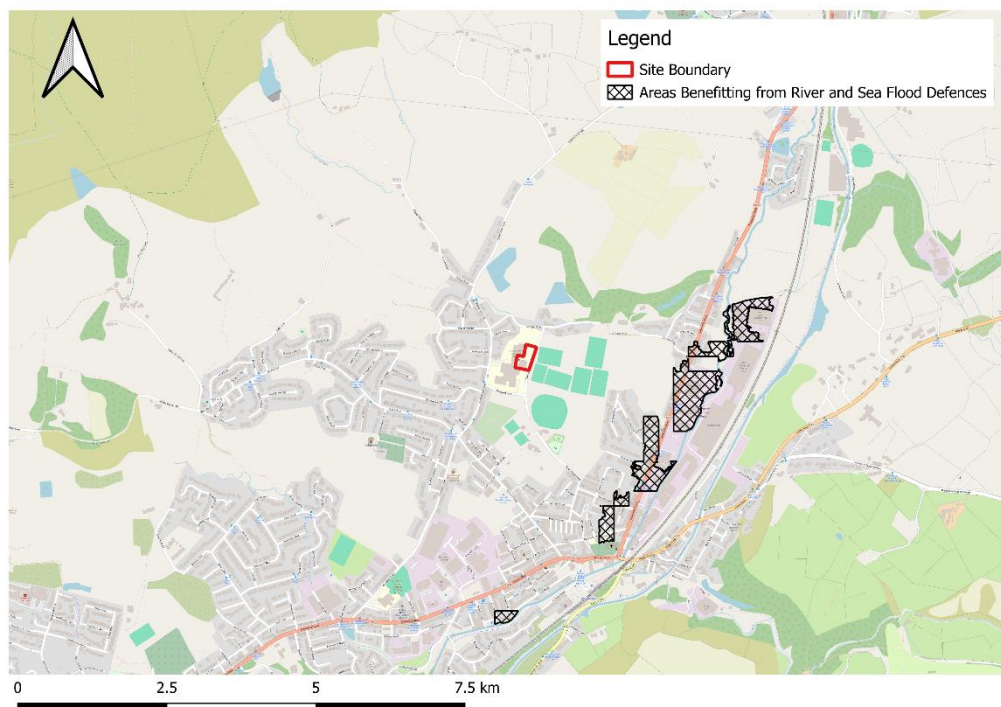


Figure 4.13: Areas Benefitting from River/Sea Flood Defences (QGIS Layer from EA)

Product 4 Data

- 4.10 The proposed development is located within the boundary of Flood Zone 3, Product 4 data from the Environment Agency has been used to identify potential future flood levels at the site, including the impact of climate change. The west of the proposed development is in Flood Zone 2 according to the Product 4 data.
- 4.11 The Product 4 data confirms that the site has not experienced any previous flooding. The nearest recorded flood event occurred in October 1998, towards the east approximately 300m away from the site boundary. The cause of flood was resulting from obstruction/ blockage – channel.
- 4.12 The analysis of future river levels indicates that the site could experience the following flood levels under climate change scenarios:

Flood Event Probability	Flood Level (mAOD)
1 in 100-year (1%)	158.26m
1 in 200-year (0.5%)	158.30m
1 in 1000-year (0.1%)	158.42m

- 4.13 A worst-case scenario analysis for the year 2135 suggests that, under upper climate change emissions, the site could experience flood levels reaching up to 158.47m AOD (+70%) during a 1 in 100-year (1%) event.
- 4.14 The nearest flood defence, Label 5, has a downstream crest level of 157.44m AOD. It remains the riparian owner's responsibility to ensure that the defences are maintained to this statutory flood defence level, in accordance with the requirements for this section of the Town House Brook.
- 4.15 Given the projected flood levels, the development would remain protected under typical flood conditions, assuming defences are properly maintained. However, breach scenarios must also be considered to assess residual flood risk.
- 4.16 Despite the site falling outside of breach-affected areas, the proposed development will incorporate flood resilience measures to address any residual risks. These measures will be detailed in Section 6 of this report.
- 4.17 Analysis of the topographic survey indicates that the lowest point within the proposed development site is at 156.01 mAOD. In the event of an upstream waterbody failure, this location could potentially be affected. However, based on the flood depth data provided in Appendix C, there is a low likelihood of flood depths exceeding 0.3m at the site. The surrounding topography suggests that the majority of any overland flow would naturally be directed towards the Greenfield areas to the east, thereby reducing the potential flood risk to the development itself.
- 4.18 The Product 4 Data is included in Appendix B.

5. Residual Risk and Exception Test

- 5.1 This section will explain how the proposed development will reduce the flood risk within the site and within the surrounding areas of the site.

Residual Risk

- 5.2 The primary residual risk that would remain at the site would be the drainage of surface water. Flood Mitigation and Management details will be given in Section 6. However, other residual risks remain such as a breach of a raised flood defence, blockage of a surface water conveyance system, overtopping of an upstream storage area, or failure of a pumped drainage system; failure of a reservoir; or a severe flood event that exceeds a flood management design standard, such as a flood that overtops a raised flood defence, or an intense rainfall event which the drainage system cannot cope with.
- 5.3 In order to further reduce the risk of surface water flooding within the proposed development, Sustainable Urban Drainage Systems would need to be installed to either safely discharge the surface water or to temporarily store the surface water for future use or discharge. This can be in the form but are not limited to, permeable paving, green roofs, attenuation storage or rainwater harvesting.

Sequential test

- 5.4 The Sequential Test is for developments which are located within a Flood Zone 2 or 3 areas. In this instance, only a small portion of the development is located within a Flood Zone 2 as the development has been designed to position most of the long-term occupying areas either within the Flood Zone 1 areas.
- 5.5 Moreover, the area benefits from river/sea flood defences, which results in a very low risk of river/sea flooding.
- 5.6 Therefore, it is deemed that the site meets the Sequential Test and is suitable for development.

Exception Test

- 5.7 The National Planning Policy Framework sets out the different conditions in terms of the vulnerability of the development and the flood zone and accordingly sets out the requirements to do an Exception Test. The table below describes the conditions required for an Exception Test.

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	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.

As the development is located within a Flood Zone 2 and is classified as a '**More Vulnerable**', an Exception Test is not required to be undertaken and therefore, the proposed development is appropriate.

6. Flood Mitigation/Management Measures

- 6.1 As stated in Section 4.2, the proposed development is at a Low risk of river/sea and at a medium risk of surface water flooding.
- 6.2 As the proposed development is for conversion of an existing building in Littleborough to a Family Hub providing a Children's Centre, Youth Club and NHS local services, flood mitigation/management measures are required in order to prevent any flooding at the site or elsewhere.
- 6.3 Although part of the site lies within Flood Zone 2, the conversion nature of the proposal limits opportunities for significant site-level interventions such as SuDS. Therefore, a focus is placed on property-level resistance and resilience measures.

Flood Resistance Measures

- 6.4 For water flood depth up to 0.3m a Water Exclusion Strategy should be adopted to prevent water ingress into the building.
- 6.5 The following measures are proposed:
- Repointing and sealing of external brickwork to reduce seepage.
 - Demountable flood barriers or raised thresholds at entrances.
 - Installation of non-return valves on surface and foul water outlets.
 - Use of impermeable floor finishes (e.g., tile or sealed concrete).
 - Water-resistant door and window frames where necessary.

Flood Resilience and Mitigation Measures

- 6.6 For flood depths more than 0.3m, is likely that structural damage could occur in traditional masonry construction due to excessive water pressures (differential head between outside and inside of the property); this can be worsened by impact from water-borne debris. In these circumstances, the strategy should be to allow water into the building.
- 6.7 The following measures are proposed to provide flood resilience, preserve building integrity and limit the impact of flooding;
- Hard flooring and flood resilient metal staircases/steps;
 - Heating systems, electrical sockets and utility meters should be raised above 0.9m
 - Submersible Puddle Pump to be available on site to dry out wet areas
 - The building design and materials will be in line with CLG 2007 'Improving the Flood Performance of New Buildings'.

Dry access and egress

- 6.8 The building has internal access to higher floors in the case of flooding.

- 6.9 Should flooding occur during the day, occupants can access the first floor until flooded areas have drained away.

7. Conclusion

- 7.1 The proposed development is situated within Flood Zone 2, indicating a low risk of fluvial (river/sea) flooding, and is also identified as having a medium risk of surface water flooding. However, only a very small portion of the building footprint lies within these areas, with the majority of the site falling outside of any designated flood zones or surface water risk areas.
- 7.2 According to the Environment Agency's Product 4 data, the site partially lies within Flood Zone 2 and Flood Zone 3. In the unlikely event of upstream waterbody failure, flood depths at the site are expected to remain below 0.3m, owing to the site's topography. The surrounding land naturally falls away to the Greenfield areas to the east, directing any overland flow away from the site.
- 7.3 Flood resistant and resilience measures have been considered to mitigate flood risk as part of the proposal.
- 7.4 The development is accessible for emergency access and egress during times of extreme flooding as no potential flooding is evident on any of the access routes.
- 7.5 The Flood Risk Assessment is commensurate with the development proposals and in summary, the development can be considered appropriate for the Flood Zone in accordance with the NPPF.

Appendices

Appendix A: Existing and Proposed Site Plans

Appendix B: Product 4 Datasheet

Appendix C: Maps of Likelihood of Flooding from River/Seas and Surface Water
at Varying Depths (Without and With Climate Change)

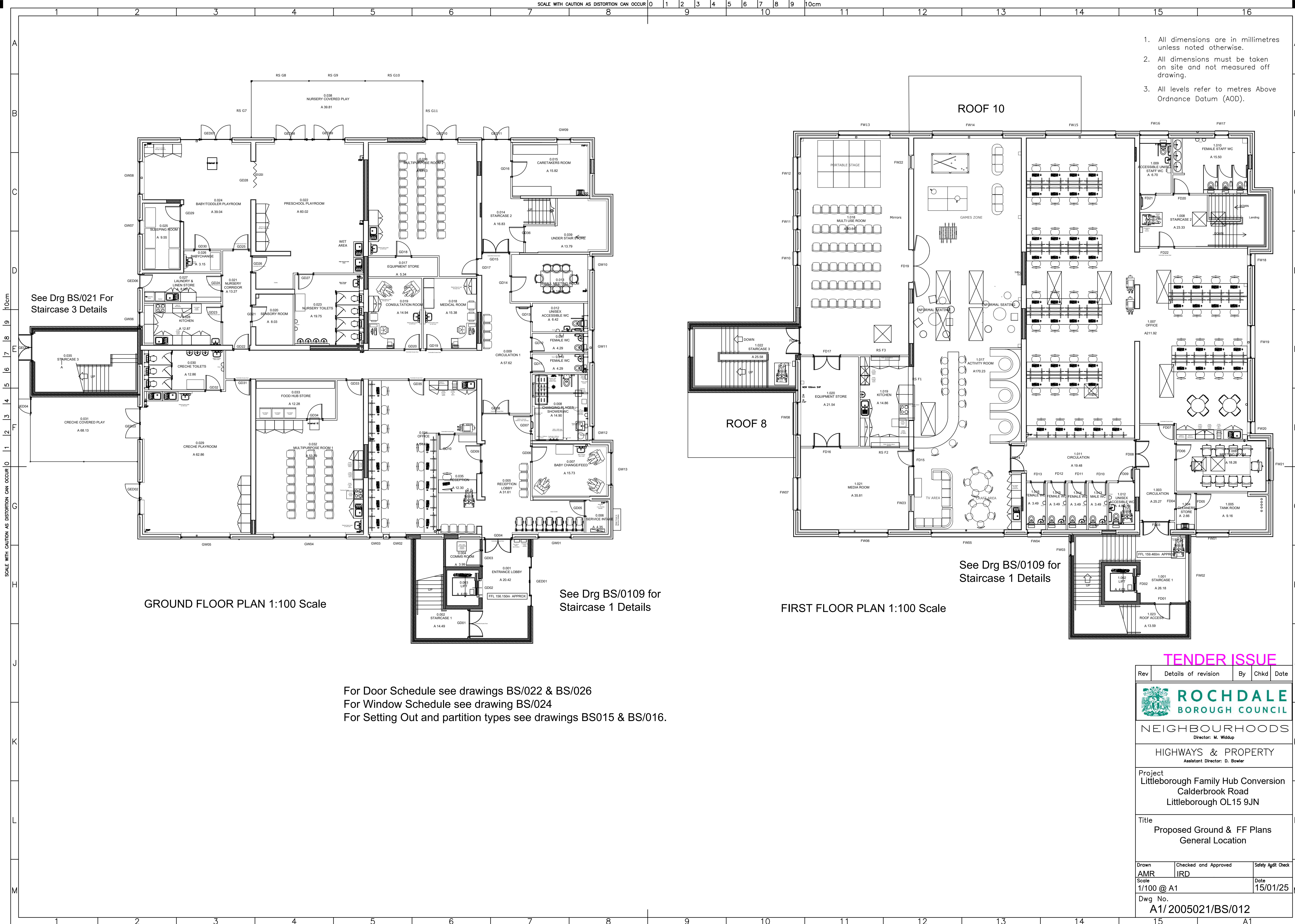
Appendix A: Existing and Proposed Site Plans



1. All dimensions are in millimetres unless noted otherwise.
2. All dimensions must be taken on site and not measured off drawing.
3. All levels refer to metres Above Ordnance Datum (AOD).

TENDER ISSUE

Rev	Details of revision	By	Chkd	Date
ROCHDALE BOROUGH COUNCIL NEIGHBOURHOODS Director: M. Widdup HIGHWAYS & PROPERTY Assistant Director: D. Bowler Project Littleborough Family Hub Conversion Calderbrook Road Littleborough OL15 9JN Title Existing Ground & First Floor Plans Drawn AMR Checked and Approved IRD Safety Audit Check Date 15/01/25 Dwg No. A1/2004570/BS/002				



1. All dimensions are in millimetres unless noted otherwise.
2. All dimensions must be taken on site and not measured off drawing.
3. All levels refer to metres Above Ordnance Datum (AOD).

GROUND FLOOR PLAN 1:100 Scale

See Drg BS/0109 for Staircase 1 Details

FIRST FLOOR PLAN 1:100 Scale

See Drg BS/0109 for Staircase 1 Details

For Door Schedule see drawings BS/022 & BS/026
For Window Schedule see drawing BS/024
For Setting Out and partition types see drawings BS015 & BS/016.

