

TOPPING ENGINEERS

CONSULTING CIVIL & STRUCTURAL ENGINEERS

FLOOD RISK ASSESSMENT

LOCATION:

Jewsons
St Andrews Road
Huddersfield
HD1 6PT

CLIENT:

Stark Building Materials Ltd

DOCUMENT REF:

24399-FRA-001

REVISION/DATE:
December 2024

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Revision	Description	Date	Author	Checked
	First Issue	Dec 2024	P Beeley	O Gill

1.0 INTRODUCTION

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of Stark Building Services Ltd in respect of a planning application for the part demolition and extension of an existing building together with an external canopy at St Andrews Road, Huddersfield, HD1 6PT

Site Name	Jewsons, Huddersfield
Location	St Andrews Road, Huddersfield HD1 6PT
NGR (approx.)	415109, 417650
Application Site Area (ha)	1.13 Ha
Development Type	Commercial/Retail
NPPF Vulnerability	Less Vulnerable
EA Flood Zone	Flood Zone 2
EA Office	Yorkshire
Local Planning Authority	Kirklees Council

Table 1.1 - Site Summary

1.1 SOURCES OF DATA

The report is based on the following information:

i. Architect's drawings by RGP Architects (Appendix A)
ii. Topographical Survey (Appendix B)
iii. Environment Agency Data (Appendix C)
iv. Calder Catchment SFRA 2016 Vol I and II

1.2 EXISTING SITE

The site is located to the northwest of Huddersfield off St Andrews Road.

The application site is bounded to the north by terraced properties, to the west by St Andrews Road, with vehicle access to the site and to the south by Thistle Street.
Thistle Street gives access to a sports club located to the east of the site.

The site is currently occupied by Jewsons a supplier of building materials to the trade.
There are two existing buildings on the site. The main warehouse and sales area, located to the west of the site and an enclosed storage area to the east of the site.

The main yard area is used to store bulk materials that are not affected be weather.

The site is predominantly formed from impermeable surfaces, with just small areas of soft landscaping along the boundaries.

The site can be accessed off both St Andrews Road and Thistle Street.
The site is generally flat with a gradual fall in northerly direction, the levels range from 60.57m AOD down to 59.58m AOD.
The adjacent highways to the west and south are elevated above the site.

Hebble Beck runs as a culverted watercourse below Thistle Street approx. 50m to the south of the site. Hebble Beck is a tributary to the River Colne (West Yorkshire) which is a main river located approx. 90m from the site boundary to the east of the site.

The Huddersfield Broad Canal is located approx. 230m from the western boundary of the site.



Figure 1.1 - Site Aerial View

1.3 PROPOSED DEVELOPMENT

The proposed development involves the demolition of a single storey entrance, part of the main building at the southern end and the timber storage building to the east of the site.

A new extension is proposed on the southern elevation and the existing building internal layout will be reconfigured.

A new canopy structure will be created in the external yard area.

For operational reasons the floor level of the extension needs to match the floor level of the existing building.

The extension and canopy are being formed on areas that are currently surfaced and drained hardstanding areas.

See Architects Plans Appendix A

1.4 FLOOD RISK PLANNING POLICY

National Planning Policy Framework

The NPPF sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance is also available online.

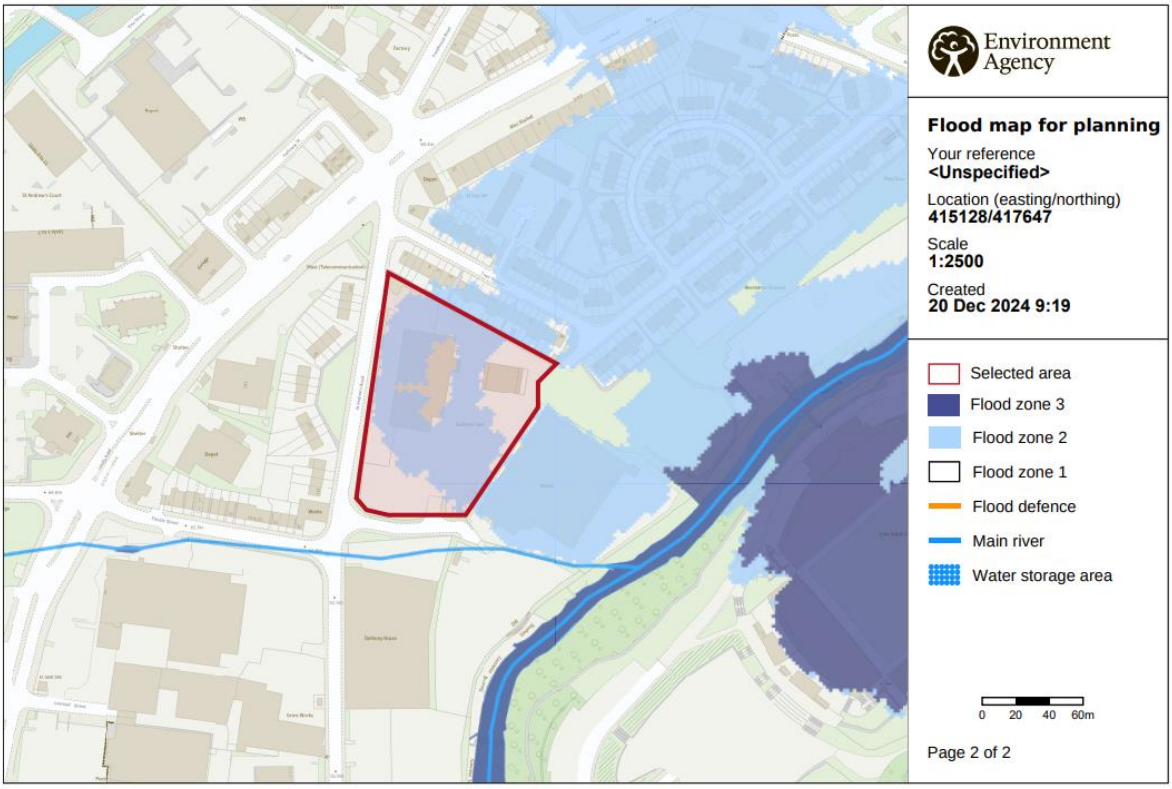
The Planning Practice Guidance sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

The Planning Practice Guidance also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

This Flood Risk Assessment is written in accordance with the NPPF and the Planning Practice Guidance.

Flood Zones

The Flood Zone Map for Planning has been prepared by the Environment Agency. This identifies areas potentially at risk of flooding from fluvial or tidal sources. An extract from the mapping is included as Figure 1.2.



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Figure 1.2 - Environment Agency Flood Zone Mapping

The site is shown to be located partially in Flood Zone 2 (medium Probability) and partially in flood zone 1 (low probability) therefore the site is considered to be at a medium risk of

flooding. Flood Zone 2 is defined as land assessed as having between 0.1% and 1.0% annual probability of flooding from fluvial sources in any one year and between 0.1% 0.5% probability of flooding from the sea.

There are no flood defences on the River Colne in this location.
The River Colne is not susceptible to tidal influences.

Table 2 of the Planning Practice Guidance classifies land use. Commercial use is considered to be Less Vulnerable to the potential impacts of flooding.

Table 3 of the Planning Practice Guidance identifies that any Less vulnerable usage is acceptable in flood zone 2 without the need for an exception test.

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

1.5 OTHER RELEVANT POLICY AND GUIDANCE

Strategic Flood Risk Assessment

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

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

2.0 POTENTIAL SOURCES OF FLOOD RISK

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

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial		X			The site is partially located in flood zone 2
Tidal			X		The River Colne is not affected by tidal influences.
Canals			X		A canal exists 230m away.
Groundwater			X		Ground conditions are not conducive to fluctuating groundwater levels.
Reservoirs and waterbodies			X		The site is not shown to be at risk of Reservoir flooding
Sewers			X		Combined Sewers exist running through the site and highway drainage in the surrounding roads
Pluvial runoff		X			The site is shown to be at risk of surface water flooding
Effect of Development on Wider Catchment			X		The surfaced and drained catchment area will not be increasing.

Table 2.1 - Pre-Mitigation Sources of Flood Risk

2.1 FLUVIAL FLOOD RISK

As previously stated, the site is located partially in flood zone 2. Product 4 data has been obtained from the Environment Agency (see appendix C) A topographical survey has also been commissioned (see appendix B).

Various hydraulic modelling has been carried out on the River Colne and surrounding watercourses.

2011 Huddersfield Study – Allison Dike and Blackhouse Dike
2011 Huddersfield Study – Grimescar Beck/Clayton Dike
2019 Colne Model.

Various scenarios have been assessed, including defended, undefended and Climate Change.

The nearest modelled node points to the development on the River Colne Model is node 6.

The modelled flood levels for this node are as follows:

1% AEP 59.13m AOD.
0.1% AEP 59.98m AOD.
1% AEP + 20% climate change 59.67m AOD
1% AEP + 30% climate change 59.79m AOD
1% AEP + 50% climate change 59.96m AOD
0.1% AEP + 20% climate change 60.24m AOD

The nearest modelled node points to the development on the Grimescar Model is node 7.

The modelled flood levels for this node are as follows:

1% AEP 59.28m AOD.
0.1% AEP 59.28m AOD.
1% AEP + 20% climate change 59.28m AOD

The modelled 2D grid of the site based on the River Colne modelling shows the following:

0.1% AEP 59.83 to 59.87m AOD.
1.0% AEP + 50% climate change 59.81 to 59.85m AOD.
0.1% AEP + 20% climate change 60.08m AOD.

The product 4 data show the site wasn't subject to historic flooding in the February 2022 and February 2020 storm events.

The existing warehouse floor level is 59.880. For operational requirements the floor level of the extension needs to be at the same level.

The floor level of the existing and proposed extension will therefore be 0.75m above the 1% AEP (1in100 year) flood level.

In the 0.1% AEP (1in1000) event it will potentially be flooded to a depth of 100mm

In the 1.0% + Climate change events the floor level will be as follows:
20% climate change event 0.221m above flood level
30% climate change 0.090m above flood level
50% climate change flooded to a depth of 0.08m (80mm)

If the development proposals were for a new purpose built warehouse, we would recommend the floor levels were lifted so they were above the 1in100 + 50% climate change flood level, however as it`s an extension of an existing building then there are limited options available to remove the risk.

Flood resilient construction methods should be used for the new extension, to ensure minimal damage occurs should flood waters enter the building.

2.2 GROUNDWATER FLOOD RISK

Site investigations have been carried out on the site, which show the ground conditions are fill material over sandy clays over sandstone/shale bedrock.
Water strikes ranged from 2.6om to 4.20m below ground level.