TENDER ISSUE

Rev	Details of revision	By	Chkd	Date
-----	---------------------	----	------	------

ROCHDALE
BOROUGH COUNCIL

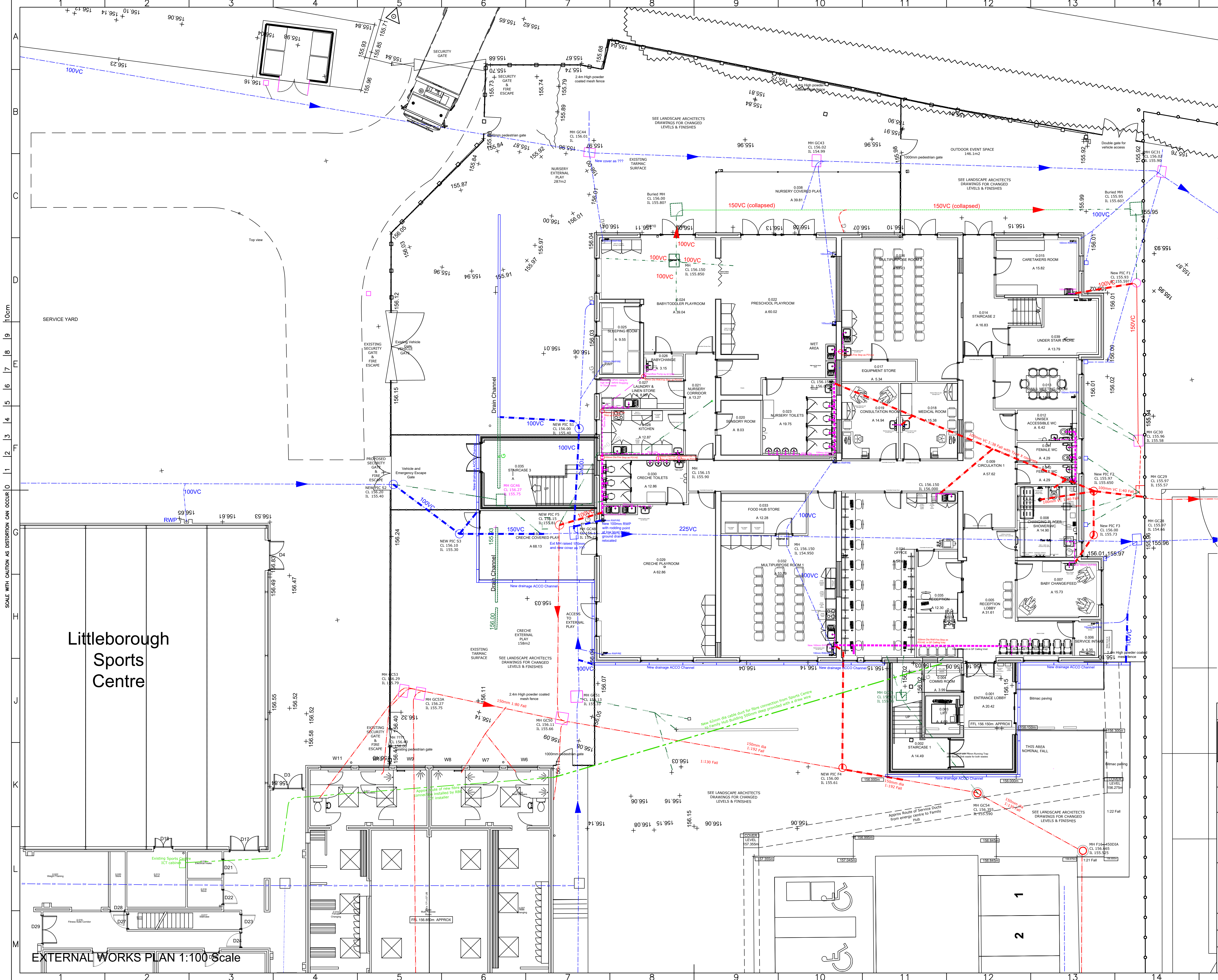
NEIGHBOURHOODS
Director: M. Widdup

HIGHWAYS & PROPERTY
Assistant Director: D. Bowler

Project
Littleborough Family Hub Conversion
Calderbrook Road
Littleborough OL15 9JN

Title
Proposed Ground & FF Plans
General Location

Drawn AMR	Checked and Approved IRD	Safety Audit Check
Scale 1/100 @ A1	Date 15/01/25	
Dwg No. A1/2005021/BS/012		



1. All dimensions are in millimetres unless noted otherwise.
2. All dimensions must be taken on site and not measured off drawing.
3. All levels refer to metres Above Ordnance Datum (AOD).

DRAINAGE KEY

- EXISTING FOUL DRAIN
- EXISTING SURFACE WATER DRAIN
- EXISTING DRAIN TO BE ABANDONED
- *NEW VC FOUL DRAIN AS R12/11
- NEW VC SURFACE WATER DRAIN AS R12/11.
- NEW 450mm DIA PIC AS R12/64
- NEW SURFACE WATER DRAINAGE CHANNEL AS R12/48
- NEW ABOVE GROUND DRAINAGE AS R11/11 & 21
- NEW 100mm INTERNAL RWP WITH RODDING EYE AT LOW LEVEL
- NEW 100mm INTERNAL SVP WITH RODDING EYE AT LOW LEVEL
- ALLOW FOR REPLACING ALL EXISTING INTERNAL RAINWATER PIPES WITH NEW 100mm DIA PIPES WITH ACCESS POINTS AT GROUND LEVEL CONNECTED TO NEW 100mm BAUDER ROOF OUTLETS.
- MOST EXISTING SVP PIPEWORK HAS BEEN REMOVED AS PART OF THE STRIP OUT ANY REMAINING IS TO BE REMOVED AND BE REPLACED WITH NEW 100mm UPVC PIPES AS R11/21 AND BRANCH PIPEWORK AS R11/11 TO SUIT NEW LAYOUT
- ALL INTERNAL DISTRIBUTION PIPEWORK IS TO BE INSTALLED IN ACCORDANCE WITH BUILDING REGULATION AD H1
- ALL FITTINGS TO HAVE MINIMUM 75mm TRAPS WITH 75mm RUNNING TRAPS PROVIDED TO BANKS OF WASHBASINS OR SINKS.
- ALL WCs TO HAVE 100mm UPVC BRANCH DRAINS AS R11/21 WITH 100mm FALL INDIVIDUAL BASINS TO HAVE MIN 32mm DIA WASTES WITH 18 - 50mm FALL BANKS OF UP TO 4 BASINS TO HAVE MIN 50mm DIA SHARED WASTES.

TENDER ISSUE

Rev	Details of revision	By	Chkd	Date

ROCHDALE BOROUGH COUNCIL

NEIGHBOURHOODS
Director: M. Widdup

HIGHWAYS & PROPERTY
Assistant Director: D. Bowler

Project
Littleborough Family Hub Conversion
Calderbrook Road
Littleborough OL15 9JN

Title
Proposed Ground Floor Drainage

Drawn AMR	Checked and Approved IRD	Safety Audit Check
Scale 1/100 @ A1	Date 22/01/25	
Dwg No. A1/2005021/BS/08		



Appendix B: Product 4 Datasheet

Flood risk assessment data

Location of site: 393589 / 417068 (shown as easting and northing coordinates)

Document created on: 17 March 2025

This information was previously known as a product 4.

Customer reference number: 9JGM2YDCKPRU

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

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

Or you can contact your Lead Local Flood Authority for further information.

Your Lead Local Flood Authority is Rochdale District.

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

About the models used

Model name: Rochdale and Littleborough 2013

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

Date: 1 June 2013

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

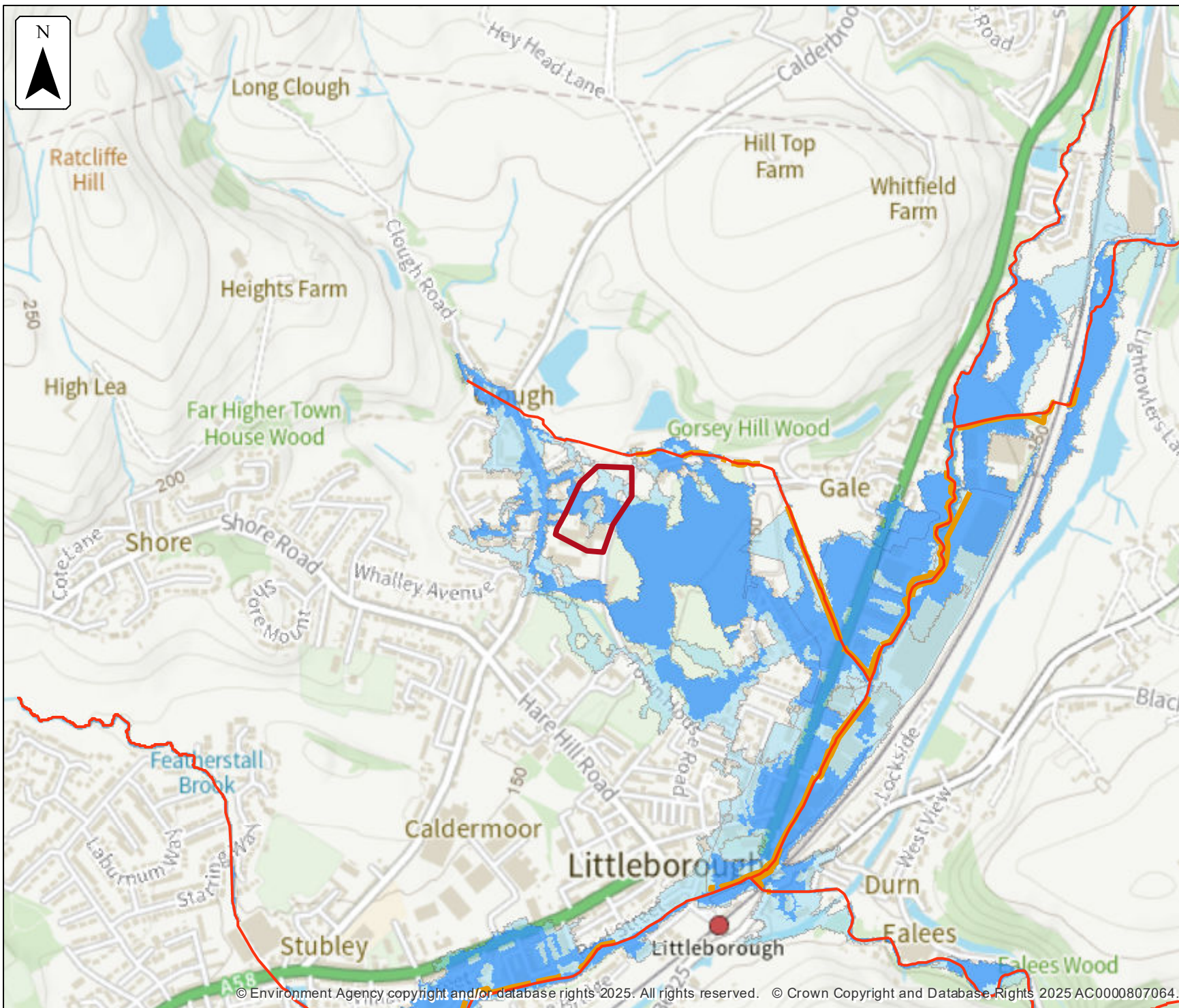
Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- 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

The flood zones are not currently being updated. The last update was in November 2023. Some of the flood zones may have changed, however all source data is included in the models below.



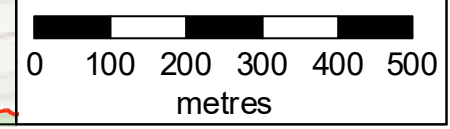
Flood map for planning

Location (easting/northing)
393589/417068

Scale
1:10,000

Created
17 Mar 2025

-  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

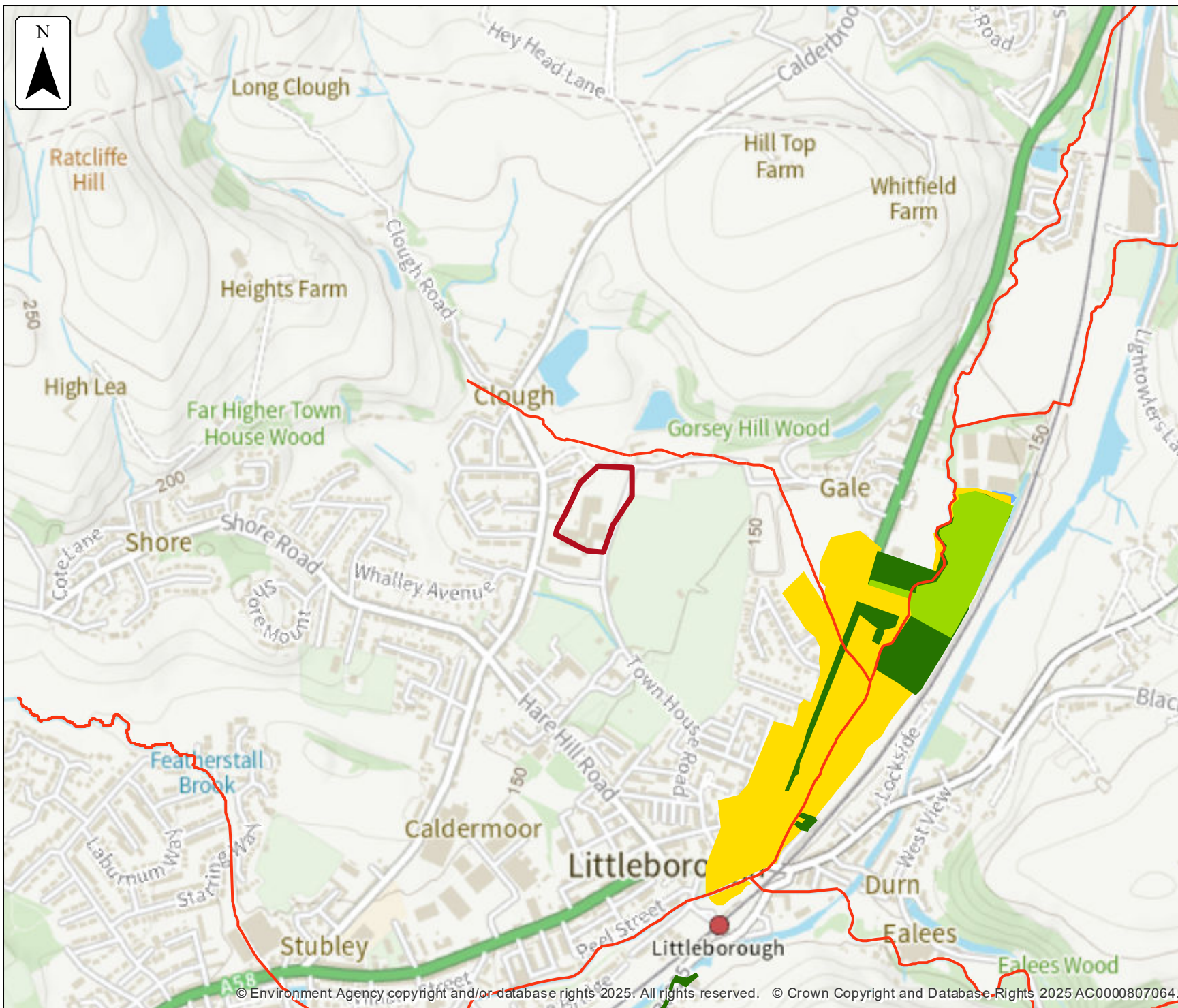
The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

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



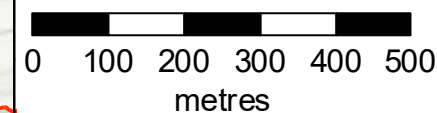
Past floods

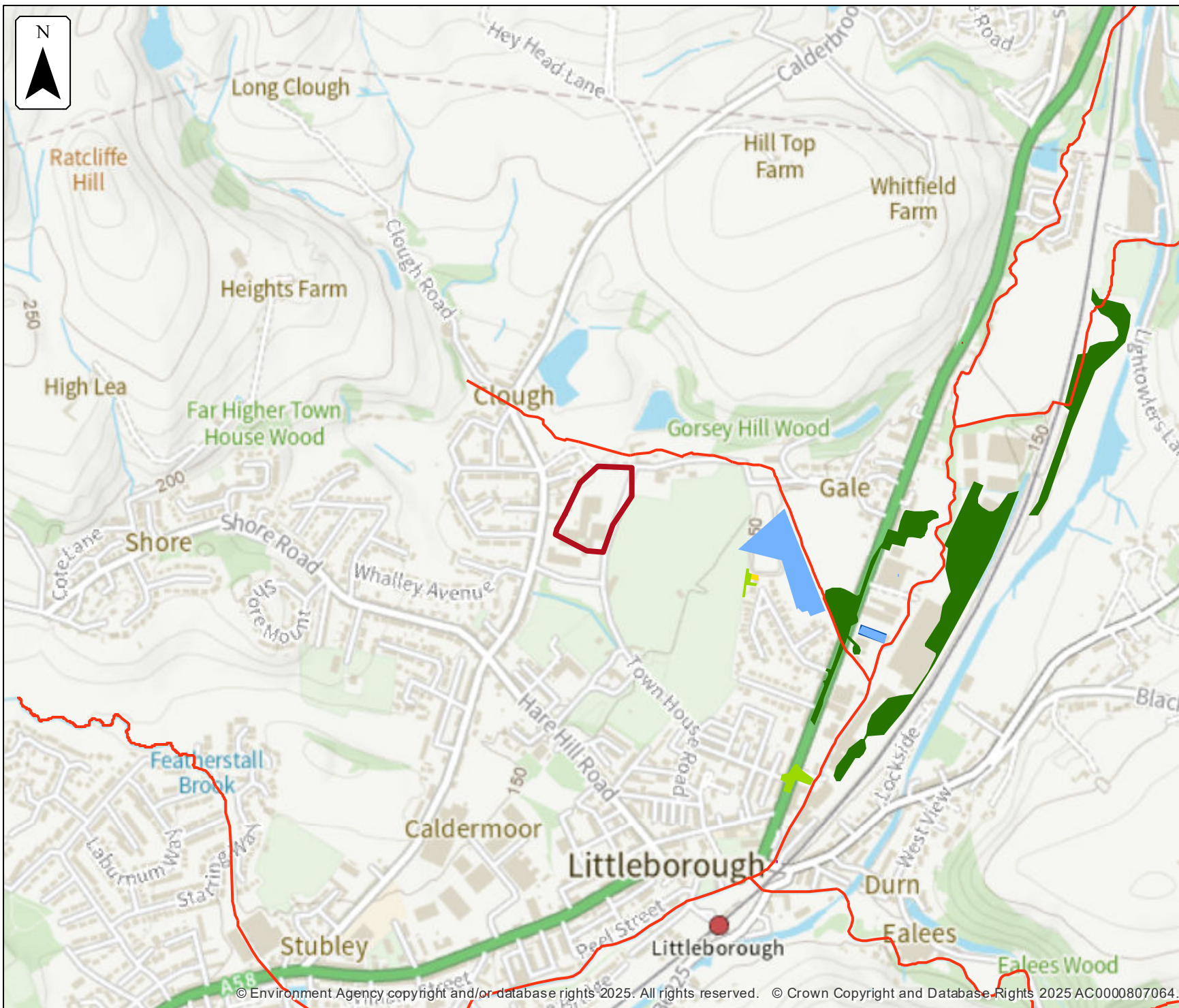
Location (easting/northing)
393589/417068

Scale
1:10,000

Created
17 Mar 2025

-  Selected area
-  Main river
- Date of flood event
 -  July, 2019
 -  March, 2019
 -  December, 2015
 -  July, 2012
 -  November, 2009
 -  January, 2008
 -  July, 2003





Past floods

Location (easting/northing)
393589/417068

Scale
1:10,000

Created
17 Mar 2025

- Selected area
- Main river
- Date of flood event
- June, 2002
- February, 2002
- June, 2000
- October, 1998
- March, 1998
- January, 1995
- December, 1991
- October, 1980



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
28 July 2019	31 July 2019	main river	channel capacity exceeded (no raised defences)	No
16 March 2019	16 March 2019	unknown	local drainage/surface water	No
26 December 2015	26 December 2015	main river	overtopping of defences	No
6 July 2012	6 July 2012	main river	overtopping of defences	No
18 November 2009	19 November 2009	main river	operational failure/breach of defence	No
21 January 2008	22 January 2008	main river	unknown	No
10 January 2008	11 January 2008	main river	operational failure/breach of defence	No
17 July 2003	17 July 2003	main river	operational failure/breach of defence	No
14 June 2002	15 June 2002	main river	channel capacity exceeded (no raised defences)	No
8 February 2002	9 February 2002	main river	channel capacity exceeded (no raised defences)	No
1 June 2000	2 June 2000	unknown	channel capacity exceeded (no raised defences)	No
23 October 1998	24 October 1998	unknown	obstruction/blockage - channel	No
6 March 1998	7 March 1998	unknown	obstruction/blockage - channel	No
28 January 1995	29 January 1995	unknown	unknown	No
21 December 1991	22 December 1991	unknown	channel capacity exceeded (no raised defences)	No
23 October 1980	24 October 1980	unknown	obstruction/blockage - channel	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



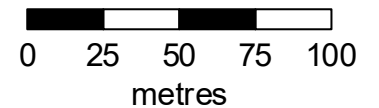
Flood defences

Location (easting/northing)
393589/417068

Scale
1:2,500

Created
17 Mar 2025

-  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	101115	Engineered High Ground	100		163.69	162.92	
2	101113	Engineered High Ground	100		162.92	162.25	
3	101114	Engineered High Ground	100		163.20	162.06	
4	101501	Engineered High Ground	100		157.84	155.67	
5	101500	Wall	100		157.44	157.54	
6	101499	Engineered High Ground	100		155.67	155.07	
7	173750	Engineered High Ground	100		156.59	155.07	
8	181164	Engineered High Ground	100		155.07	154.18	
9	101498	Engineered High Ground	100		155.07	153.82	
10	48772	Engineered High Ground	100		153.82	154.27	
11	101497	Engineered High Ground	100		154.18	154.55	
12	99171	Wall	100		154.79	154.58	
13	99170	Engineered High Ground	100		153.85	154.45	
14	34481	Embankment	100		154.51	154.51	
15	101903	Wall	100		154.39	154.35	
16	99169	Embankment	100		153.99	154.29	

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

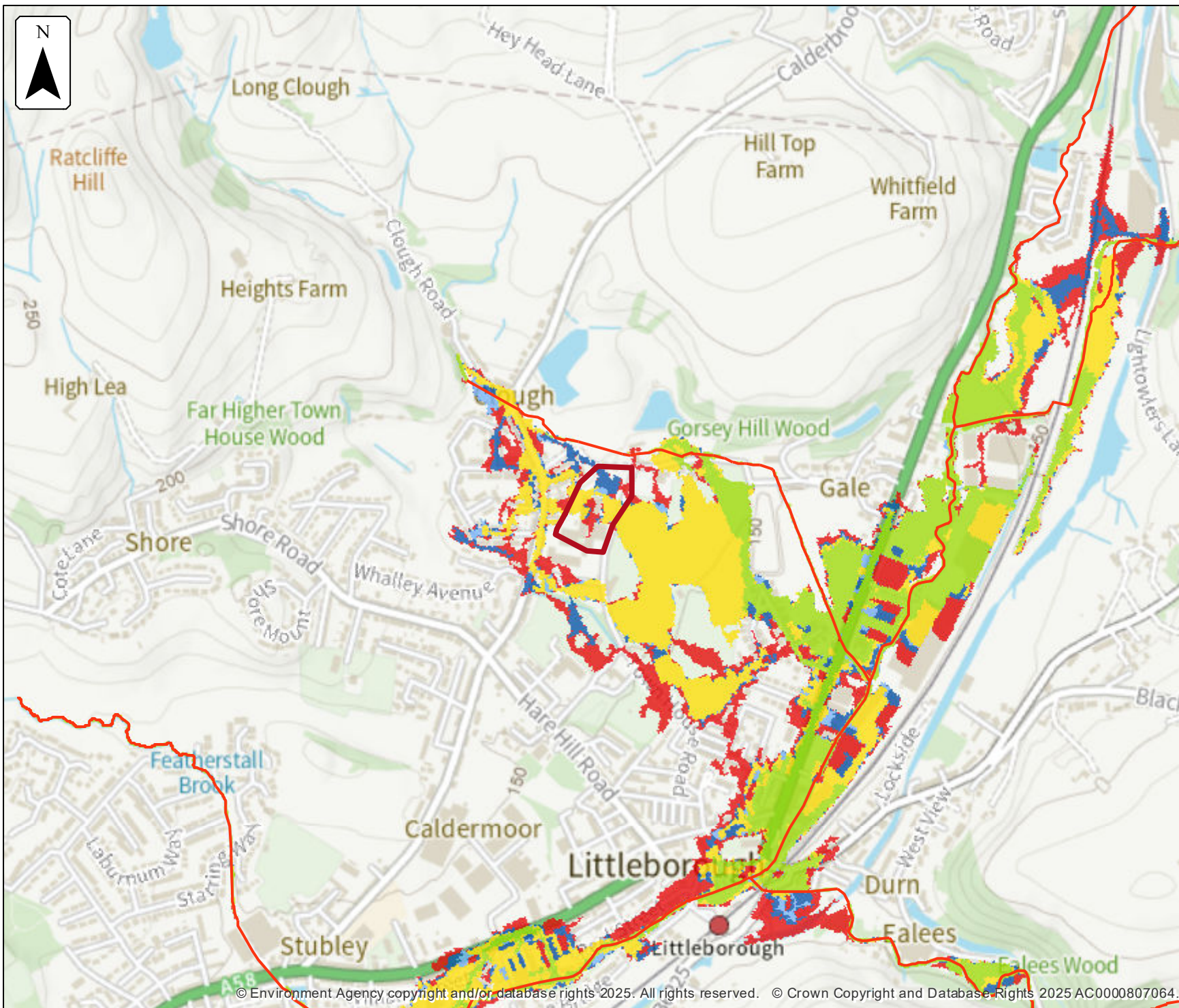
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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



Defended modelled fluvial extent

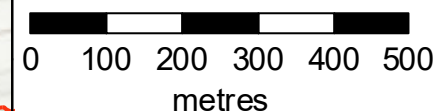
Location (easting/northing)
393589/417068

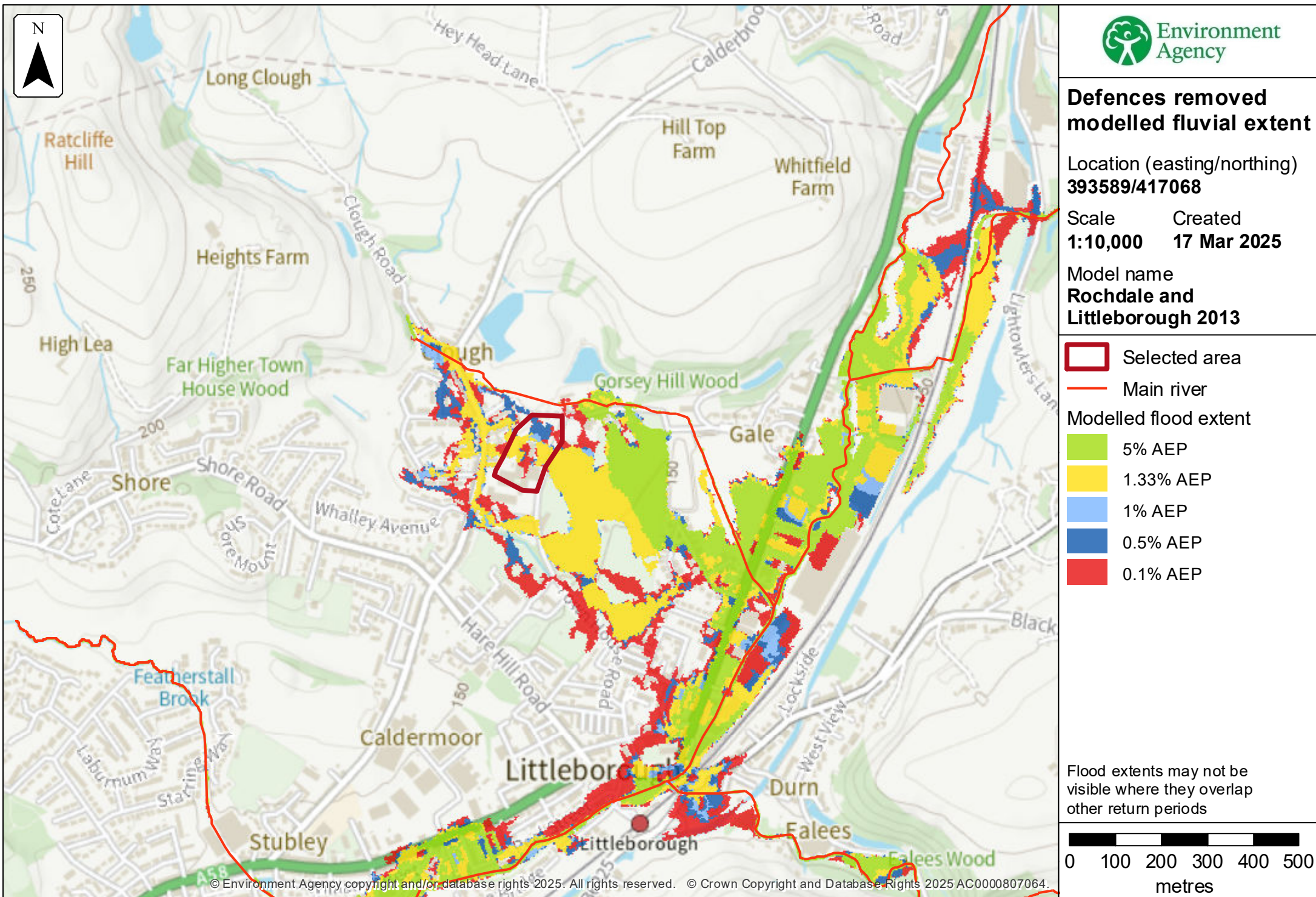
Scale Created
1:10,000 17 Mar 2025

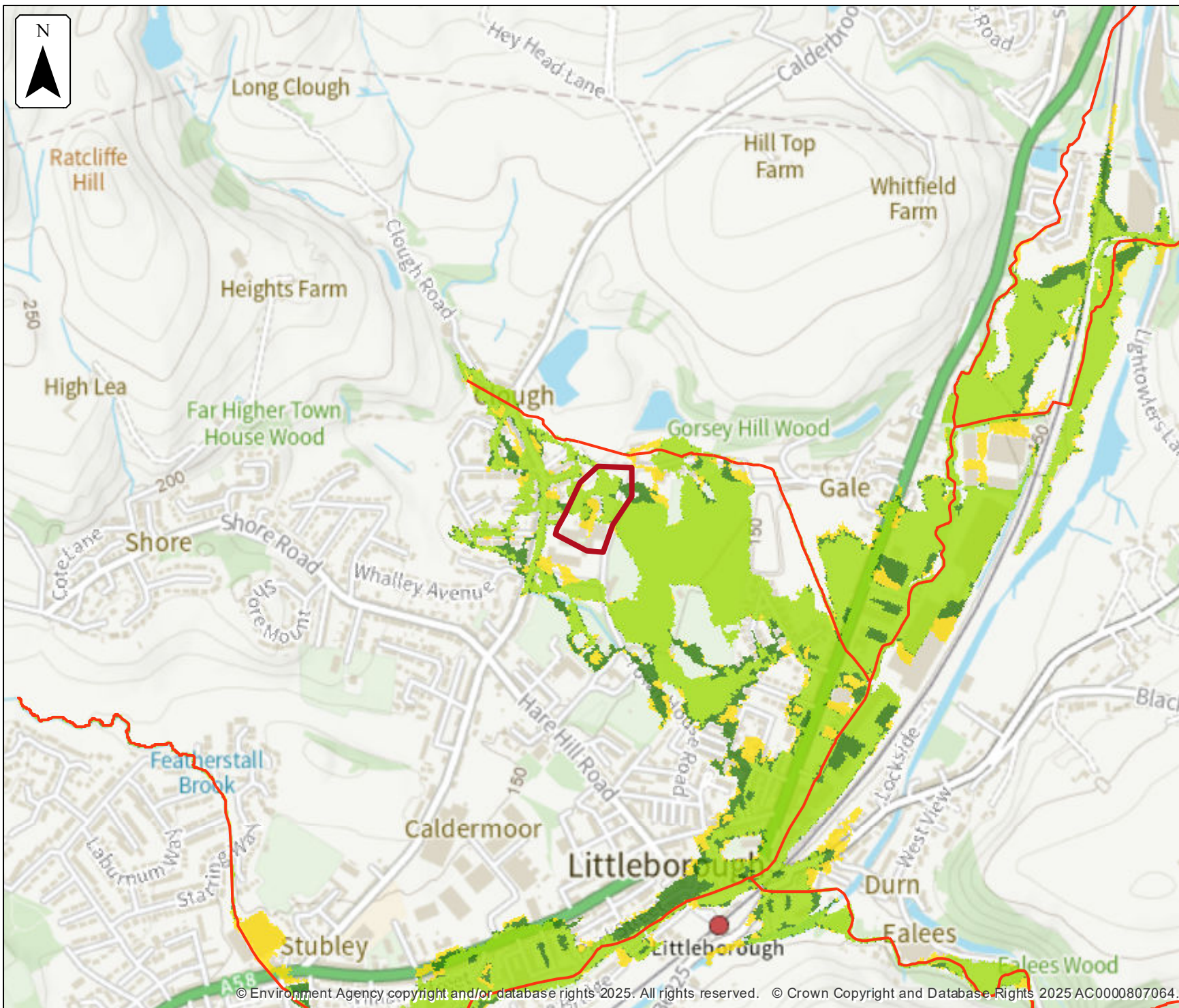
Model name
Rochdale and Littleborough 2013