These ground conditions are not conducive to fluctuating ground water levels.

We therefore consider the risk of groundwater flooding affecting the development is low.

2.3 FLOOD RISK FROM RESERVOIRS & LARGE WATERBODIES

Reservoir failure flood risk mapping has been prepared by the Environment Agency, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst-case scenario and is only intended as a guide. An extract from the mapping is included as Figure 2.1.

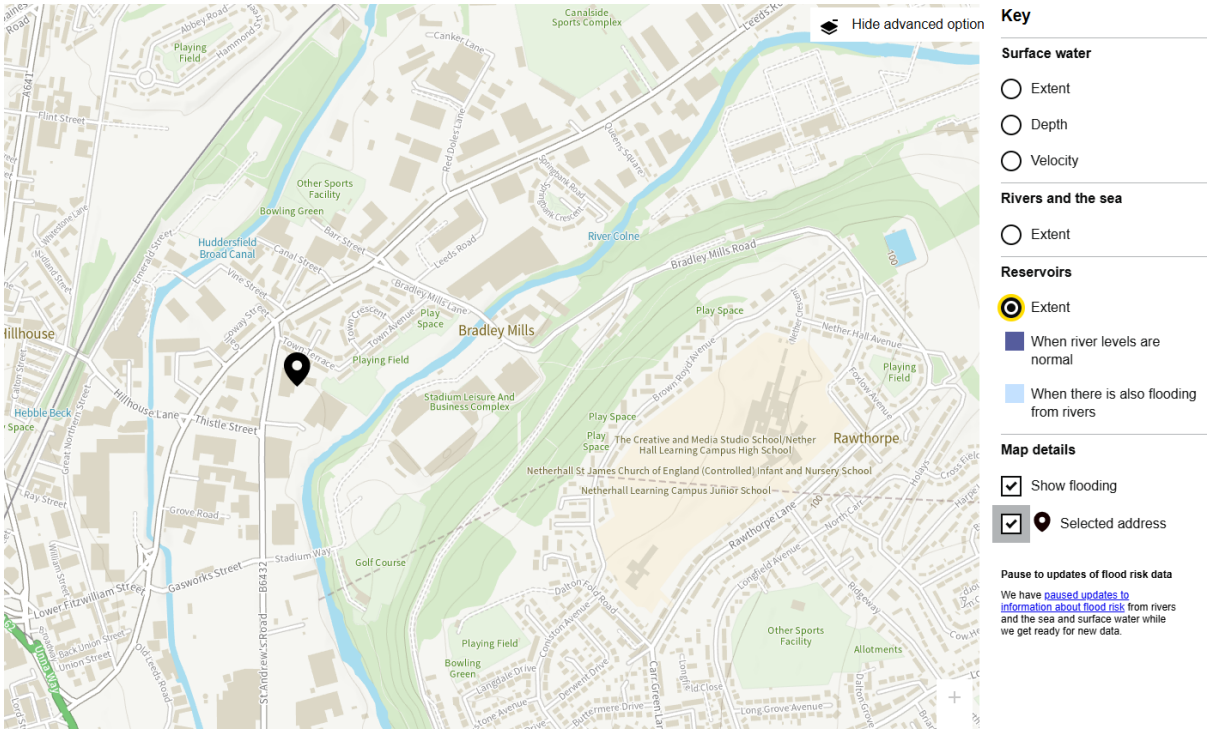


Figure 2.1 - Environment Agency Reservoir Failure Flood Risk Map

The maps demonstrate the site is located outside any reservoir flood area.

We therefore consider that reservoir flooding is not a risk to the development.

2.4 FLOOD RISK FROM SEWERS

Yorkshire Water have a 1650mm diameter brick combined sewer, together with 300mm and 150mm sewers crossing the site.

Although we are not aware of any historic flooding of these sewers, there is a risk of flooding if these sewers surcharge or a blockage occurs.

The sewers run adjacent to a low spot on the site where the levels are typically 59.550m AOD to 59.580m AOD, Any flood water emerging from the manhole covers of the sewer would drain to this lower lying area which is 0.33m below the finished floor level.

Highway drainage exists in the carriageways around the site. The carriageways are raised above the site level, Full height kerbs should contain any flooding from these drains within the highway. Should any flood water enter the site, the run off would be intercepted by the existing site drainage and directed to the combined sewer before it impacts on the property.

2.5 PLUVIAL FLOOD RISK

Risk of flooding from surface water mapping has been prepared by the Environment Agency, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. An extract from the mapping is included as Figure 2.2

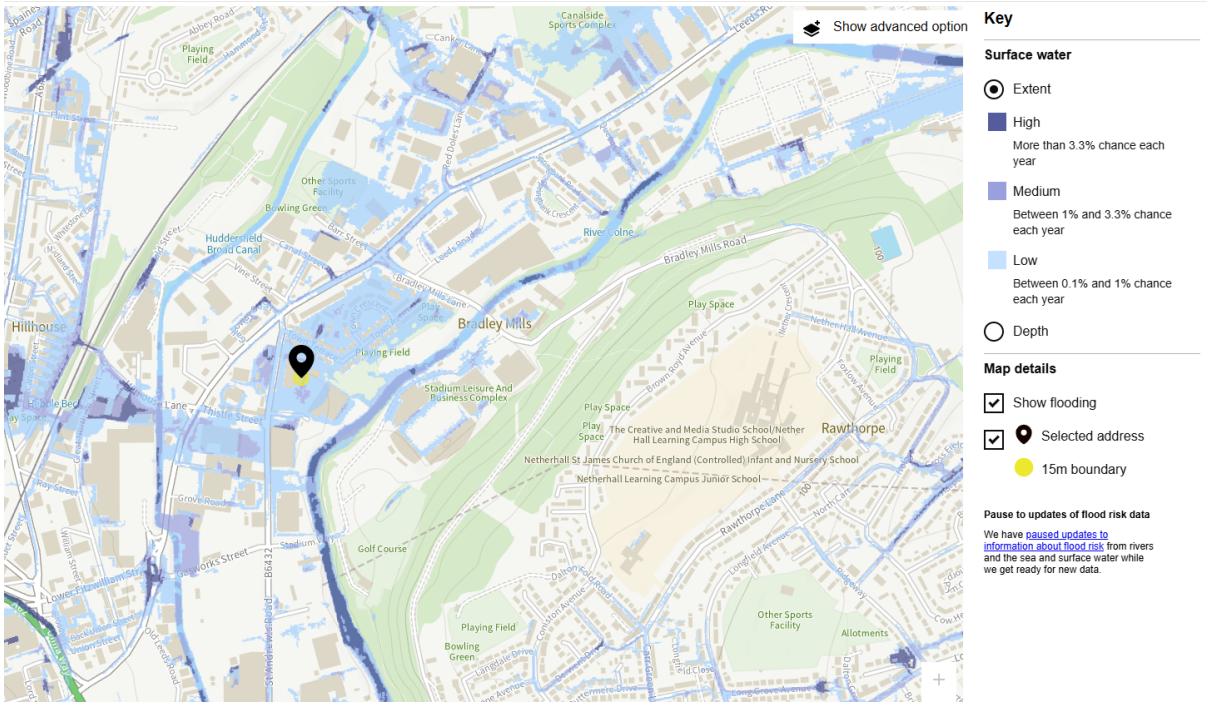


Figure 2.2 - Risk of Flooding from Surface Water Mapping

The mapping produced by the Environment Agency shows that there is a low risk 0.1% to 1.0% of surface water flooding water affecting the site. The water is shown to pond in the hardstanding around the existing building. The hardstanding area is typically 150mm lower than the existing floor slab level.

The new extension will need to replicate this and ensure the surrounding ground levels are set lower the floor slab. Adequate drainage needs to be installed to ensure any ponding water has a means of draining to the sewers before reaching floor slab level.

Flood resilient construction methods should used for the new extension, to ensure minimal damage occurs should flood waters enter the building.

2.6 EFFECT OF DEVELOPMENT ON WIDER CATCHMENT

2.6.1 Development Drainage

The site is brownfield and predominantly impermeable, with just small areas of soft landscaping along the boundaries.

Part of the warehouse building is to be demolished and replaced with a larger extension. This will be in an area that is currently hardstanding area. An existing timber store building will be demolished and a new canopy installed to cover part of the existing hardstanding area.

There will be no increase in impermeable area, however as part of the existing drainage network needs to be altered to accommodate the proposed works, then the opportunity should be taken to reduce the peak surface water flows from this part of the site.

This could be achieved by attenuation of the flows and incorporating an underground storage tank.

If these measures are incorporated the volume of surface water run would remain the same however the peak flows would be reduced which would have a beneficial impact on the downstream infrastructure and reduce the risk of any downstream flooding.

See separate drainage strategy drawing.

3.0 FLOOD RISK MITIGATION

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

3.1 SITE ARRANGEMENTS

3.1.1 Sequential Testing

Sequential testing ensures new development is steered to areas with the lowest probability of flooding.

Given this is a refurbishment and extension to an existing building that is owned by Jewsons, then we consider sequential testing is not required.

3.1.2 Mitigation

Part of the site is shown to be in flood zone 2. A review of the modelled flood water levels and the topographical survey information show the existing floor level is 90mm above the 1in100 (1.0%) + 30% climate change flood water level.

There is a low risk 0.1% to 1.0% of surface water flooding affecting the site.

Its not practical to raise the floor level of the proposed extension above the existing floor level.

Mitigation measures therefore need to be incorporated within the design to ensure any damage from flood water is minimised.
Flood resilient measures should be incorporated into the new extension. These measures include:

- Utilising ground bearing concrete ground floor with no sub-floor voids.
- All electrical supplies to drop down from above with socket outlets a min 600mm above finished floor level.
- Flood resilient materials should be used on the ground floor where its practical.
- Non return valves to be fitted to the foul drainage to prevent flood water ingress from the drains.

The site is located within an Environment Agency Flood Alert area. The owner/occupiers should sign up to this service.

In the event of an extreme flood warning the following Flood Management Plan should be put in place:

- Advise all occupiers that a flood alert has been issued and they should prepare to leave the property and the flood zone.
- If it's safe to evacuate the property, then leave the area by car along the adjacent St Andrews Road towards Huddersfield which is in flood zone 1 and a place of safety.
- If flood waters have reached the property or the surrounding roads and it is not safe to evacuate, then take refuge within the building and contact the local authority/emergency services.
- Maintain contact with the Environment Agency and Local Authority.

4.0 CONCLUSIONS AND RECOMMENDATIONS

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

This report demonstrates that the proposed development is not at significant flood risk, and mitigation measures have been recommended to address any residual risks that may remain.