-  Selected area
-  Main river
- Modelled flood extent**
-  5% AEP
-  1.33% AEP
-  1% AEP
-  0.5% AEP
-  0.1% AEP

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







Defended climate change modelled fluvial extent

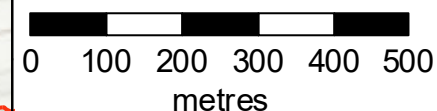
Location (easting/northing)
393589/417068

Scale Created
1:10,000 17 Mar 2025

Model name
Rochdale and Littleborough 2013

- Selected area
- Main river
- Modelled flood extent
- 1% AEP (+20%)
- 1% AEP (+35%)
- 1% AEP (+70%)

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





Defences removed climate change modelled fluvial extent

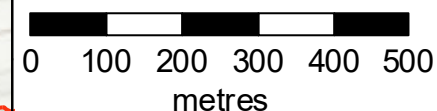
Location (easting/northing)
393589/417068

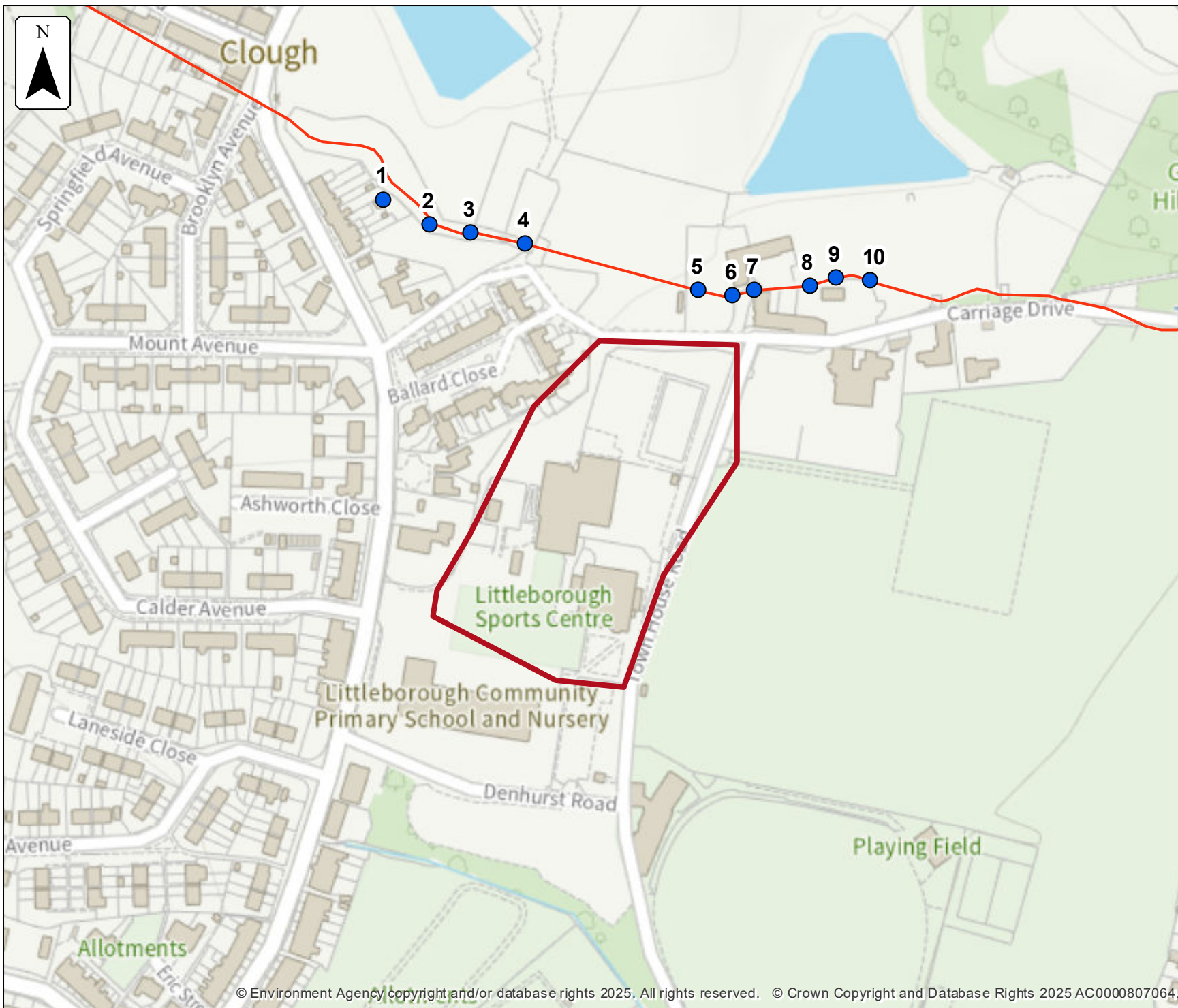
Scale Created
1:10,000 17 Mar 2025

Model name
**Rochdale and
Littleborough 2013**

- Selected area
- Main river
- Modelled flood extent
 - 1% AEP (+20%)
 - 1% AEP (+35%)
 - 1% AEP (+70%)

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





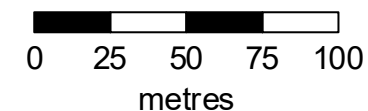
Defended modelled fluvial node locations

Location (easting/northing)
393589/417068

Scale Created
1:2,500 17 Mar 2025

Model name
**Rochdale and
Littleborough 2013**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

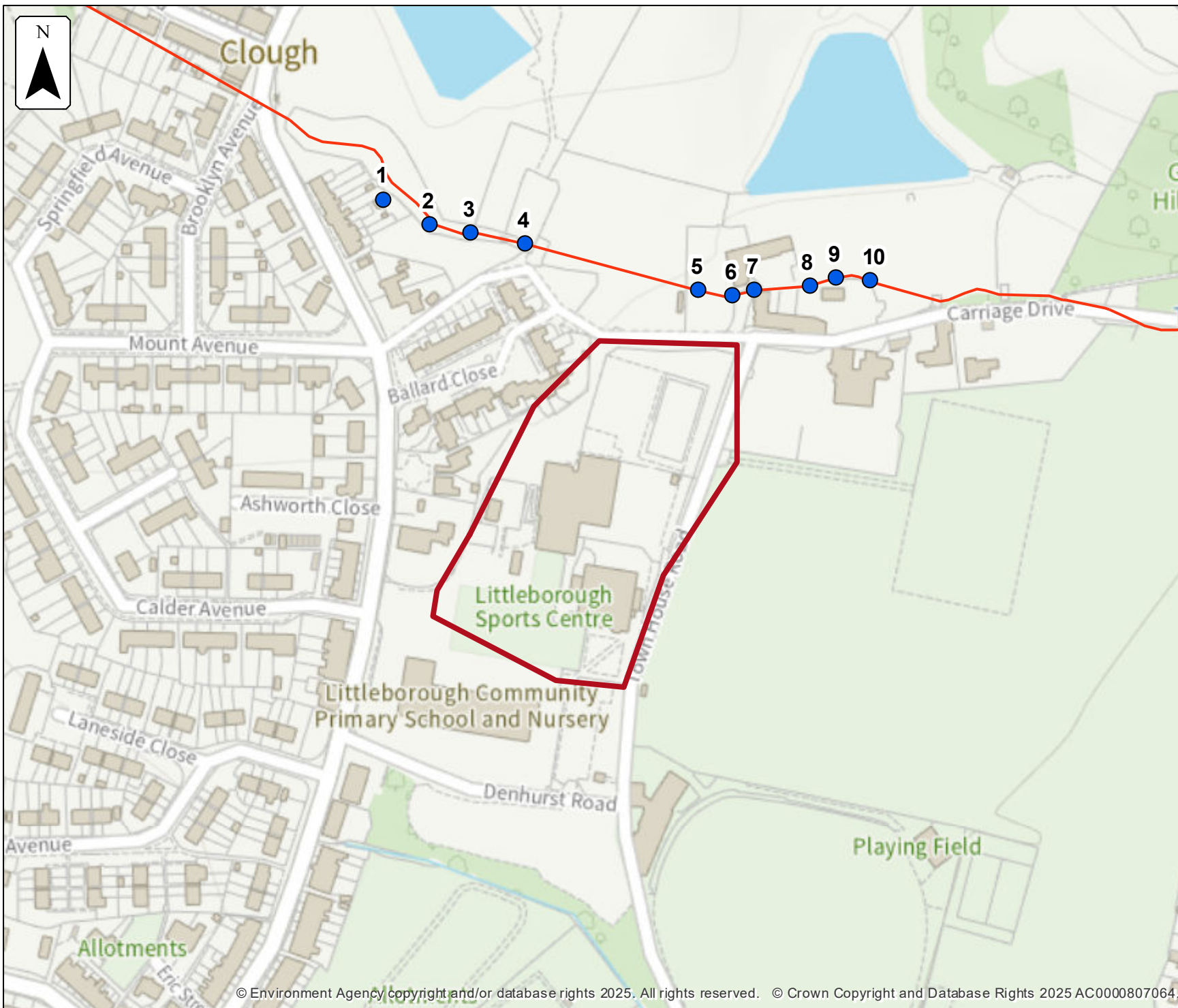
Label	Modelled location ID	Easting	Northing	5% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP	5% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Flow	Flow	Flow	Flow	Flow	Flow
1	1548045	393486	417218	163.07	163.10	163.17	163.19	163.21	163.30	2.26	2.48	2.89	2.92	2.97	3.05
2	1547383	393509	417205	162.57	162.60	162.66	162.67	162.68	162.73	2.26	2.48	2.93	3.01	3.12	3.51
3	1547772	393528	417201	162.18	162.21	162.28	162.29	162.31	162.38	2.26	2.48	2.93	3.01	3.12	3.51
4	1548075	393555	417196	161.46	161.49	161.55	161.56	161.58	161.63	2.35	2.58	3.06	3.14	3.27	3.73
5	1547273	393639	417174	158.02	158.10	158.24	158.26	158.30	158.42	2.35	2.58	3.06	3.14	3.27	3.73
6	1547442	393655	417171	157.85	157.95	158.11	158.14	158.19	158.39	2.35	2.58	3.06	3.14	3.27	3.73
7	1547800	393666	417174	157.05	157.07	157.13	157.14	157.15	157.19	2.35	2.58	3.06	3.14	3.27	3.73
8	1547814	393693	417176	156.68	156.73	156.77	156.77	156.77	156.78	2.46	2.70	3.22	3.31	3.46	4.0
9	1547524	393706	417179	156.69	156.74	156.79	156.79	156.80	156.81	2.46	2.70	3.22	3.31	3.46	4.0
10	1547724	393722	417178	156.70	156.76	156.82	156.83	156.84	156.86	2.33	2.34	2.34	2.35	2.36	2.37

Data in this table comes from the Rochdale and Littleborough 2013 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.

If no level or flow data is available for a scenario, no table will be shown.



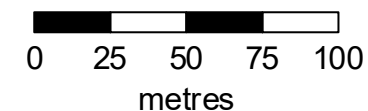
Defences removed modelled fluvial node locations

Location (easting/northing)
393589/417068

Scale Created
1:2,500 17 Mar 2025

Model name
**Rochdale and
Littleborough 2013**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

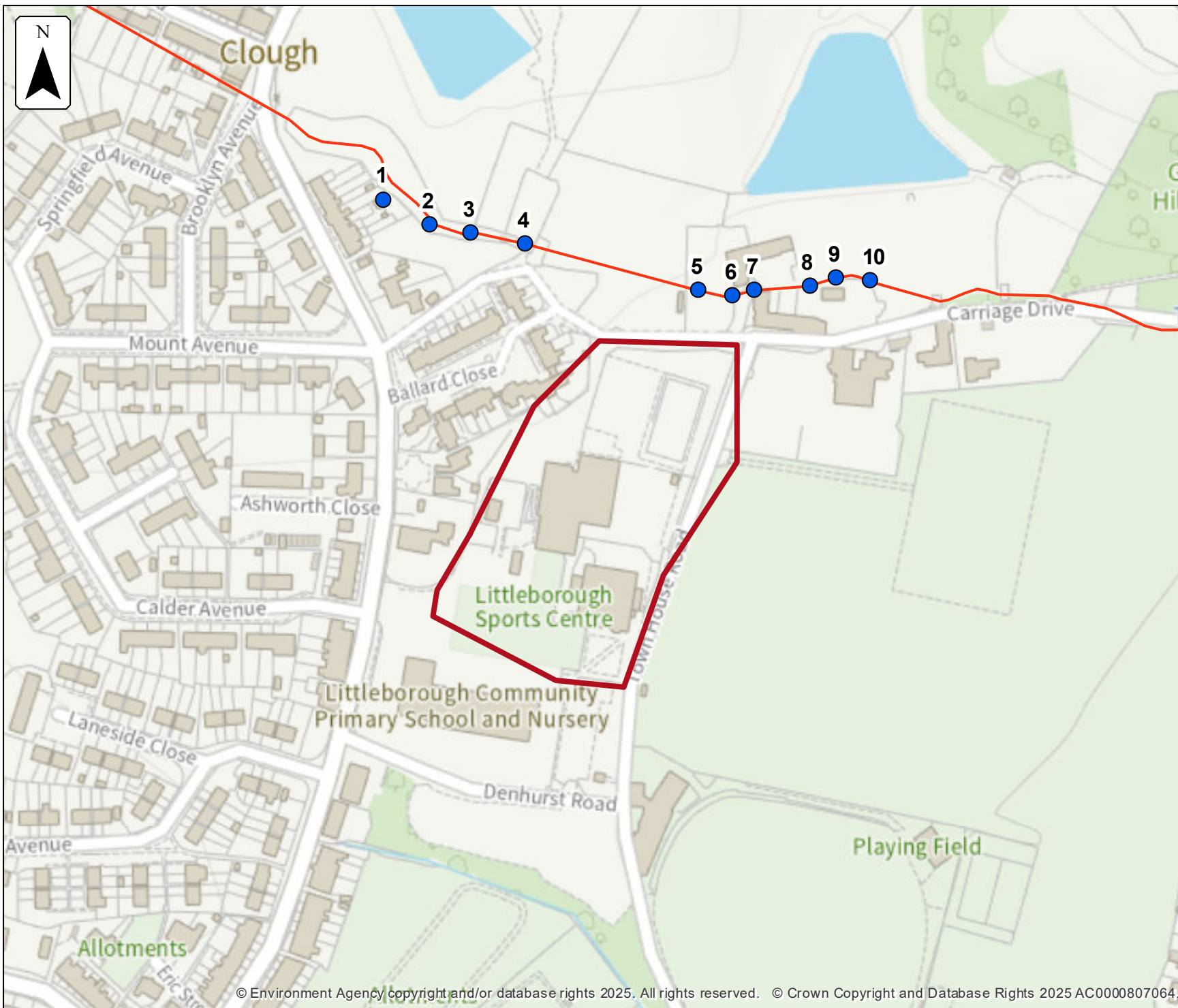
Label	Modelled location ID	Easting	Northing	5% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP	5% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Flow	Flow	Flow	Flow	Flow	Flow
1	1548045	393486	417218	163.07	163.10	163.17	163.19	163.21	163.30	2.26	2.48	2.89	2.92	2.97	3.05
2	1547383	393509	417205	162.57	162.60	162.66	162.67	162.68	162.73	2.26	2.48	2.93	3.01	3.12	3.51
3	1547772	393528	417201	162.18	162.21	162.28	162.29	162.31	162.38	2.26	2.48	2.93	3.01	3.12	3.51
4	1548075	393555	417196	161.46	161.49	161.55	161.56	161.58	161.63	2.35	2.58	3.06	3.14	3.27	3.73
5	1547273	393639	417174	158.02	158.10	158.24	158.26	158.30	158.42	2.35	2.58	3.06	3.14	3.27	3.73
6	1547442	393655	417171	157.85	157.95	158.11	158.14	158.19	158.39	2.35	2.58	3.06	3.14	3.27	3.73
7	1547800	393666	417174	157.04	157.07	157.12	157.13	157.14	157.19	2.35	2.58	3.06	3.14	3.27	3.73
8	1547814	393693	417176	156.65	156.67	156.69	156.69	156.70	156.72	2.46	2.69	3.12	3.21	3.34	3.88
9	1547524	393706	417179	156.67	156.69	156.73	156.73	156.74	156.78	2.38	2.57	2.89	2.97	3.09	3.47
10	1547724	393722	417178	156.68	156.71	156.75	156.76	156.77	156.82	2.33	2.33	2.34	2.34	2.34	2.35

Data in this table comes from the Rochdale and Littleborough 2013 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.