In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area.

5.0 APPENDICES

Appendix A – Architect Drawings

Appendix B – Topographical Survey

Appendix C – Environment Agency Data

Appendix A – Architects Drawings

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0m 4m 8m 12m 16m
SCALE

N

Existing ground floor and GIA subject to building survey

Ownership boundary subject to title plan

Extent of the foul water sewer as per Ardmorepoints survey drawing AP3499/GPR/01

Extent of the demolition of the existing building

Site vehicle access

Staff/ customer carpark
52 no

Jewson
GIA 1,681.5 sqm
18,100 sqft

Enclosed storage area

Pedestrian route

External storage area

Palisade fence

Site vehicle access

ST ANDREW'S ROAD

TOWN TERRACE

Thistle Street

SLOW

ONE WAY ONLY

NO EXIT

B 10-11-24 GENERAL UPDATE AS PER COMMENT MS
A 22-11-24 PLANNING ISSUE MS
REV. DATE NOTES INIT.

CLIENT / PROJECT
STARK BUILDING MATERIALS Ltd
JEWSON-HUDDERSFIELD-213
WEST YORKSHIRE, HD1 6PT

DRAWING TITLE
EXISTING SITE PLAN

STATUS
PLANNING

DATE	DRAWN	SCALE @ A1 / A3
13-11-24	MS	1:250

PROJECT NUMBER	UNIT / BLOCK	CI / SFB CODE	TYPE & NUMBER	REVISION LETTER
11731		L	001	B

Site Location Plans L | GA Plans P | Elevations E
Sections S | Details D | Prefix, Colour C

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11/12/2024 12:46:46 P:\NORA\11600\11703-11799\11731\Sheets\11731-L001-Existing site plan.dgn mcgrigan.sarina Huddersfield.Jewsons

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0m 4m 8m 12m 16m
SCALE

N

Proposed ground floor and GIA subject to building survey

Ownership boundary subject to title plan

Extent of the foul water sewer as per Ardmorepoints survey drawing AP3499/GPR/01

Extent of the proposed extension

Site vehicle access

Staff/ customer carpark 53 no (new parking spaces 2x5 m) including 5 no EV charging spaces

Additional bollards to the customer entrance

New accessible parking spaces

Extended Jewson
GIA 2,270 sqm
24,434 sqft

Proposed extension
GEA 864.5 sqm
9,305 sqft

Extent of the existing building demolished marked up in red

New van parking spaces

New canopy over cantilevered racking
GEA: 587 sqm

New bollards along the van parking spaces and roller shutter doors

Extent of the existing building demolished marked up in red

External storage area

New whitelining to the pedestrian route

2.4m high Galvanised palisade fence and gate to the new external compound

Existing gates to be relocated

Site vehicle access

ST ANDREW'S ROAD

TOWN TERRACE

ONE WAY ONLY

NO EXIT

SLOW

HGV ONLY

LOADING / UNLOADING

REV.	DATE	NOTES	INIT.
D	10-12-24	GENERAL UPDATE AS PER COMMENT	MS
C	29-11-24	GENERAL UPDATE AS PER LATEST LAYOUT	MS
B	19-11-24	GENERAL UPDATE AS PER COMMENTS	MS
A	14-11-24	PROPOSED EXTENSION AREA ADDED OWNERSHIP BOUNDARY UPDATED AS PER TITLE PLAN	MS

CLIENT / PROJECT

STARK BUILDING MATERIALS Ltd
JEWSON-HUDDERSFIELD-213
WEST YORKSHIRE, HD1 6PT

DRAWING TITLE

PROPOSED SITE PLAN

STATUS

PLANNING

DATE	DRAWN	SCALE @ A1 / A3
13-11-24	MS	1:250

PROJECT NUMBER	UNIT / BLOCK	CI / SFB CODE	TYPE & NUMBER	REVISION LETTER

DRAWING NO.

11731 L 002 D

Site Location Plans	L	GA Plans	P	Elevations	E
Sections	S	Details	D	Prefix; Colour	C

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Appendix B – Topographical Survey

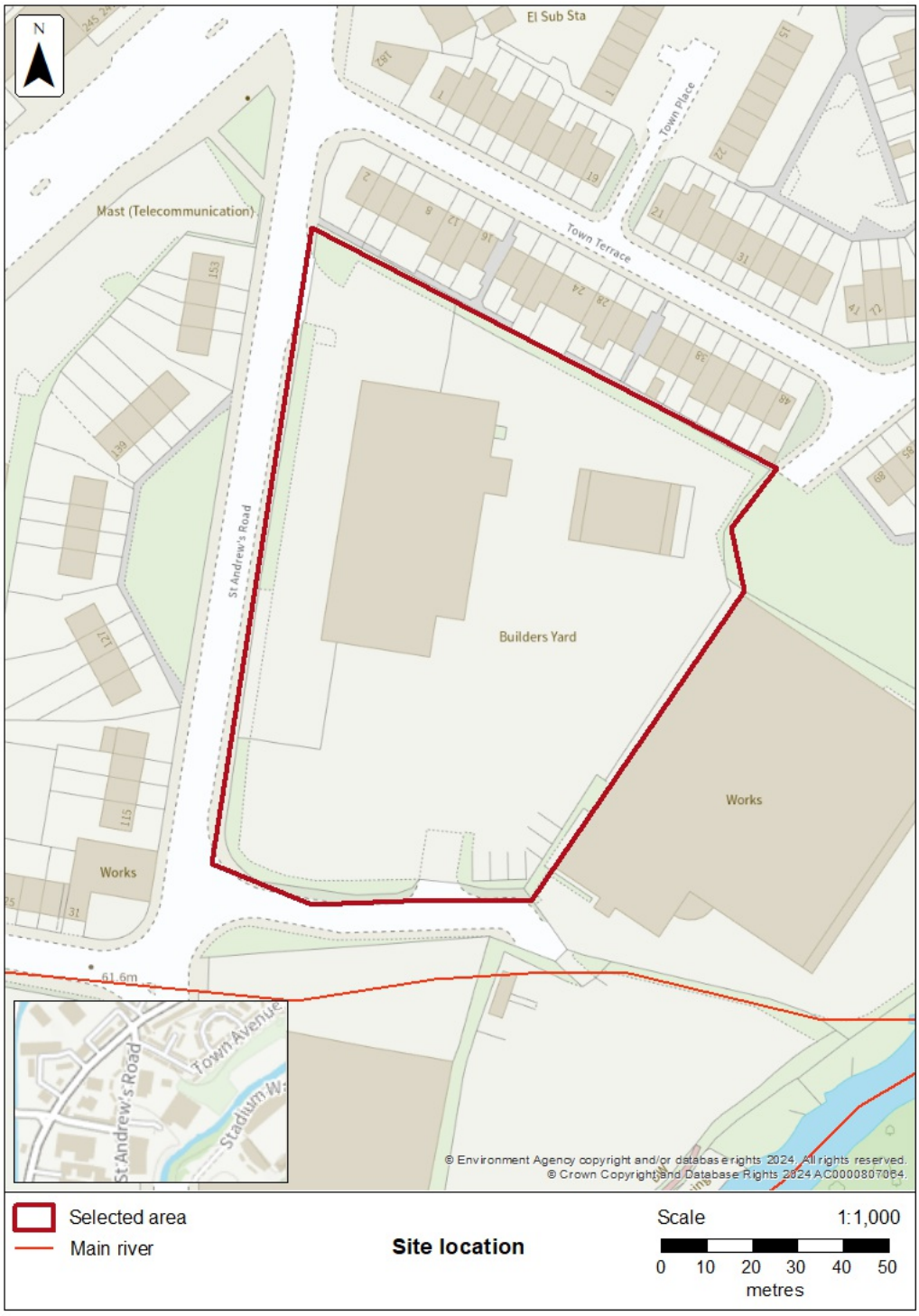

St Andrew's Road
Thistle Street
Existing 150mm Combined Sewer
Existing 1650mm Brick Combined Sewer
Existing 300mm Combined Sewer
Tarmac
Kerb
Gully
Hedge
Bushes
Shrubs
Trees
Slabs
Concrete
Storage Rack
Storage Silos
Store Building
Display Area (Various Surfaces)
Metal Staircase
Ramp
Pump
Cable Kiosk
Oil Tank
Oil Separator
Limit of Adopted Highway
Limit of Ownership
Site 1 ASP1
E = 415287.910
N = 617494.803
Z = 60.550
Site 1 ASP2
E = 415177.975
N = 617459.815
Z = 60.018
Site 1 ASP3
E = 415177.734
N = 617446.905
Z = 61.224
Site 1 ASP4
E = 415110.420
N = 617542.276
Z = 61.013
Site 1 ASP5
E = 415437.720
N = 617437.732
Z = 59.691
Site 1 ASP6
E = 415437.550
N = 617446.555
Z = 59.695
MH CL 59.44
MH CL 59.42 IL=55.79
MH CL 59.44 IL=57.63

Appendix C – Environment Agency Data

Flood risk assessment data

Location of site: 415119 / 417637 (shown as easting and northing coordinates)
Document created on: 15 November 2024
This information was previously known as a product 4.
Customer reference number: WTJGJ6VMD4ET

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 Kirklees District.

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

About the models used

Model name: 2011 Huddersfield Study - Allison Dike and Blackhouse Dike
Scenario(s): No defences exist fluvial, no defences exist climate change fluvial
Date: 31 March 2011

Model name: 2011 Huddersfield Study - Grimescar Beck / Clayton Dike
Scenario(s): No defences exist fluvial, no defences exist climate change fluvial
Date: 31 March 2011

Model name: 2019 Colne Model
Scenario(s): Defended fluvial, defences removed fluvial, defences removed climate change fluvial
Date: 1 August 2019

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

Terminology used

Annual exceedance probability (AEP)

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

Metres above ordnance datum (mAOD)

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

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 2.