If no level or flow data is available for a scenario, no table will be shown.



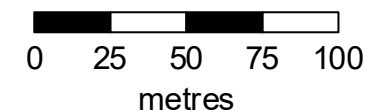
Defended climate change modelled fluvial node locations

Location (easting/northing)
393589/417068

Scale Created
1:2,500 17 Mar 2025

Model name
**Rochdale and
Littleborough 2013**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended climate change

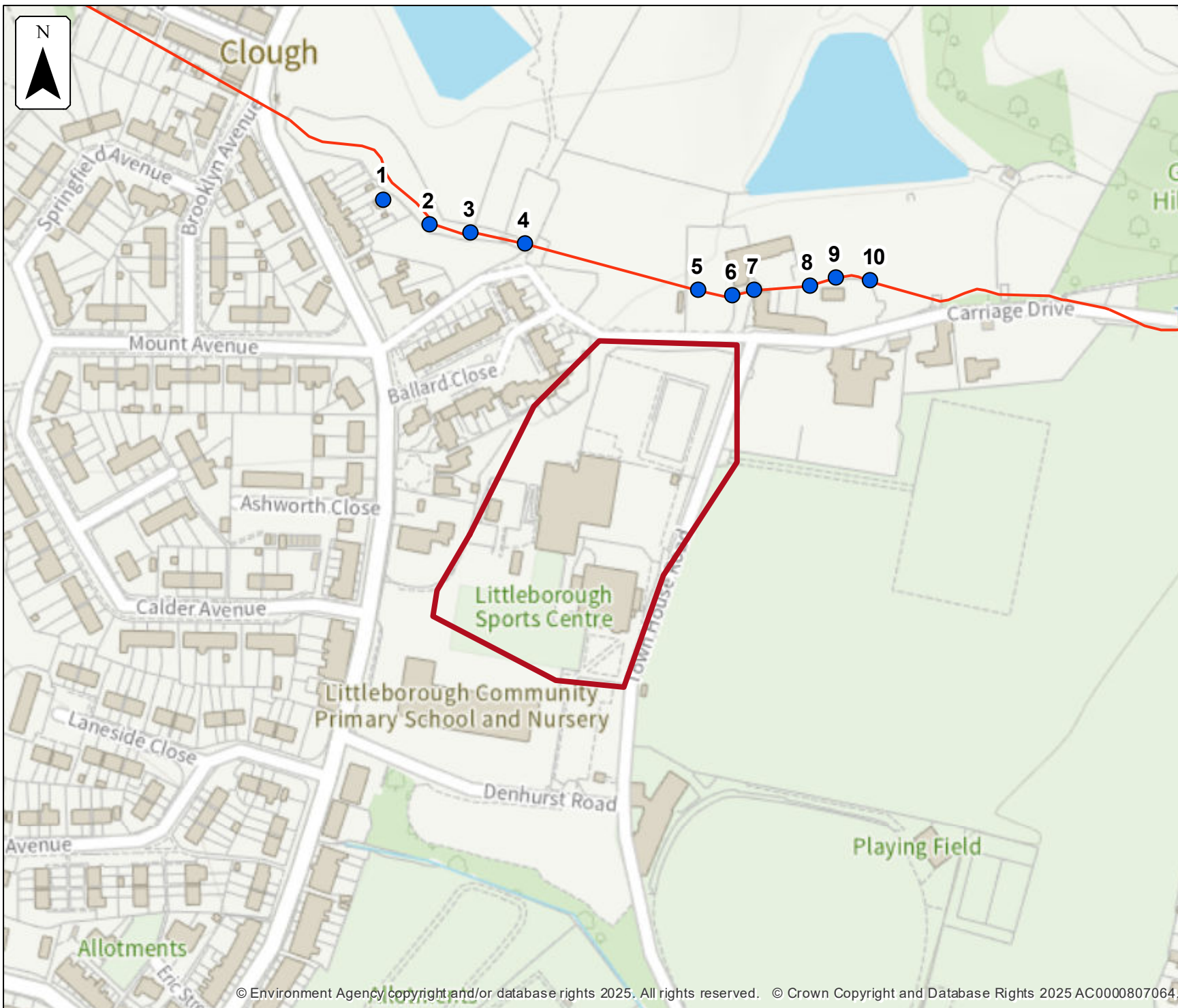
Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)
				Level	Level	Level	Flow	Flow	Flow
1	1548045	393486	417218	163.22	163.26	163.35	2.98	3.01	3.07
2	1547383	393509	417205	162.69	162.71	162.76	3.13	3.33	3.73
3	1547772	393528	417201	162.31	162.35	162.41	3.13	3.33	3.73
4	1548075	393555	417196	161.58	161.60	161.65	3.28	3.52	3.96
5	1547273	393639	417174	158.30	158.36	158.47	3.28	3.52	3.96
6	1547442	393655	417171	158.20	158.29	158.47	3.28	3.52	3.91
7	1547800	393666	417174	157.15	157.17	157.21	3.28	3.52	3.91
8	1547814	393693	417176	156.77	156.78	156.79	3.47	3.74	4.20
9	1547524	393706	417179	156.80	156.81	156.82	3.47	3.74	4.20
10	1547724	393722	417178	156.84	156.86	156.88	2.35	2.36	2.37

Data in this table comes from the Rochdale and Littleborough 2013 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.

If no level or flow data is available for a scenario, no table will be shown.



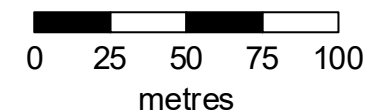
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
393589/417068

Scale Created
1:2,500 17 Mar 2025

Model name
**Rochdale and
Littleborough 2013**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)
				Level	Level	Level	Flow	Flow	Flow
1	1548045	393486	417218	163.21	163.26	163.35	2.98	3.01	3.07
2	1547383	393509	417205	162.69	162.71	162.76	3.13	3.34	3.73
3	1547772	393528	417201	162.31	162.35	162.41	3.13	3.34	3.73
4	1548075	393555	417196	161.58	161.60	161.65	3.28	3.52	3.96
5	1547273	393639	417174	158.30	158.36	158.47	3.28	3.52	3.96
6	1547442	393655	417171	158.19	158.29	158.47	3.28	3.52	3.91
7	1547800	393666	417174	157.14	157.17	157.20	3.28	3.52	3.91
8	1547814	393693	417176	156.70	156.72	156.72	3.34	3.61	4.10
9	1547524	393706	417179	156.74	156.77	156.79	3.09	3.23	3.65
10	1547724	393722	417178	156.77	156.81	156.84	2.34	2.34	2.34

Data in this table comes from the Rochdale and Littleborough 2013 model.

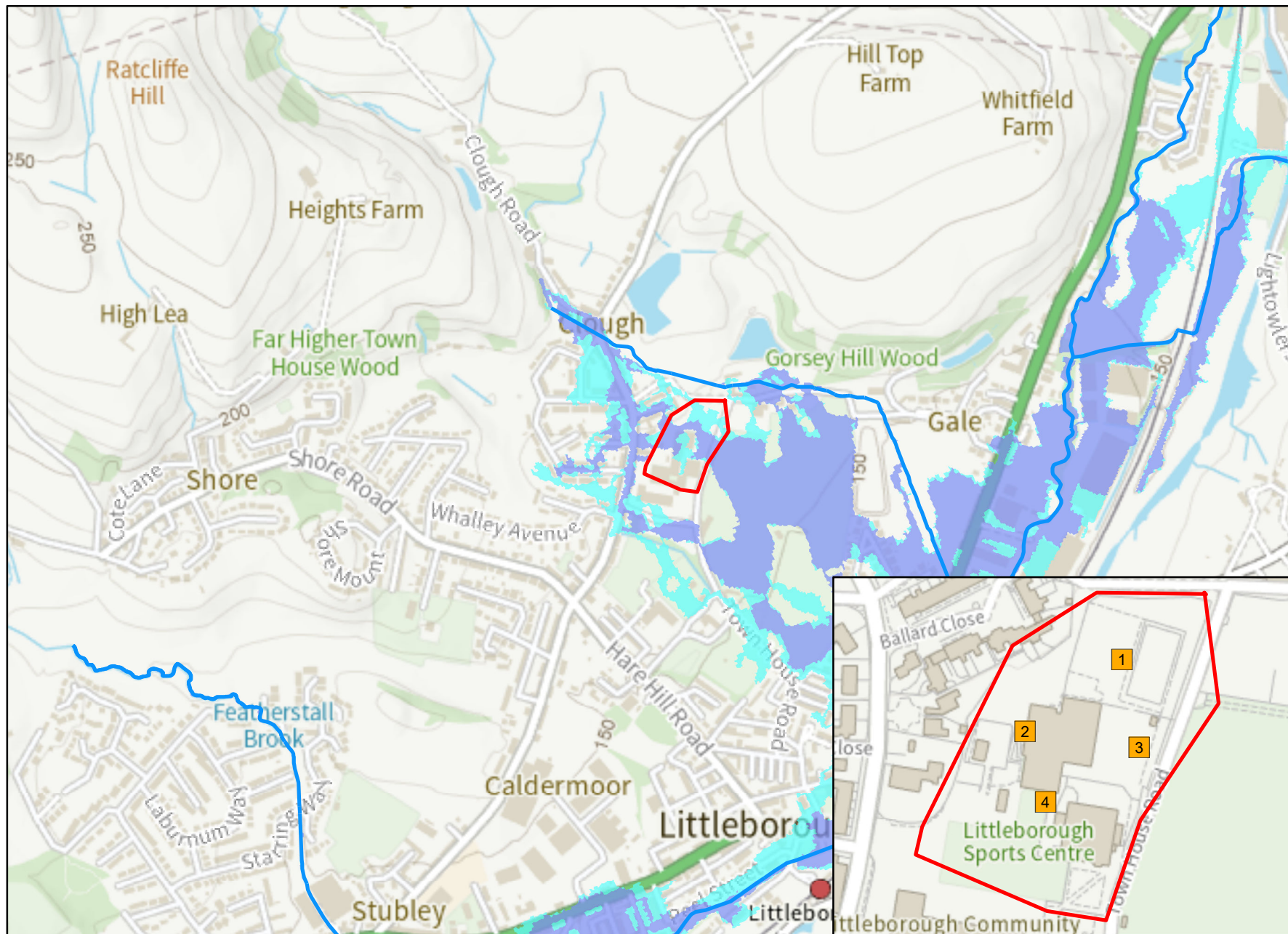
Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.

If no level or flow data is available for a scenario, no table will be shown.

Detailed Flood Map Centred on Town House Drive, Littleborough, OL15 9JN.

Created 18/03/2025 [EIR2025/00551]



1:10,001



Legend

-  Site Location
-  2D Levels
-  Main River
-  Flood Zone 2
-  Flood Zone 3

					Undefended		Defended	
Map Reference	Model Node Reference	Easting	Northing	Data	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow
1	2D Levels	393611	417112	Modelled Water Level (m aodN)	157.22	157.19	157.26	157.22
2		393561	417076	Modelled Water Level (m aodN)	157.41	157.48	157.41	157.46
3		393618	417069	Modelled Water Level (m aodN)	156.52	156.49	156.52	156.53
4		393573	417041	Modelled Water Level (m aodN)		156.90		157.24

Model data taken from Rochdale and Littleborough 2013

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes:

*Climate Change Scenario - 35% and 70% increases in flow calculated for the 2080's (2070 - 2115). Please see <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances> for more information regarding the new climate change guidance. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

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 Rochdale District.

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 Greater Manchester Merseyside and Cheshire Environment Agency team at inforequests.gmmc@environment-agency.gov.uk for:

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

Appendix C: Maps of Likelihood of Flooding from River/Seas and Surface Water at Varying Depths (Without and With Climate Change)

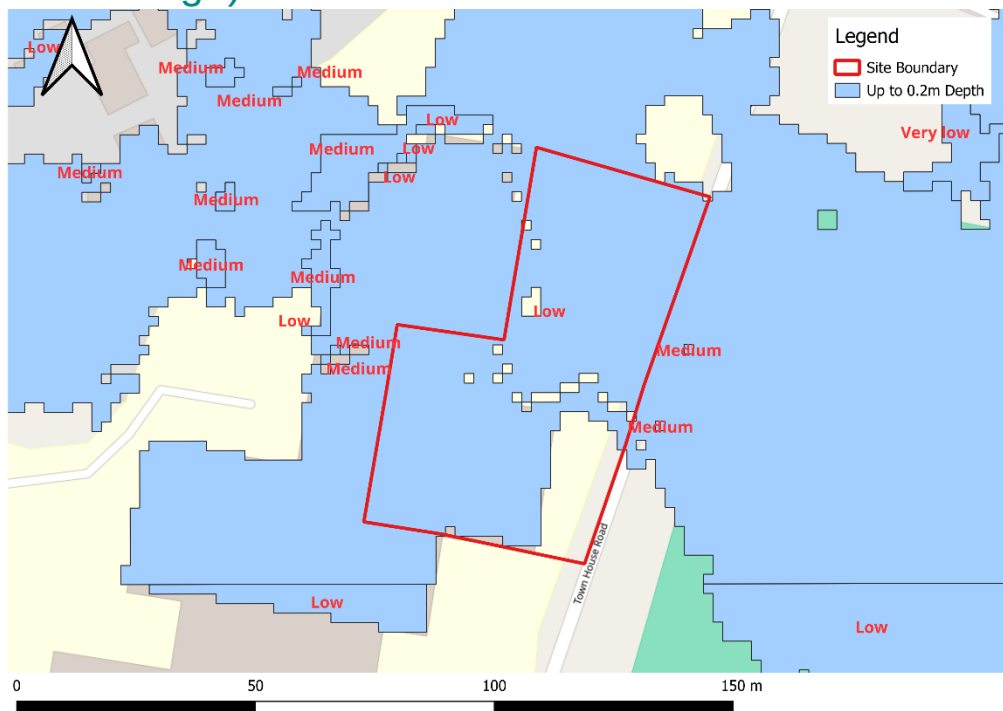


Figure C.1: Likelihood of River/Sea Flooding of Up to 0.2m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

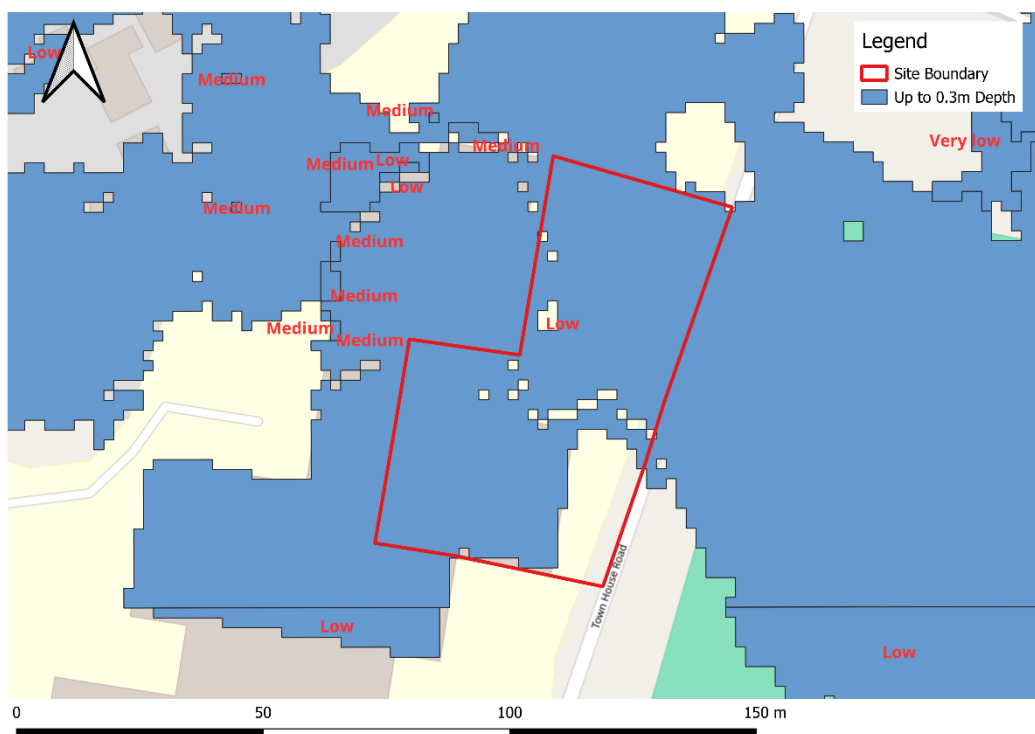


Figure C.2: Likelihood of River/Sea Flooding of Up to 0.3m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

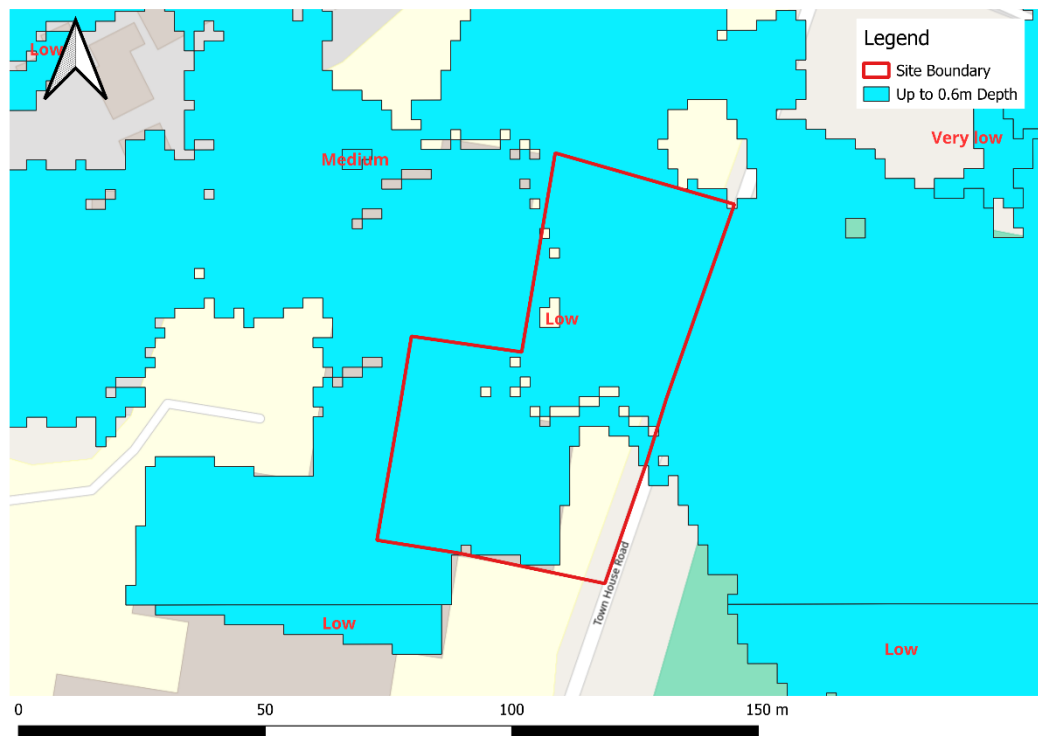


Figure C.3: Likelihood of River/Sea Flooding of Up to 0.6m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

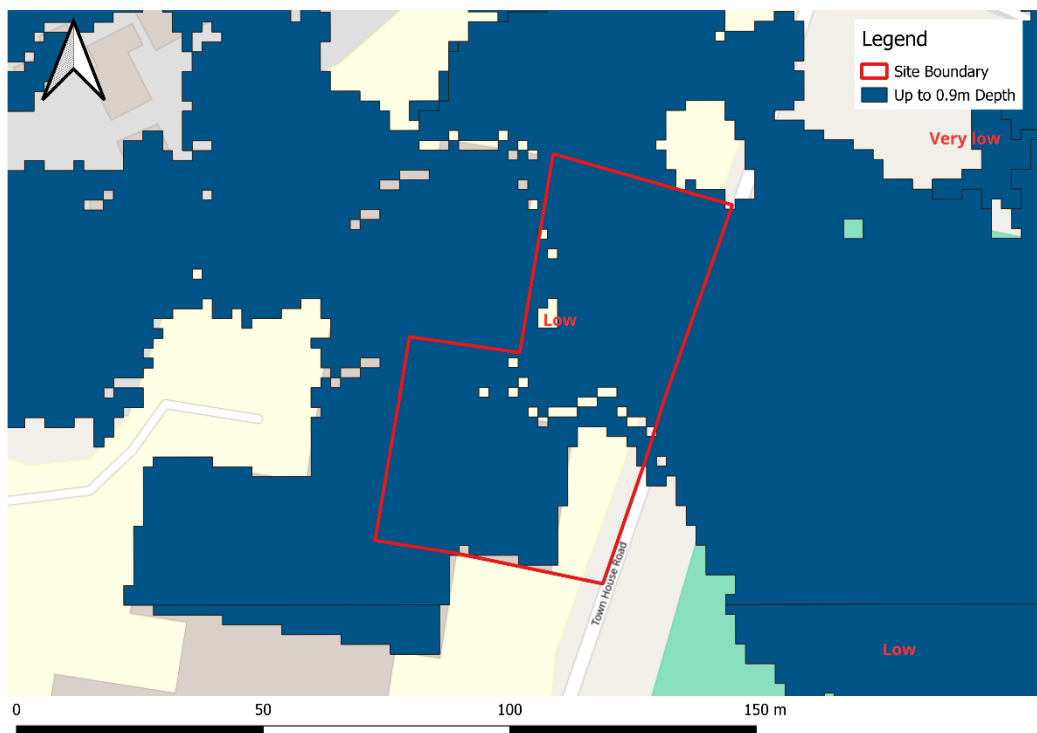


Figure C.4: Likelihood of River/Sea Flooding of Up to 0.9m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

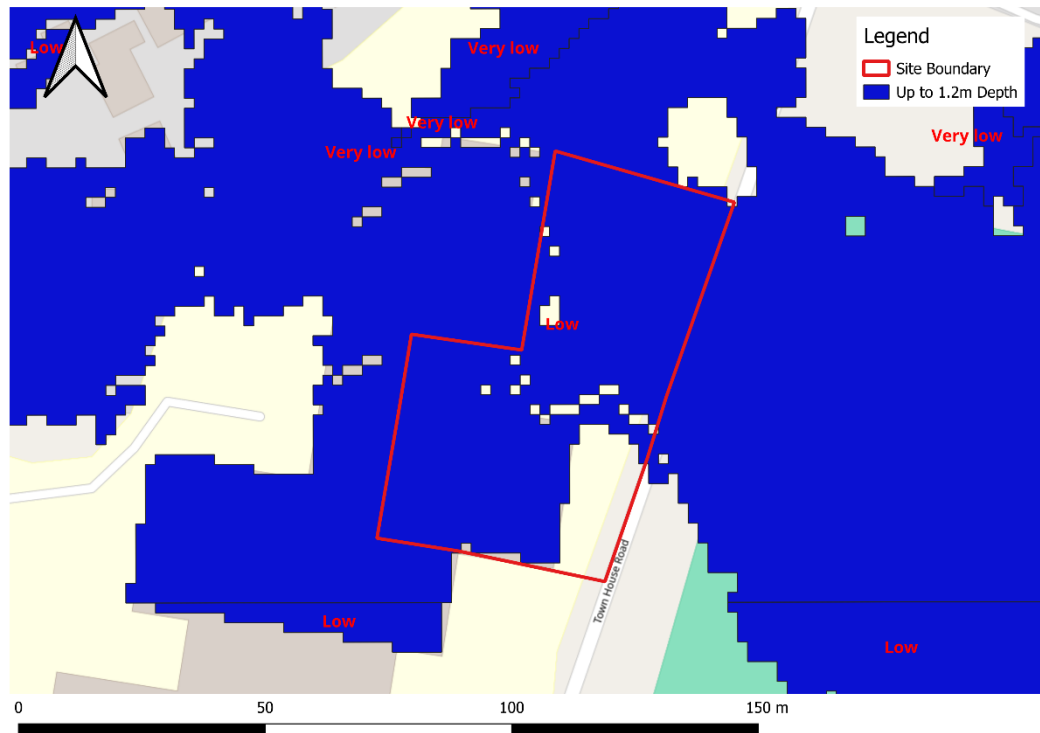


Figure C.5: Likelihood of River/Sea Flooding of Up to 1.2m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

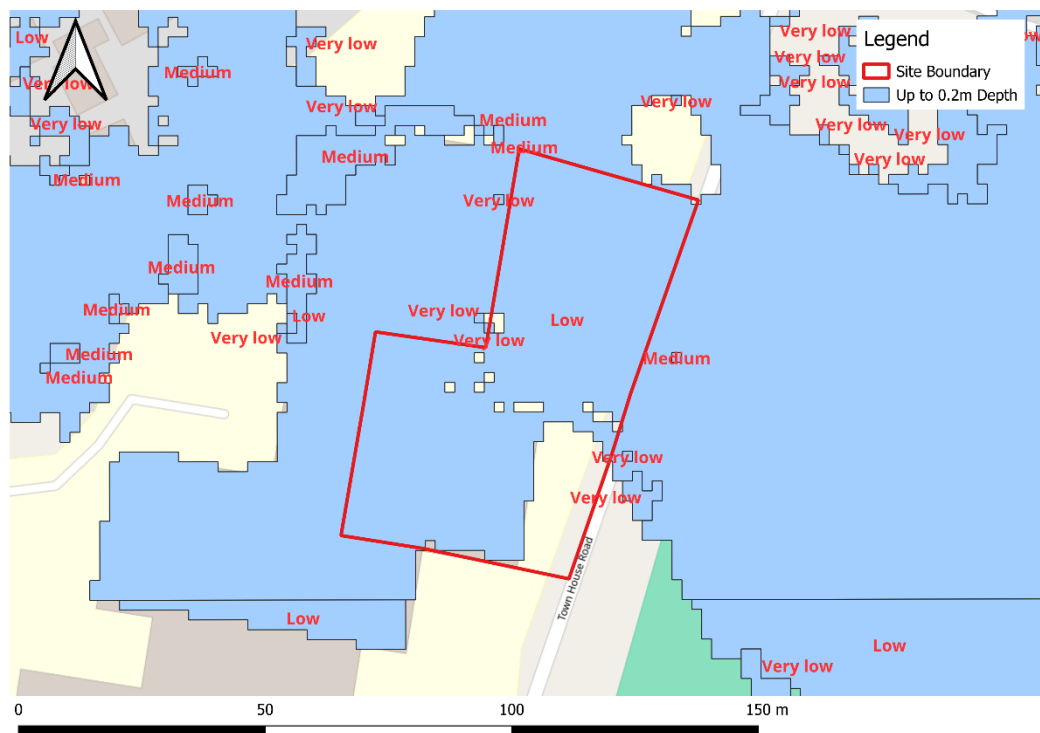


Figure C.6: Likelihood of River/Sea Flooding of Up to 0.2m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

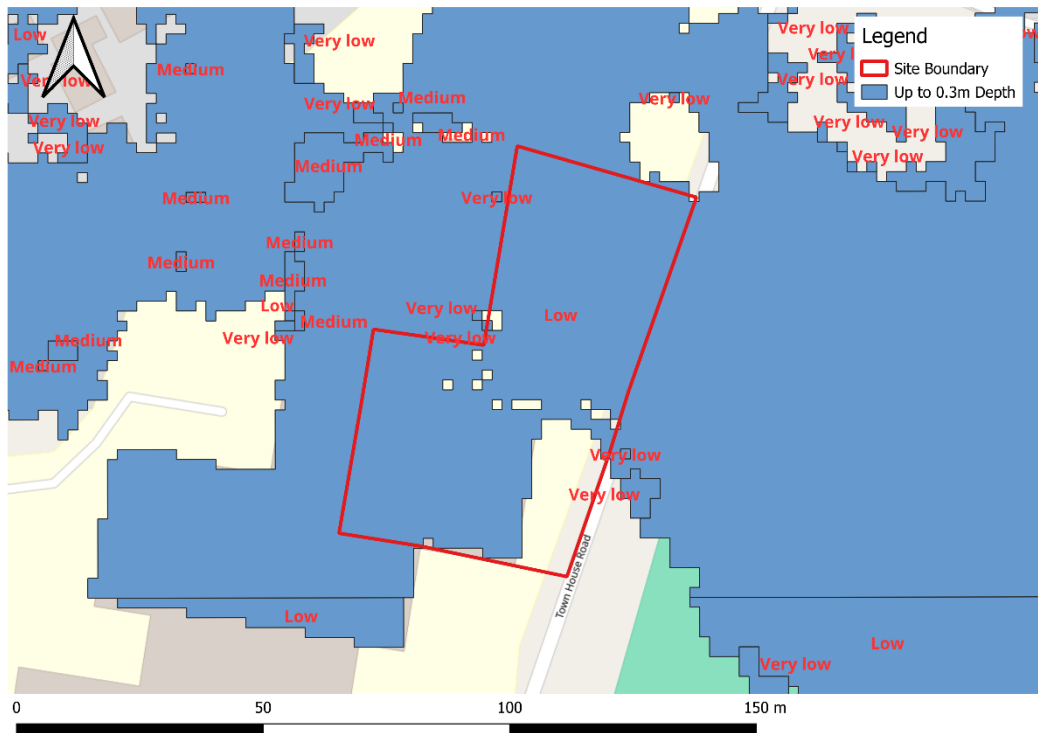


Figure C.7: Likelihood of River/Sea Flooding of Up to 0.3m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

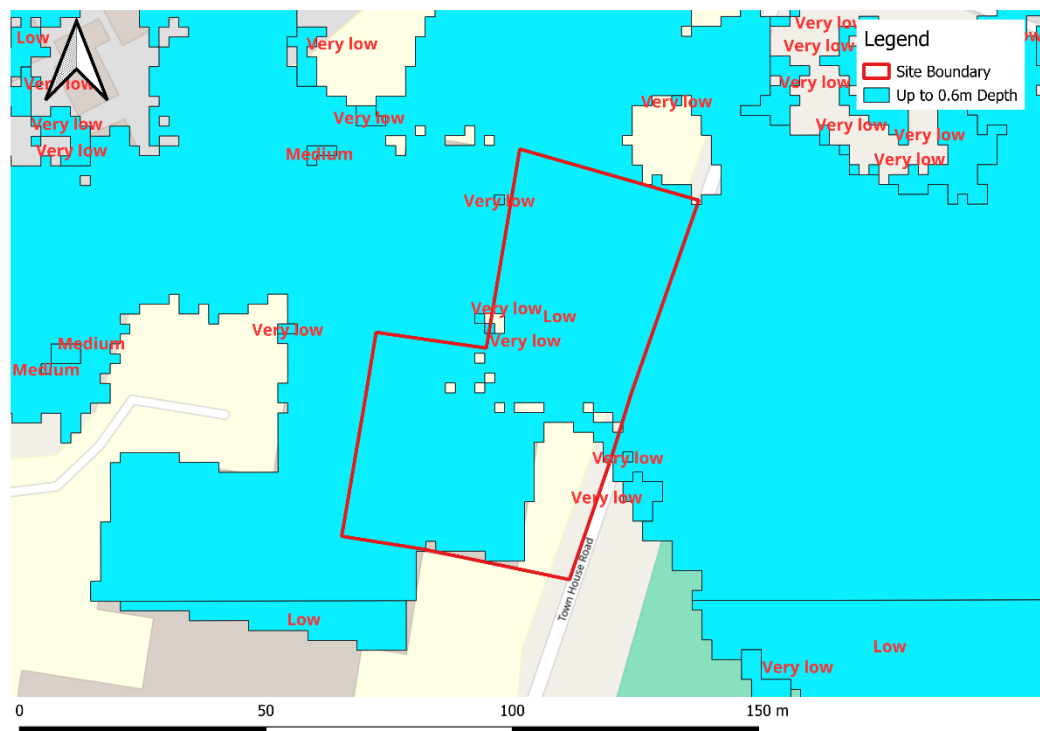


Figure C.8: Likelihood of River/Sea Flooding of Up to 0.6m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