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

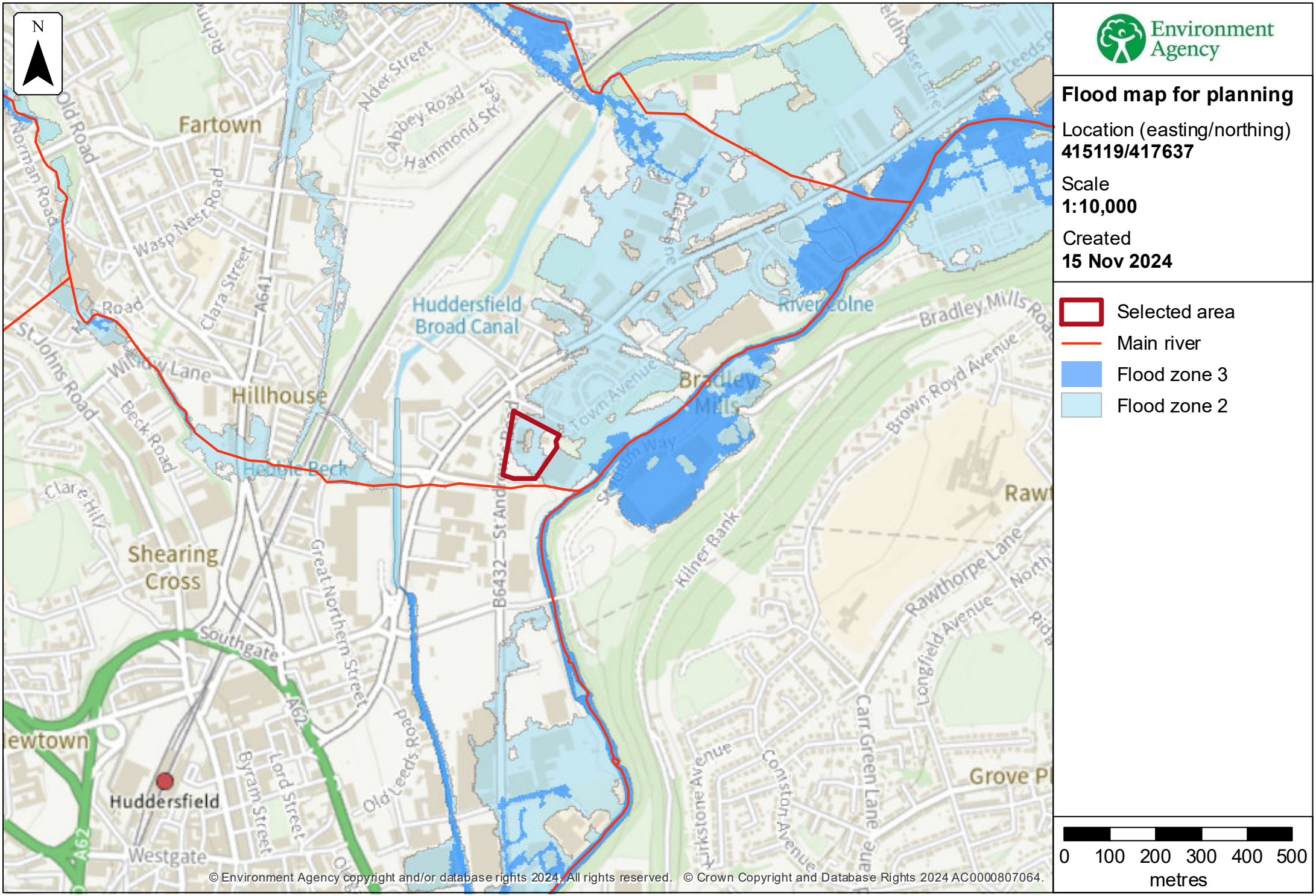
Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- 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.



Environment Agency

Flood map for planning

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

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

0 100 200 300 400 500
metres

Past floods

Past flood events included in this document

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

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

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

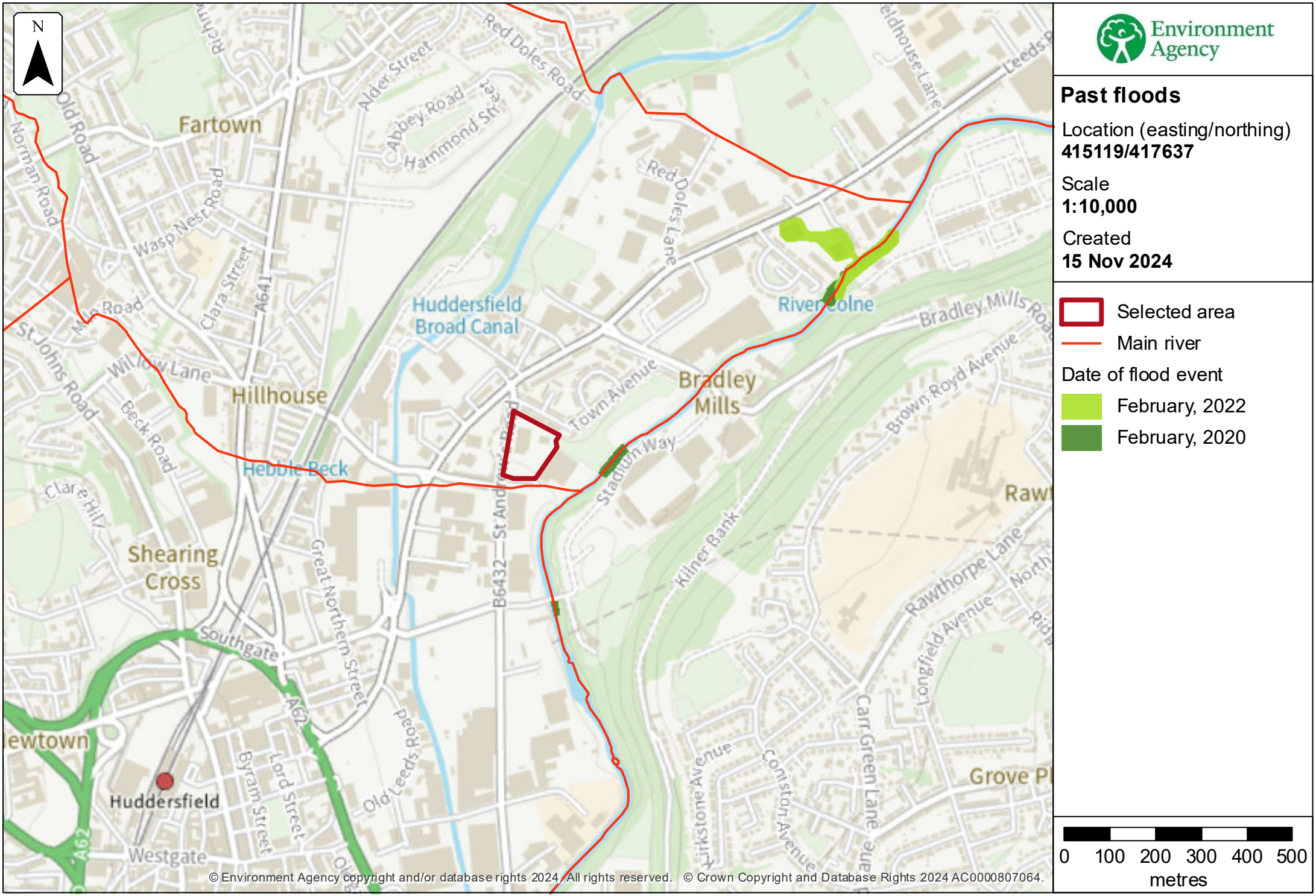
The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

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


N
Fartown
Huddersfield Broad Canal
River Colne
Bradley Mills
Hillhouse
Hebble Beck
Shearing Cross
Huddersfield
Westgate
Southgate
Bradley Mills Road
Stadium Way
Kilner Bank
Rawthorpe Lane
Carr Green Lane
Old Leeds Road
Great Northern Street
B6432
A641
A62
Red Doles Lane
Town Avenue
Brown Royd Avenue
Longfield Avenue
Linkstone Avenue
Coniston Avenue
Grove Pl
Rawt
Environment Agency
Past floods
Location (easting/northing)
415119/417637
Scale
1:10,000
Created
15 Nov 2024
Selected area
Main river
Date of flood event
February, 2022
February, 2020
0 100 200 300 400 500
metres
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Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
20 February 2022	28 March 2022	main river	channel capacity exceeded (no raised defences)	No
15 February 2020	19 March 2020	main river	channel capacity exceeded (no raised defences)	No

Flood defences and attributes

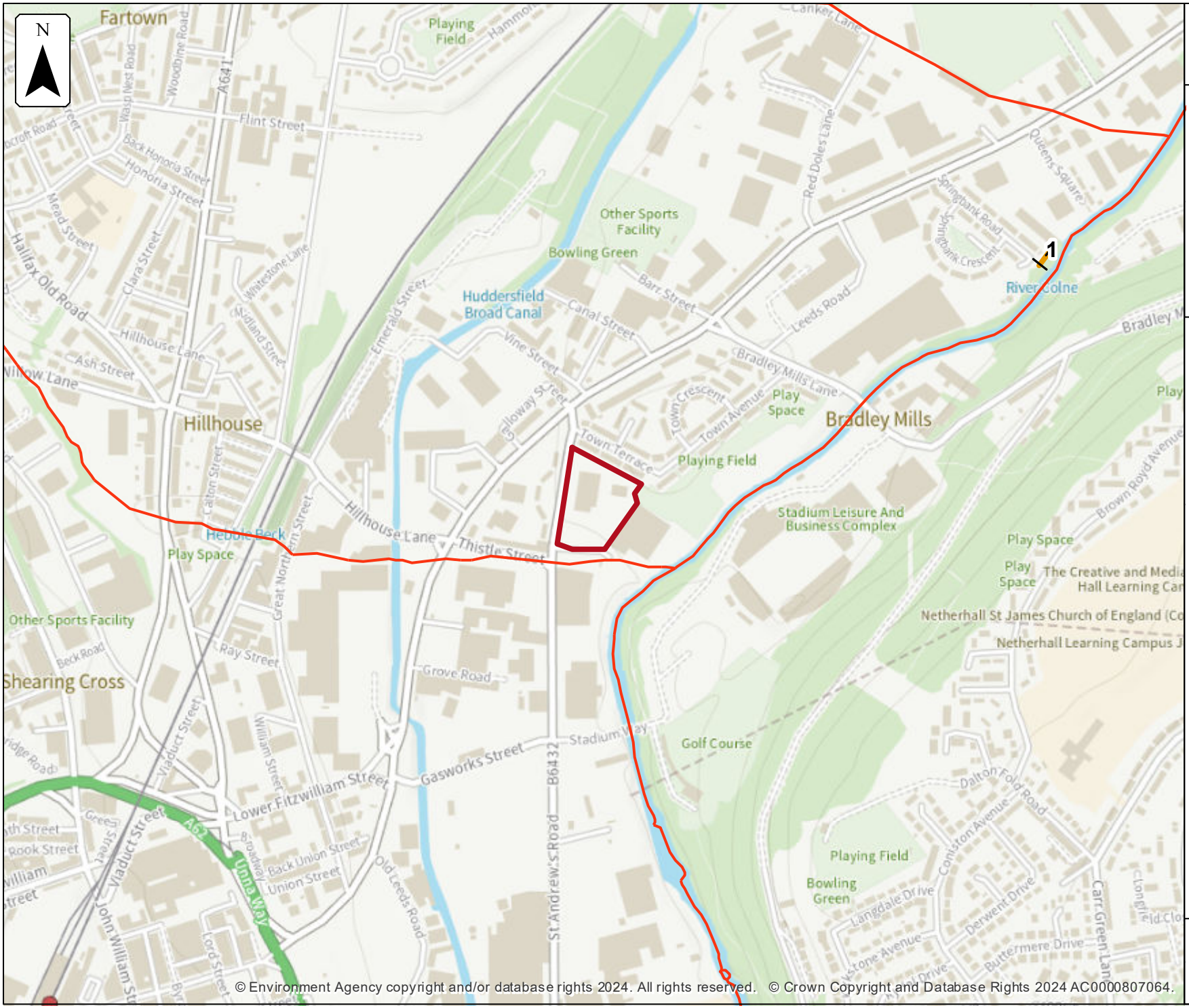
The flood defences map shows the location of the flood defences present.