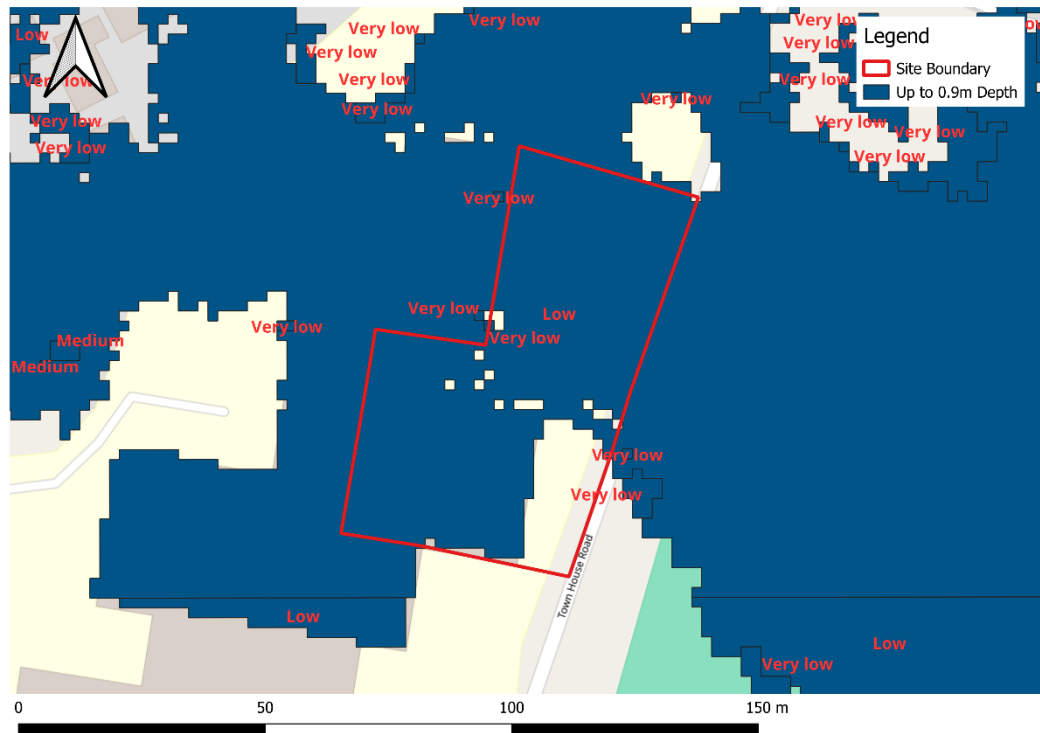


Figure C.9: Likelihood of River/Sea Flooding of Up to 0.9m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

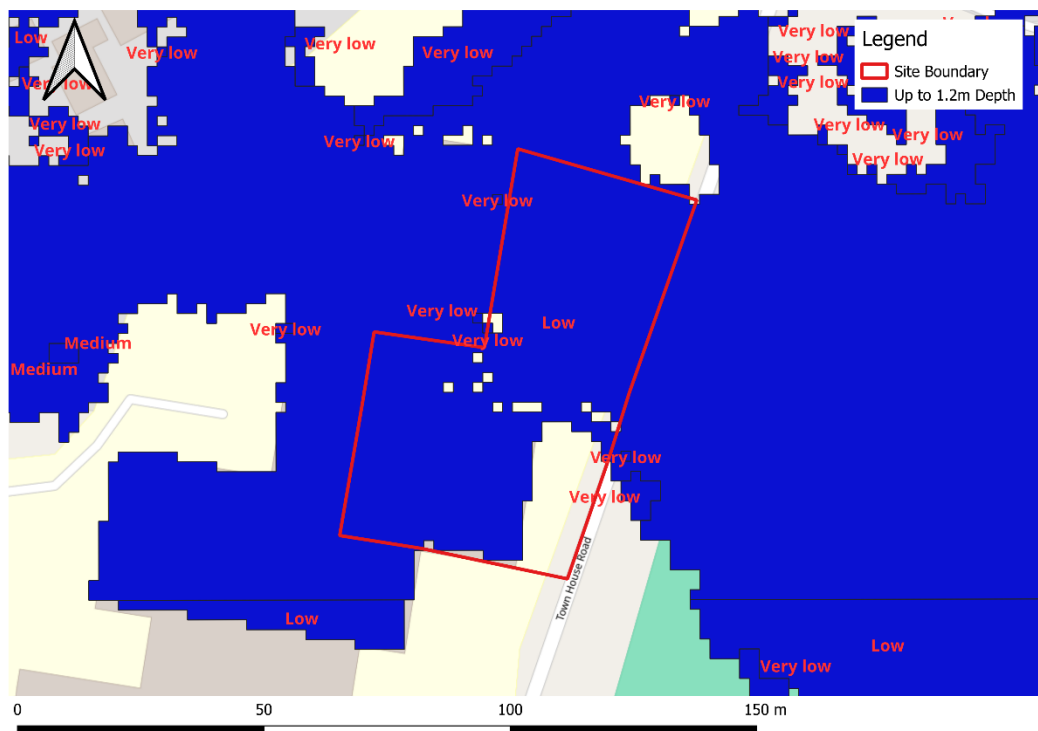


Figure C.10: Likelihood of River/Sea Flooding of Up to 1.2m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

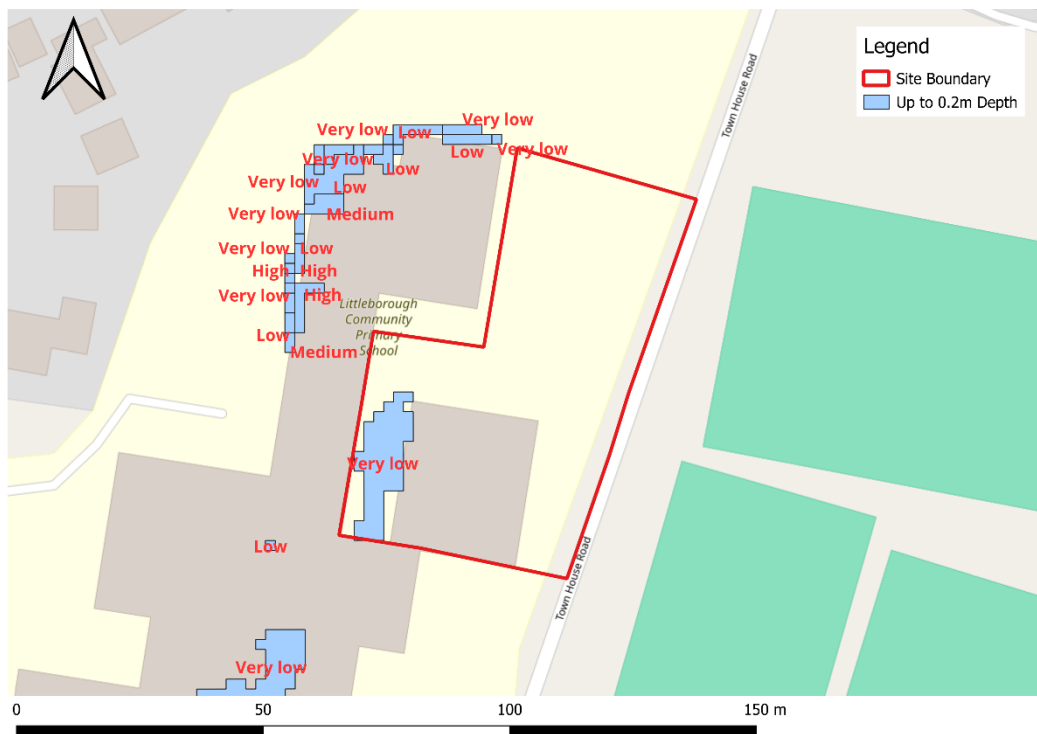


Figure C.11: Likelihood of Surface Water Flooding of Up to 0.2m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

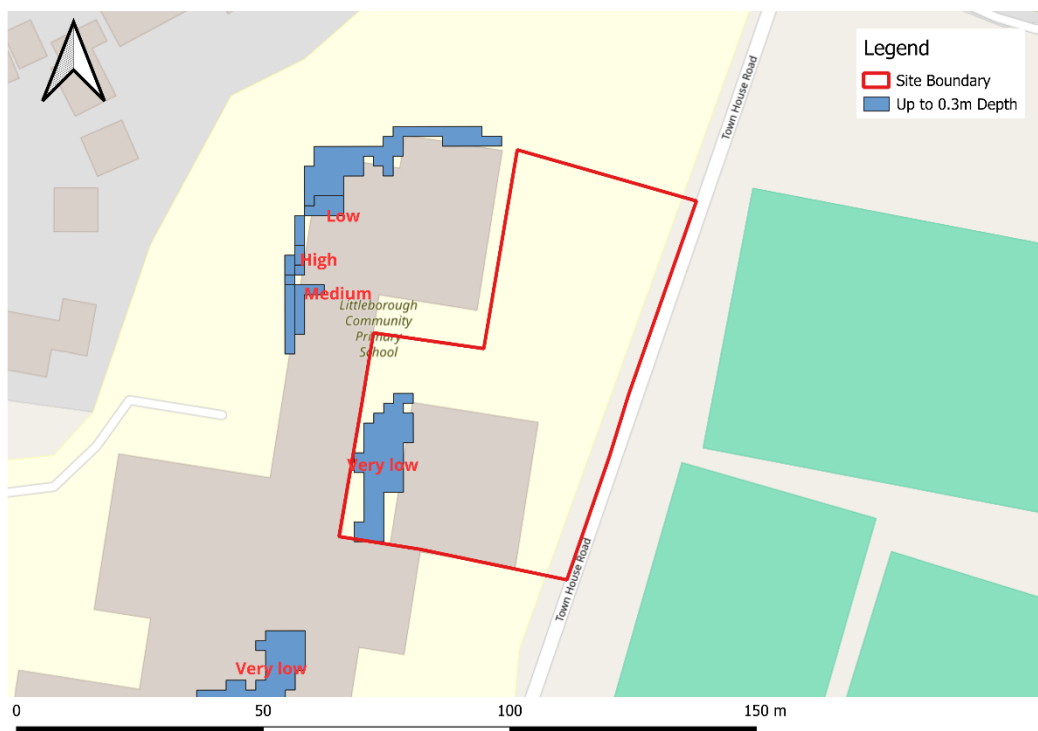


Figure C.12: Likelihood of Surface Water Flooding of Up to 0.3m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

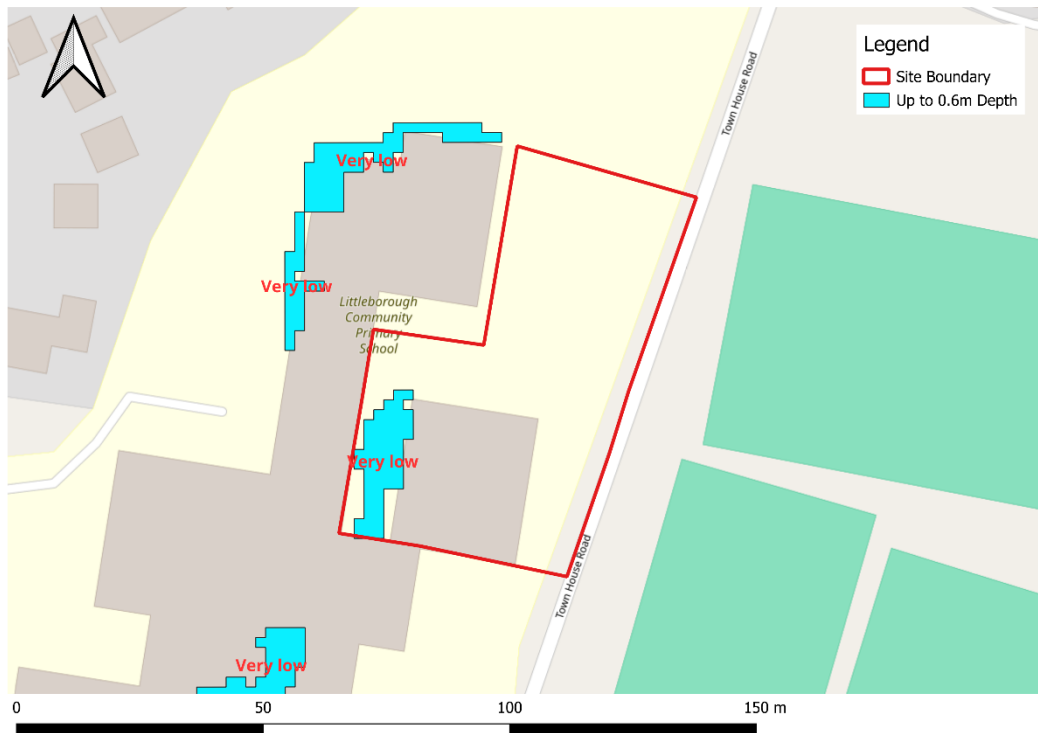


Figure C.13: Likelihood of Surface Water Flooding of Up to 0.6m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

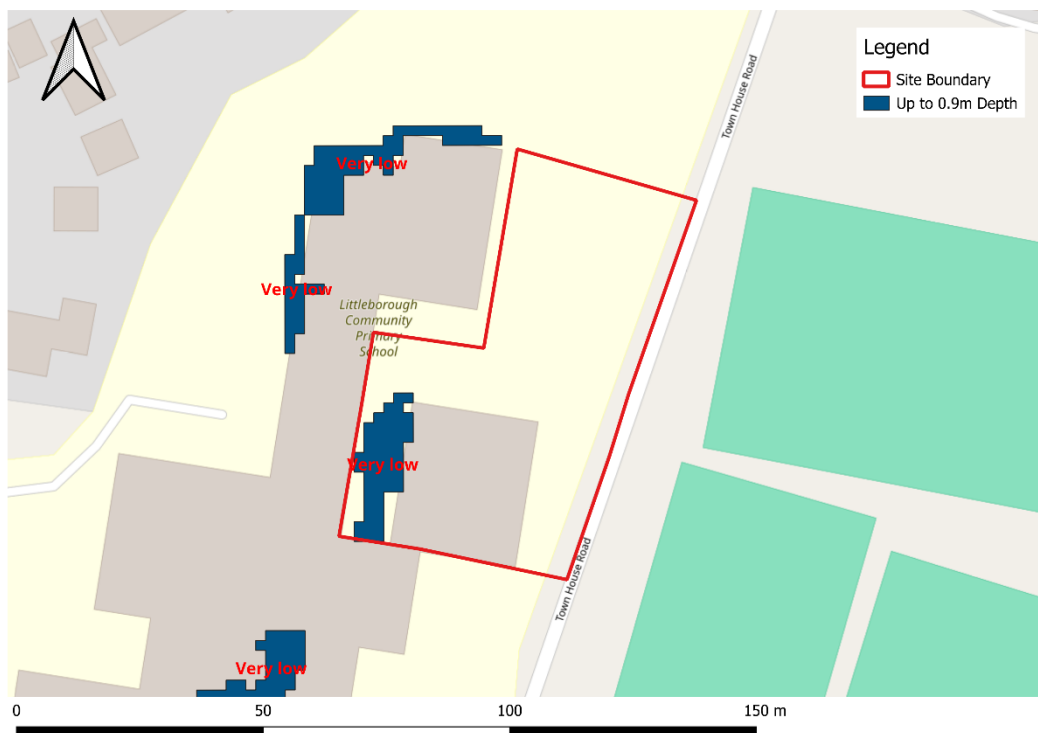


Figure C.14: Likelihood of Surface Water Flooding of Up to 0.9m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