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

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

Use this information:

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



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Environment Agency

Flood defences

Location (easting/northing)
415119/417637

Scale
1:7,500

Created
15 Nov 2024

- Selected area
- Main river
- Flood defence

0 100 200 300
metres

Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	183943	Wall			56.97	57.34	

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

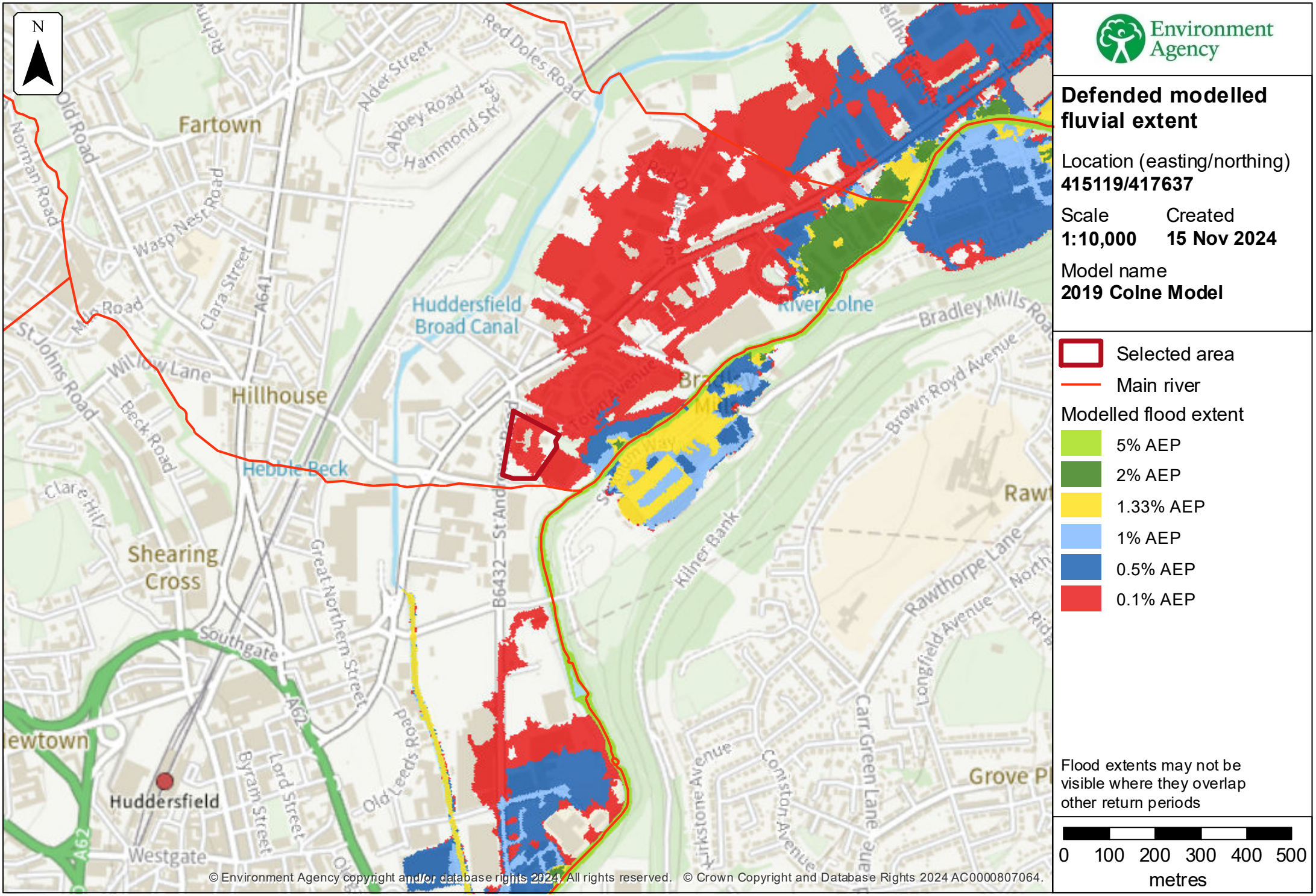
The climate change data included in the models may not include the latest flood risk assessment climate change allowances. Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

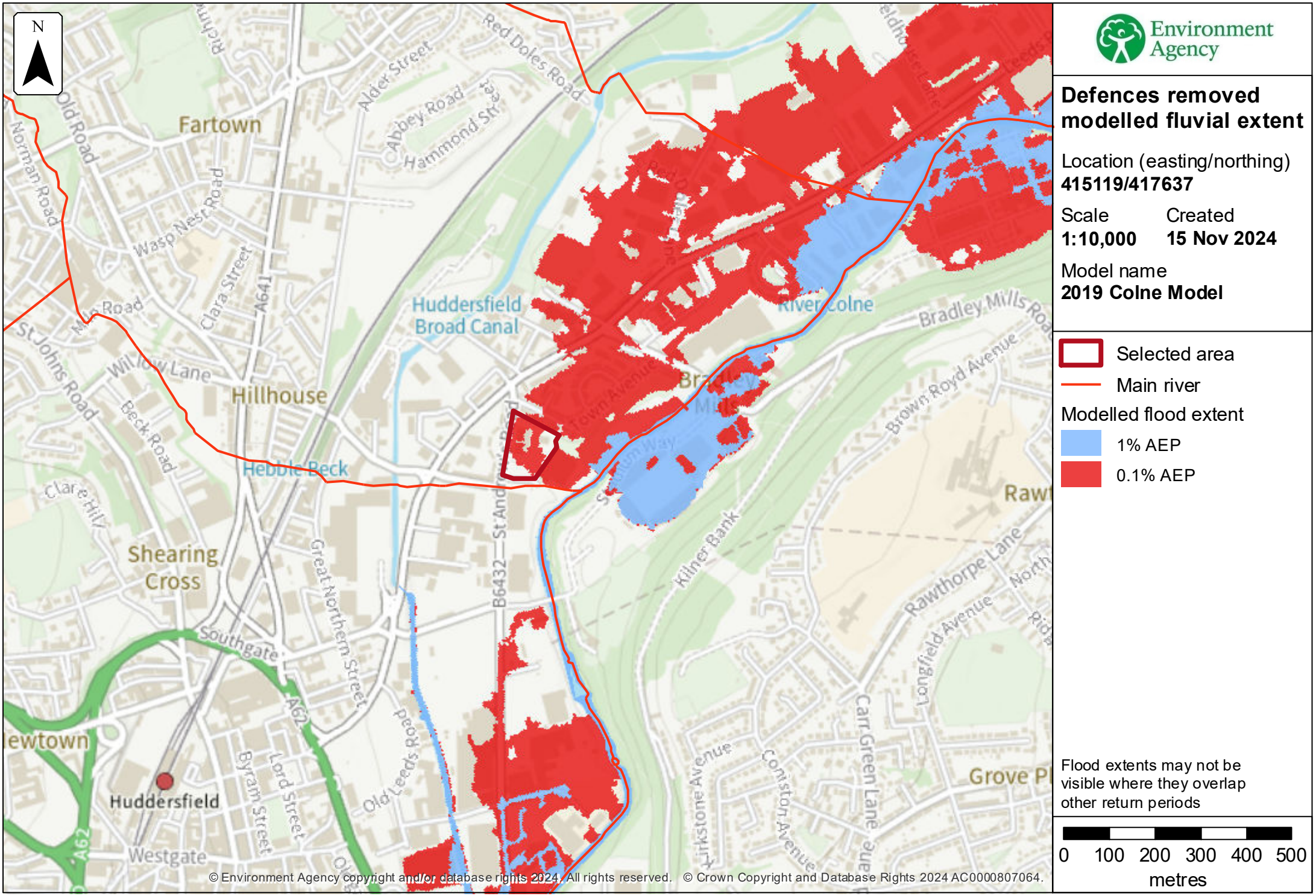
The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

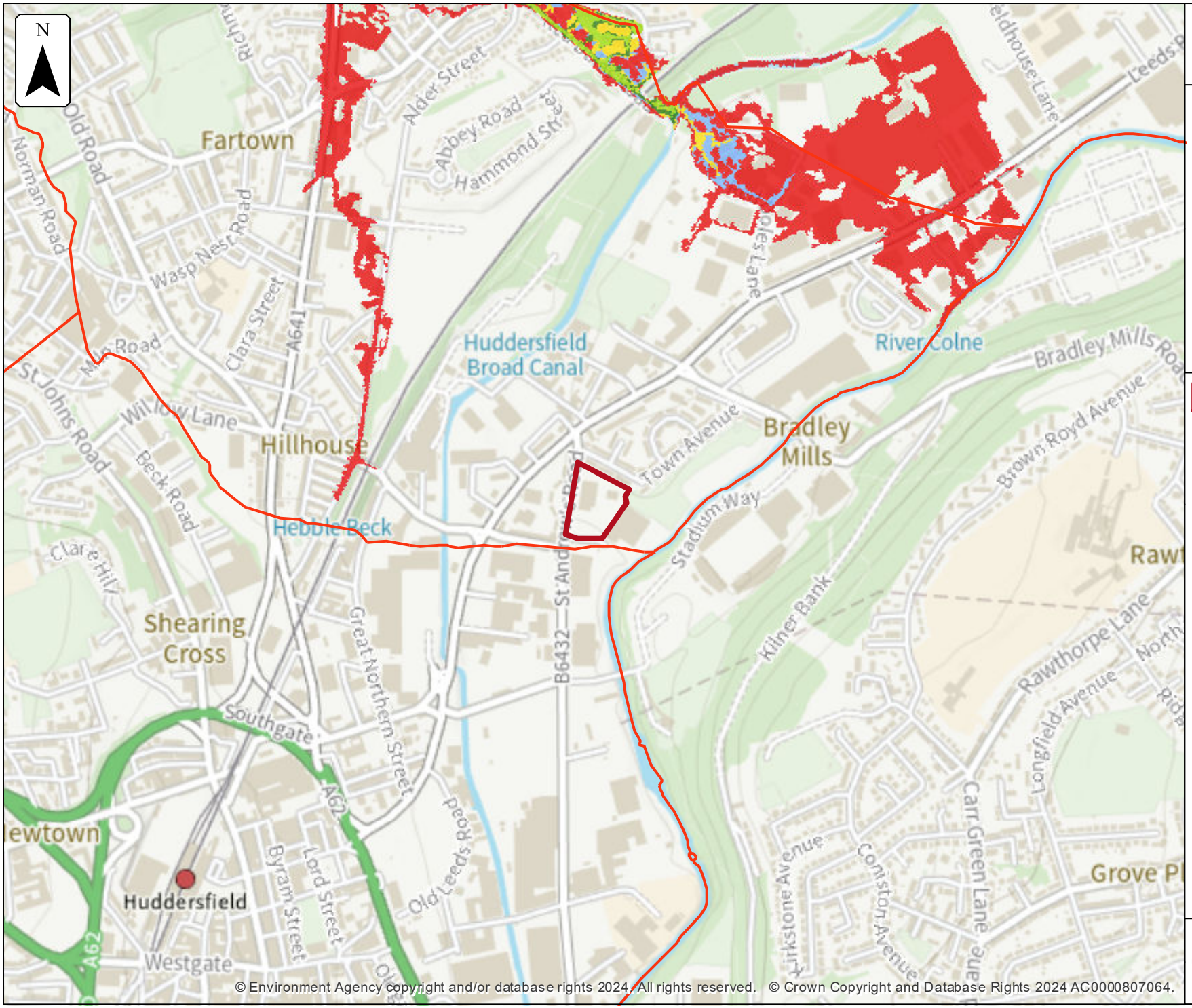
Modelled scenarios

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


N
Fartown
Huddersfield Broad Canal
River Colne
Hillhouse
Hebble Beck
Shearing Cross
Huddersfield
Westgate
Newtown
Bradley Mills Road
Brown Royd Avenue
Rawthorpe Lane
Longfield Avenue
Carr Green Lane
Grove Pl
Kilner Bank
Linkstone Avenue
Coniston Avenue
Old Leeds Road
Great Northern Street
Southgate
Lord Street
Byram Street
Wasp Nest Road
Clara Street
Willow Lane
Beck Road
Clare Hill
St Johns Road
Norman Road
Old Road
Aldet Street
Abbey Road
Hammond Street
Red Doles Road
A641
A62
B6432
Environment Agency
Defended modelled fluvial extent
Location (easting/northing)
415119/417637
Scale
1:10,000
Created
15 Nov 2024
Model name
2019 Colne Model
Selected area
Main river
Modelled flood extent
5% AEP
2% AEP
1.33% AEP
1% AEP
0.5% AEP
0.1% AEP
Flood extents may not be visible where they overlap other return periods
0 100 200 300 400 500
metres
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N
Fartown
Huddersfield Broad Canal
River Colne
Hillhouse
Hebble Beck
Shearing Cross
Huddersfield
Westgate
Southgate
Bradley Mills Road
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Rawthorpe Lane
Longfield Avenue
Carr Green Lane
Coniston Avenue
Kilner Bank
Great Northern Street
Old Leeds Road
Byram Street
Lord Street
Abbey Road
Hammond Street
Red Doles Road
Aldet Street
Old Road
Norman Road
Wasp Nest Road
Clara Street
A641
A62
B6432
St Johns Road
Willow Lane
Beck Road
Clare Hill
Mill Road
Grove Pl
Rawt
Environment Agency
Defences removed modelled fluvial extent
Location (easting/northing)
415119/417637
Scale
1:10,000
Created
15 Nov 2024
Model name
2019 Colne Model
Selected area
Main river
Modelled flood extent
1% AEP
0.1% AEP
Flood extents may not be visible where they overlap other return periods
0 100 200 300 400 500
metres
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Environment Agency