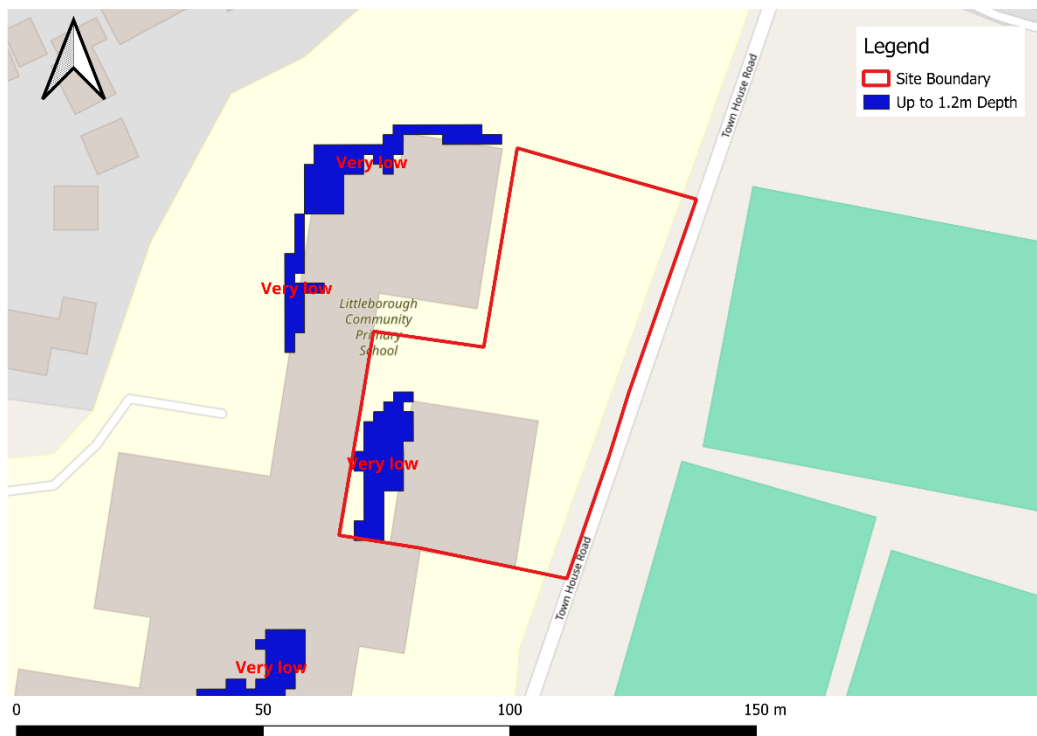


Figure C.15: Likelihood of Surface Water Flooding of Up to 1.2m Depth (No Climate Change)
 (Source: QGIS Layer from the EA)

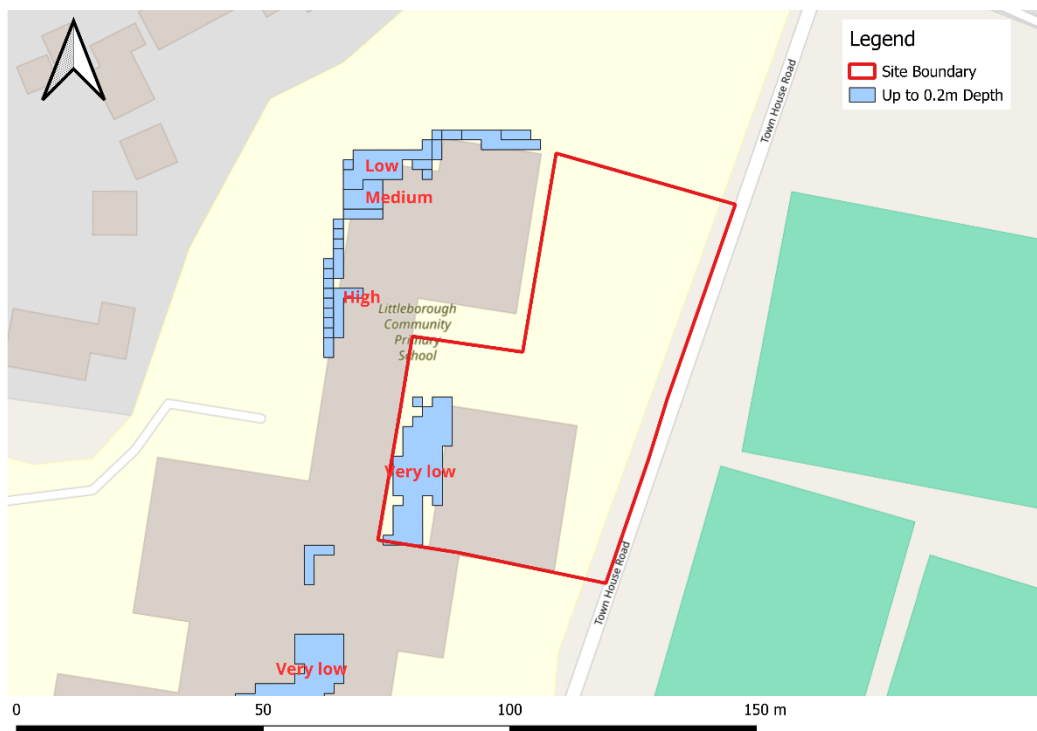


Figure C.16: Likelihood of Surface Water Flooding of Up to 0.2m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

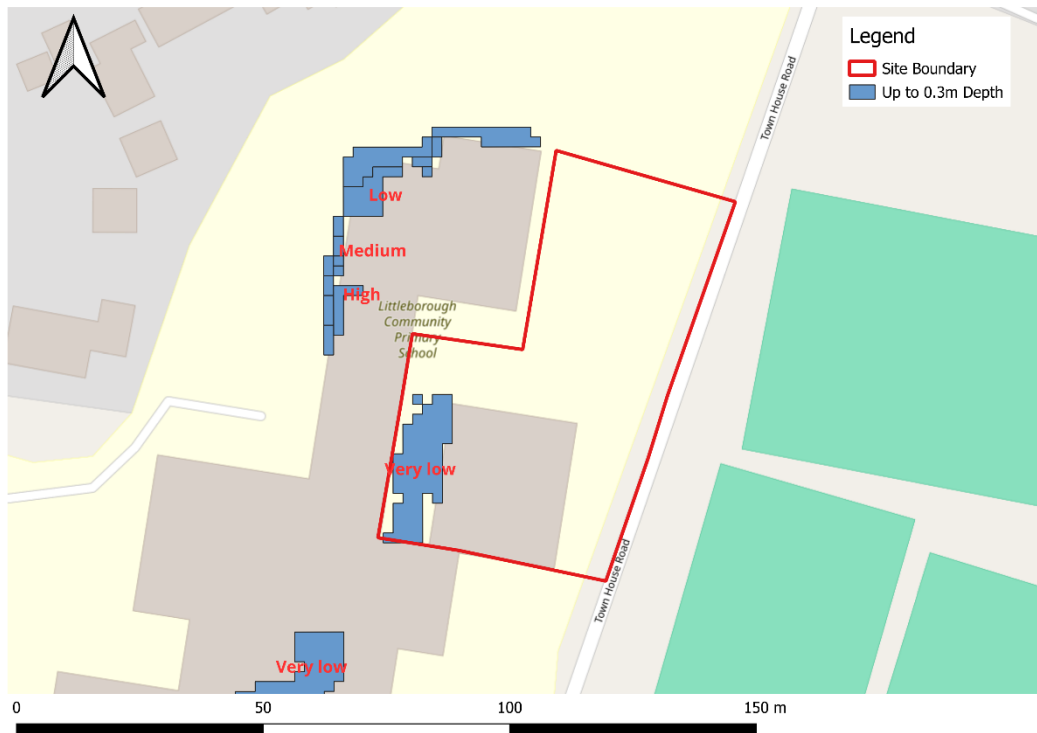


Figure C.17: Likelihood of Surface Water Flooding of Up to 0.3m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

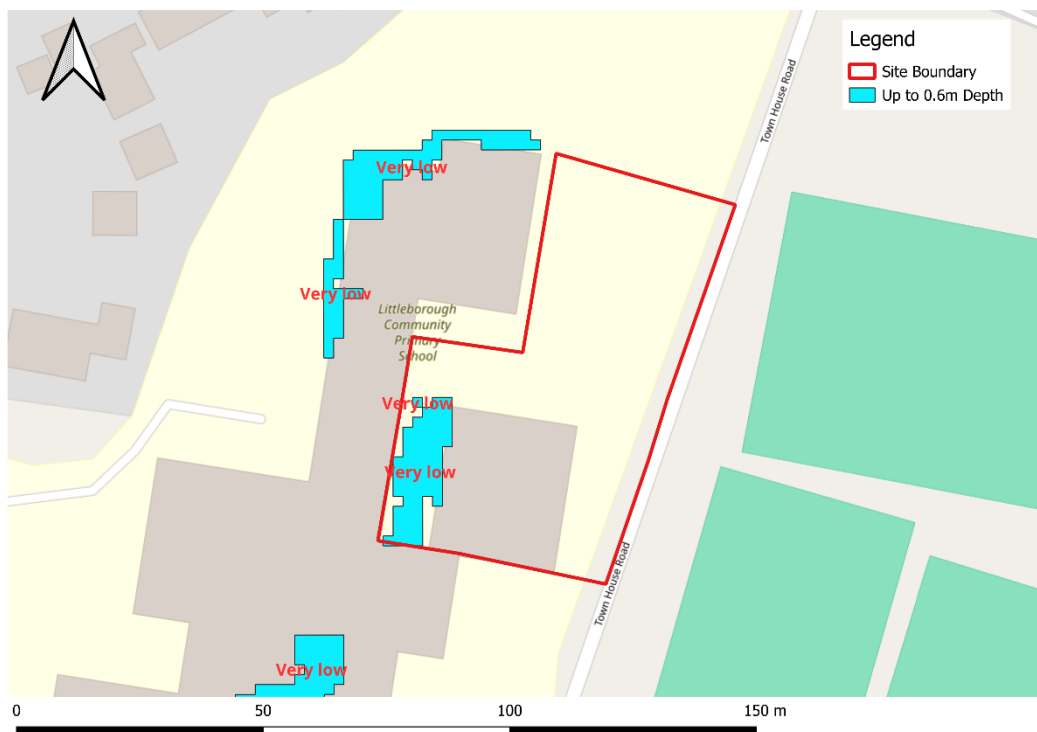


Figure C.18: Likelihood of Surface Water Flooding of Up to 0.6m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

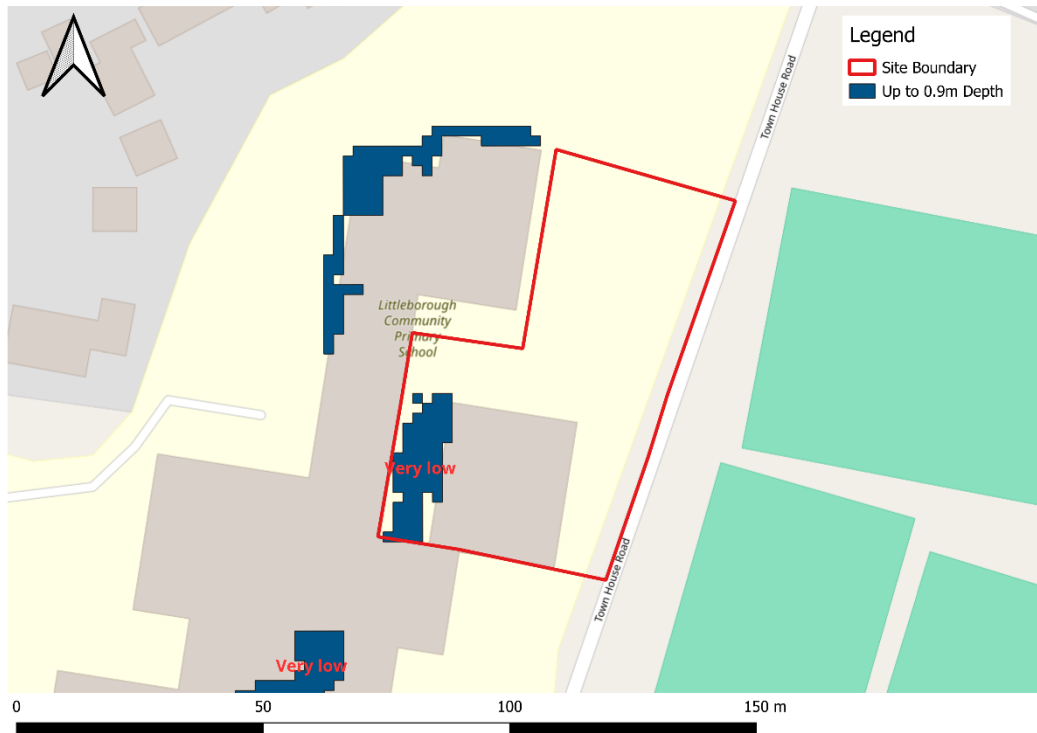


Figure C.19: Likelihood of Surface Water Flooding of Up to 0.9m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)

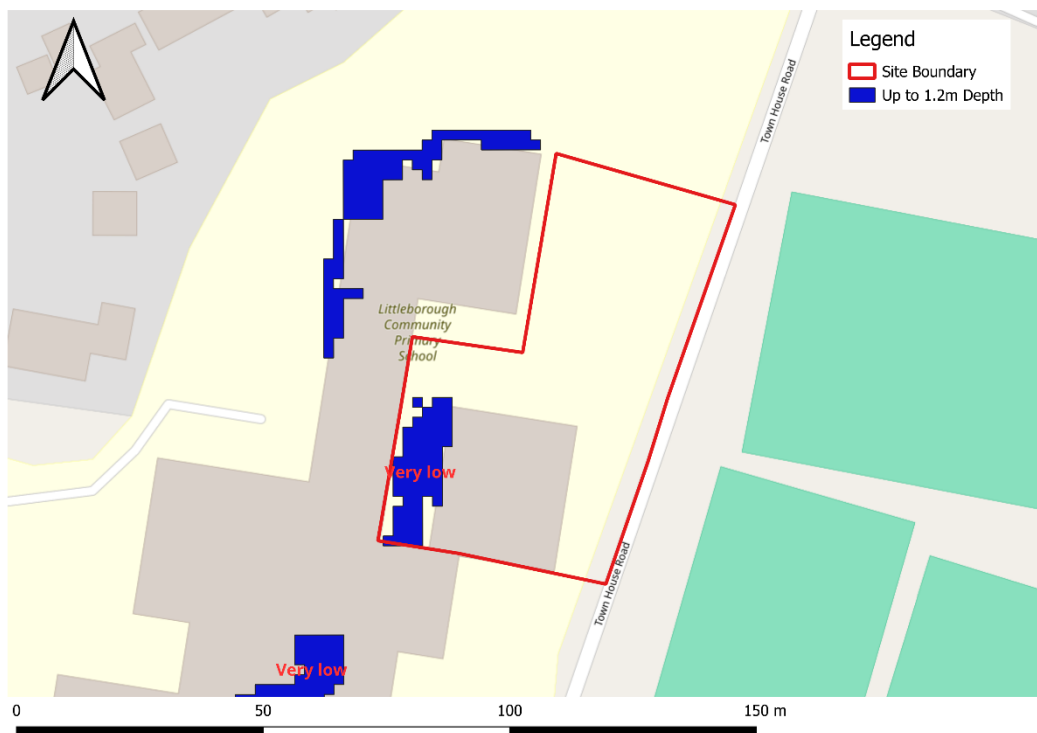


Figure C.20: Likelihood of Surface Water Flooding of Up to 1.2m Depth (With Climate Change)
 (Source: QGIS Layer from the EA)