No defences exist modelled fluvial extent

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Allison Dike

Selected area

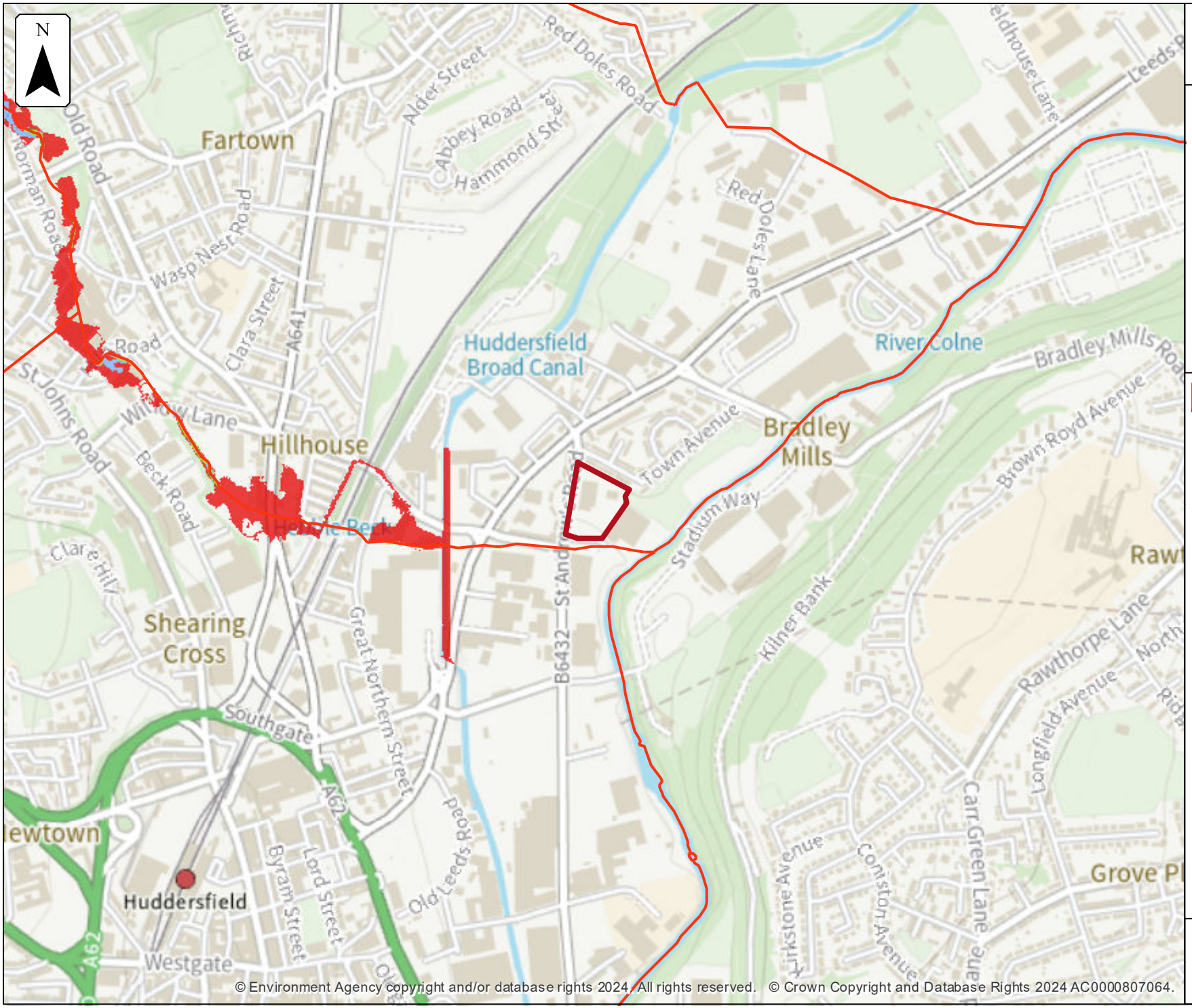
Main river

Modelled flood extent

- 5% AEP
- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.1% AEP

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

0 100 200 300 400 500
metres



Environment Agency

No defences exist modelled fluvial extent

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Grimescar

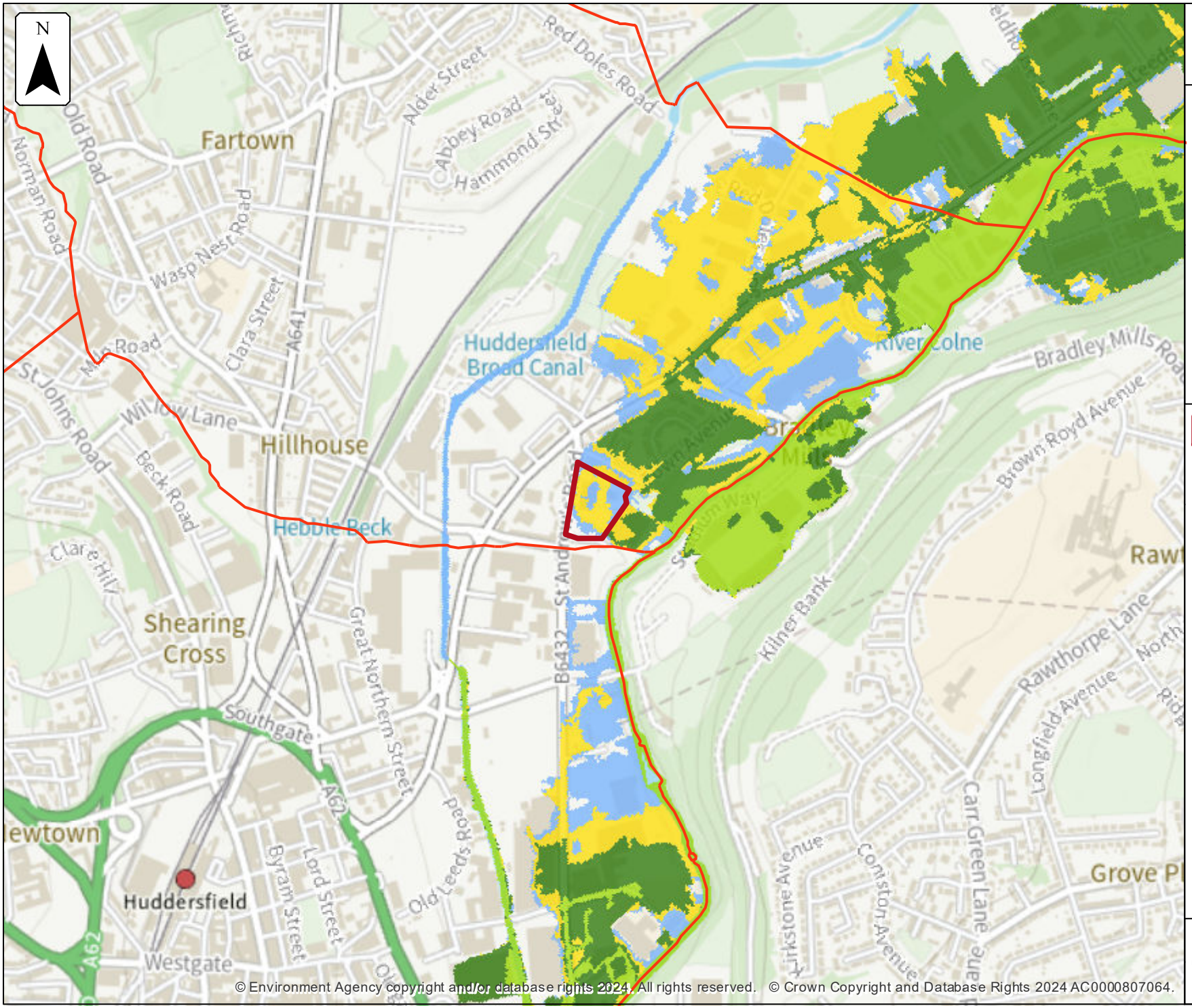
- Selected area
- Main river

Modelled flood extent

- 5% AEP
- 2% AEP
- 1% AEP
- 0.1% AEP

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

0 100 200 300 400 500
metres



Environment Agency

Defences removed climate change modelled fluvial extent

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2019 Colne Model

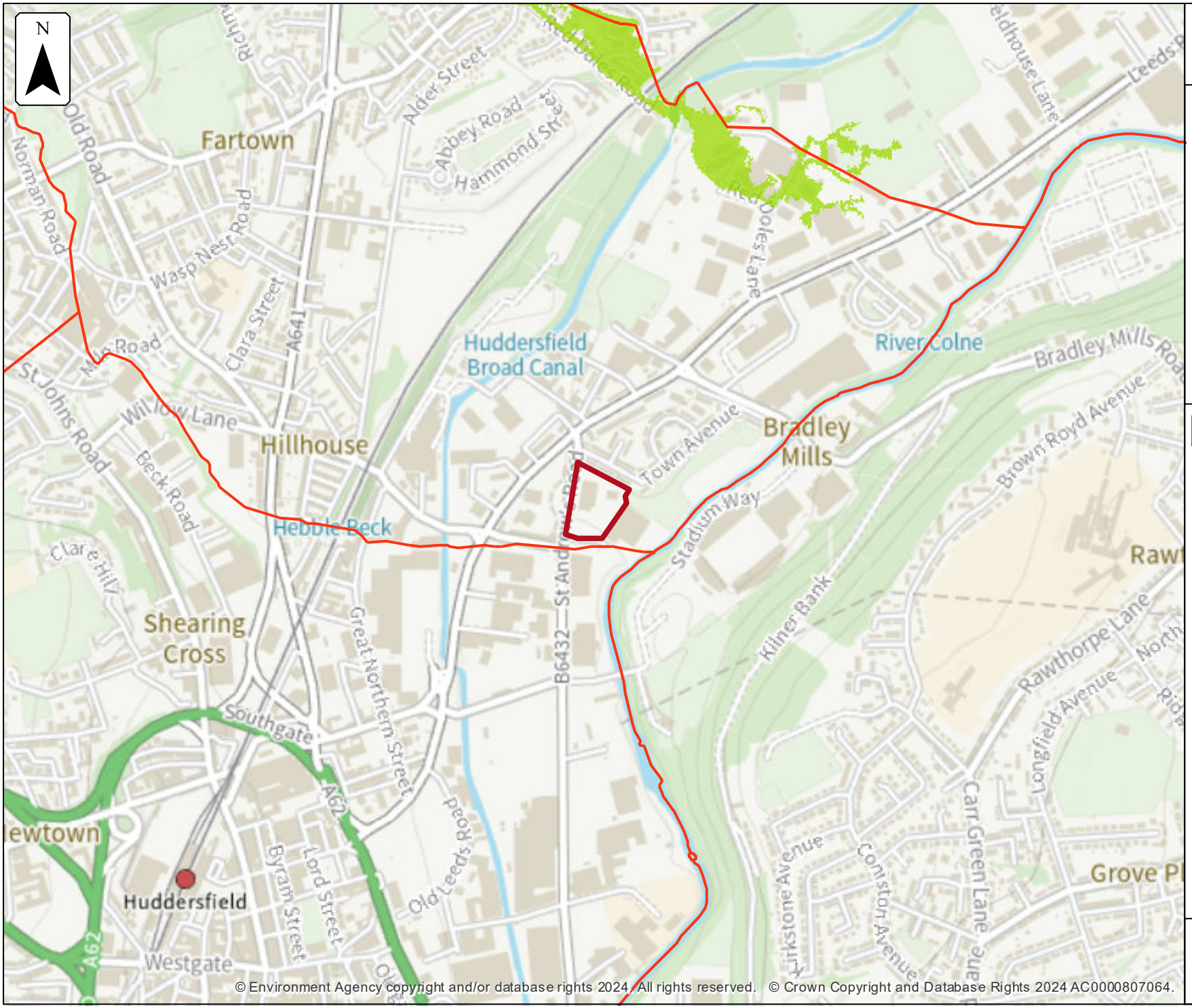
- Selected area
- Main river

Modelled flood extent

- 1.0% AEP (+20%)
- 1.0% AEP (+30%)
- 1.0% AEP (+50%)
- 0.1% AEP (+20%)

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

0 100 200 300 400 500
metres



Environment Agency

No defences exist climate change modelled fluvial extent

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Allison Dike

Selected area

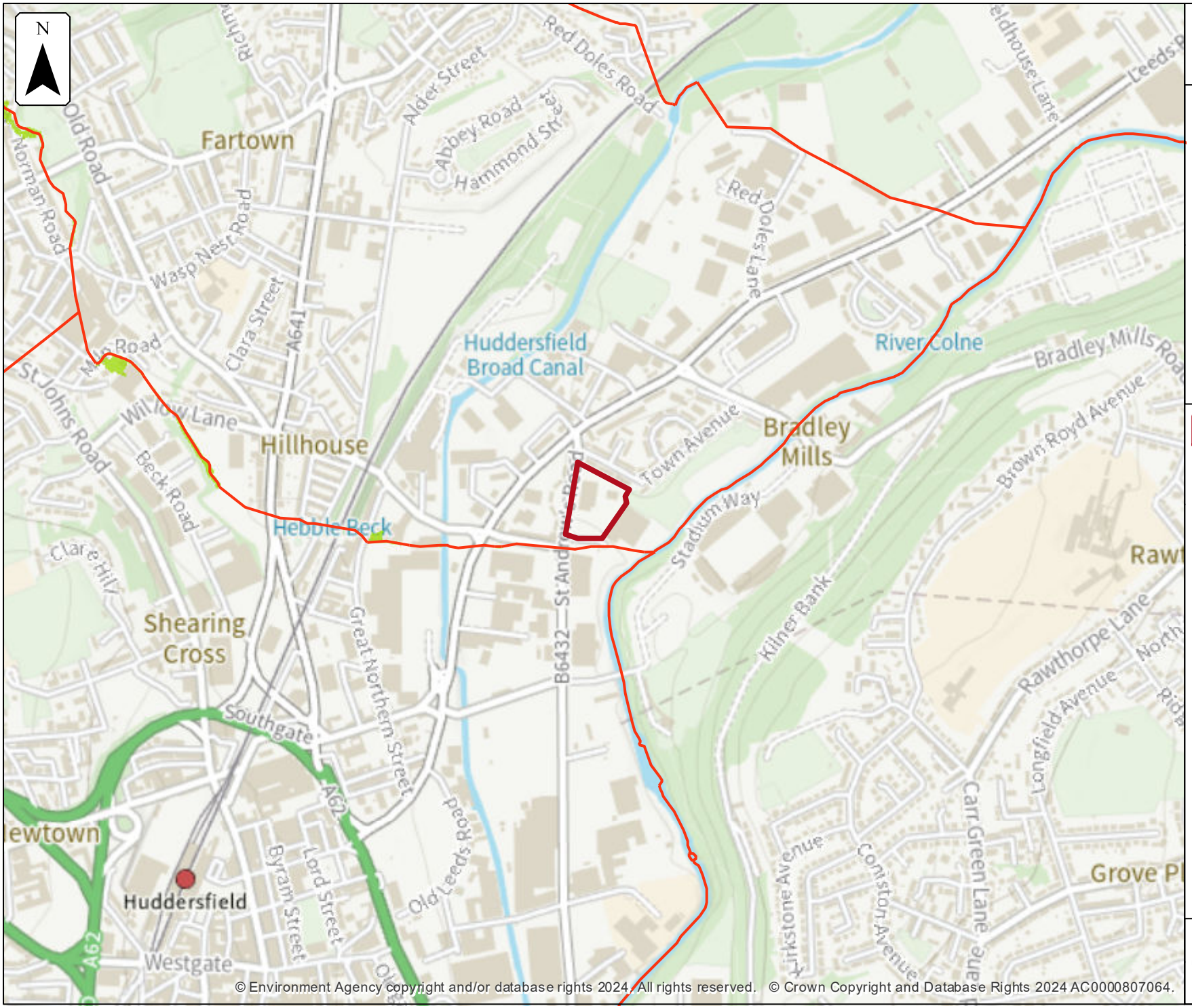
Main river

Modelled flood extent

1.0% AEP (+20%)

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

0 100 200 300 400 500
metres



Environment Agency

No defences exist climate change modelled fluvial extent

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Grimescar

Selected area

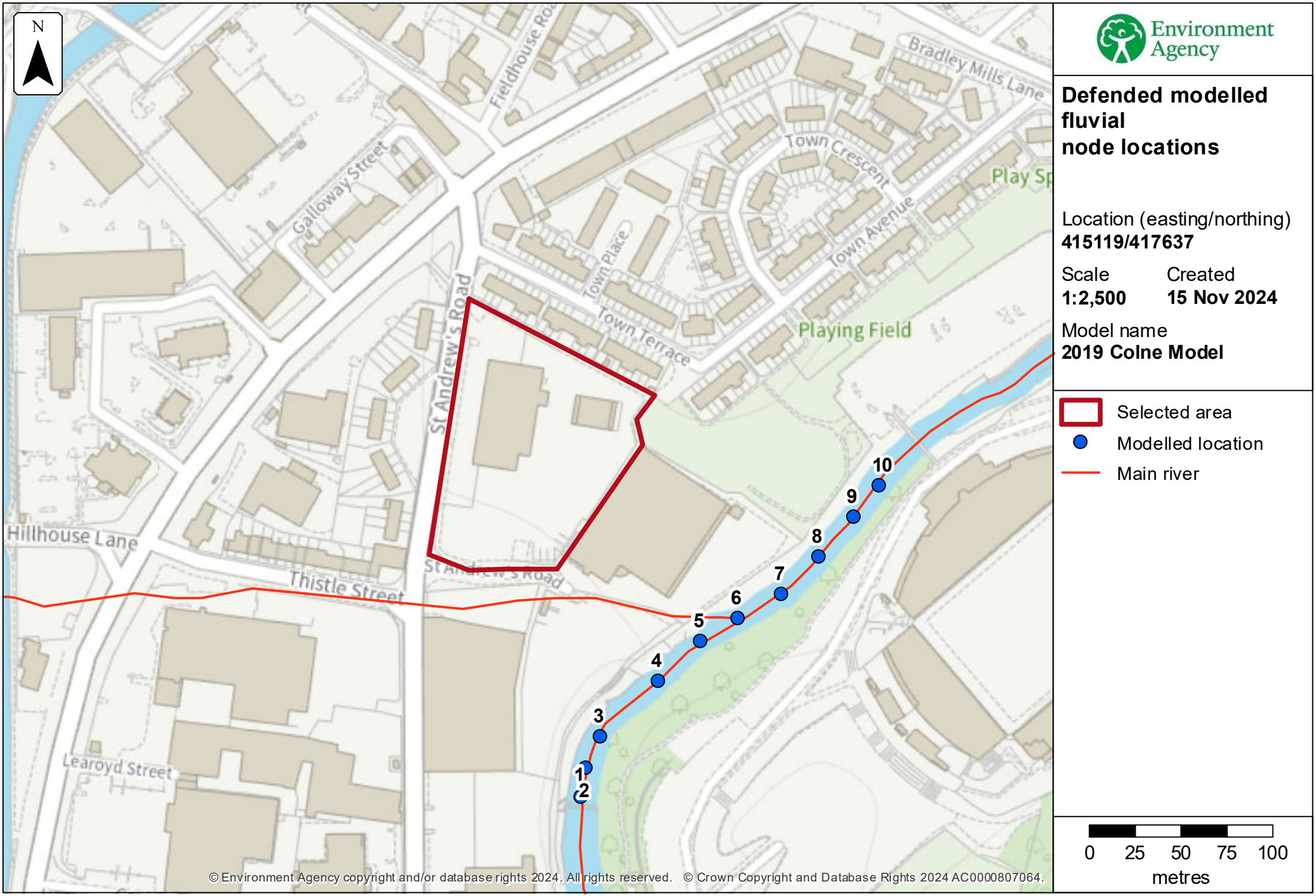
Main river

Modelled flood extent

1.0% AEP (+20%)

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

0 100 200 300 400 500
metres



Environment Agency

Defended modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:2,500

Created
15 Nov 2024

Model name
2019 Colne Model

Selected area
Modelled location
Main river

0 25 50 75 100
metres

Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
1	1197782	415148	417446	57.72	57.97	58.44	58.53	58.68	58.76	59.0	59.21	59.39	59.87	60.27
2	1198247	415151	417461	57.70	57.94	58.41	58.50	58.65	58.73	58.98	59.18	59.36	59.84	60.24
3	1197956	415159	417478	57.67	57.91	58.37	58.46	58.62	58.70	58.94	59.15	59.33	59.82	60.20
4	1198204	415190	417509	57.56	57.80	58.27	58.36	58.52	58.60	58.85	59.06	59.25	59.74	60.12
5	1198108	415214	417530	57.51	57.75	58.21	58.30	58.46	58.54	58.79	59.0	59.19	59.69	60.05
6	1198260	415234	417543	57.47	57.70	58.15	58.24	58.41	58.49	58.73	58.95	59.13	59.63	59.98
7	1198261	415258	417556	57.43	57.66	58.11	58.20	58.37	58.45	58.69	58.90	59.09	59.59	59.91
8	1197958	415278	417577	57.32	57.56	58.01	58.11	58.28	58.37	58.62	58.83	59.02	59.54	59.86
9	1197805	415298	417599	57.18	57.44	57.92	58.02	58.21	58.30	58.56	58.79	58.99	59.51	59.74
10	1198055	415312	417616	57.13	57.39	57.86	57.97	58.16	58.25	58.52	58.76	58.98	59.59	59.94

Data in this table comes from the 2019 Colne Model 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

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1197782	415148	417446	62.12	72.96	96.01	100.49	106.69	110.64	123.78	135.41	145.67	171.06	215.19
2	1198247	415151	417461	62.12	72.96	96.01	100.49	106.69	110.64	123.78	135.41	145.67	171.05	215.19
3	1197956	415159	417478	62.12	72.96	96.01	100.49	106.69	110.64	123.78	135.41	145.66	171.05	215.20
4	1198204	415190	417509	62.12	72.96	96.01	100.49	106.69	110.64	123.78	135.41	145.66	171.04	215.20
5	1198108	415214	417530	62.12	72.96	96.02	100.49	106.69	110.65	123.78	135.41	145.66	171.03	215.20
6	1198260	415234	417543	62.12	72.96	96.02	100.49	106.69	110.65	123.78	135.41	145.66	171.02	215.20
7	1198261	415258	417556	62.12	72.96	96.02	100.50	106.69	110.65	123.79	135.41	145.66	171.02	215.20
8	1197958	415278	417577	62.12	72.96	96.02	100.50	106.69	110.65	123.79	135.41	145.58	169.79	212.20
9	1197805	415298	417599	62.12	72.96	96.02	100.50	106.70	110.66	123.79	135.41	145.57	174.43	235.22
10	1198055	415312	417616	62.13	72.97	96.03	100.51	106.70	110.66	123.80	133.91	137.47	147.71	167.57

Data in this table comes from the 2019 Colne Model 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.



Environment Agency

Defences removed modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:2,500

Created
15 Nov 2024

Model name
2019 Colne Model

- Selected area
- Modelled location
- Main river

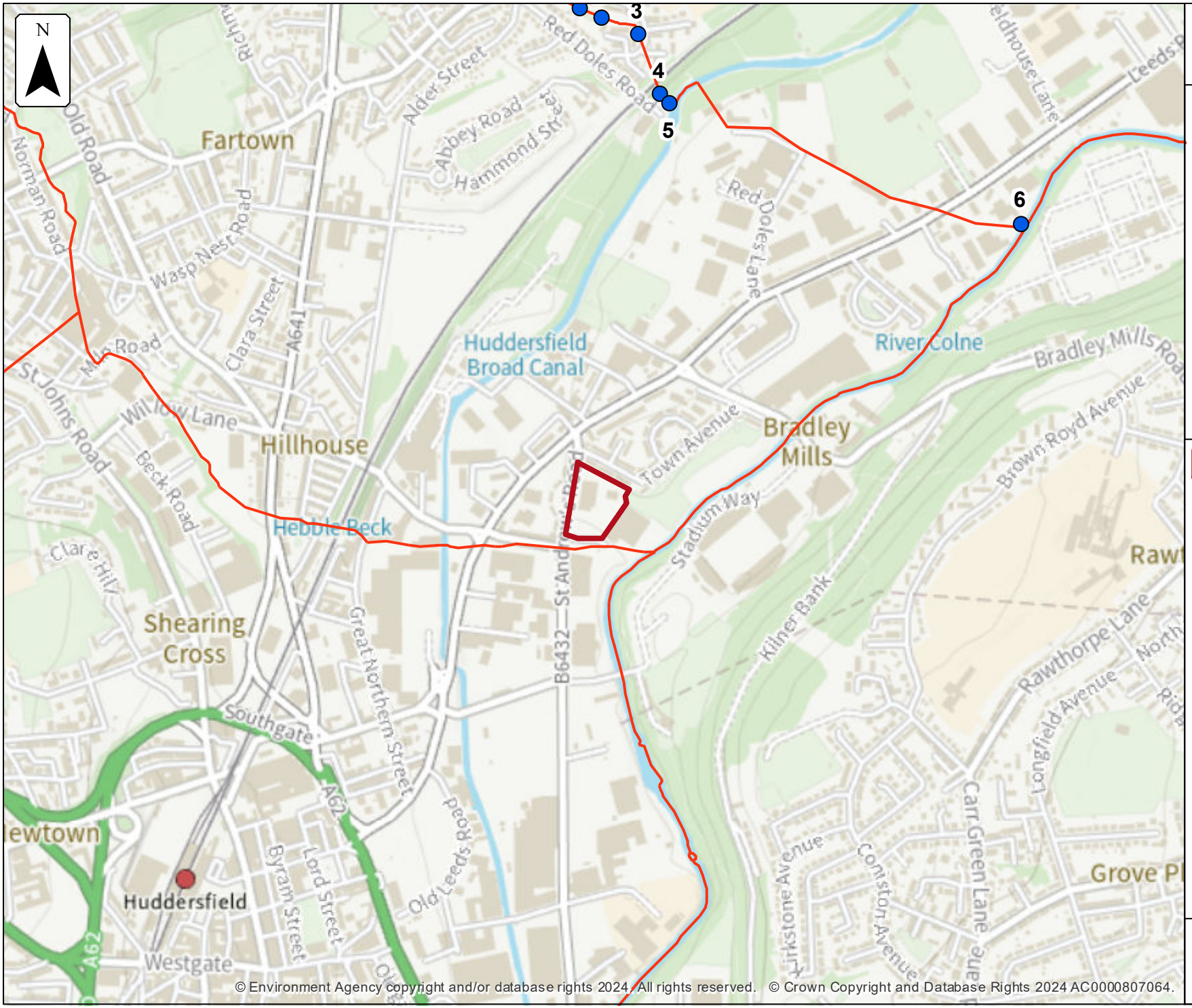
0 25 50 75 100
metres

Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	3.33% AEP	1% AEP	0.1% AEP	10% AEP	3.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Flow	Flow	Flow	Flow
1	1197782	415148	417446	58.44	58.76	59.39	60.27	96.01	110.62	145.64	215.26
2	1198247	415151	417461	58.41	58.73	59.36	60.24	96.01	110.63	145.64	215.26
3	1197956	415159	417478	58.37	58.70	59.33	60.20	96.01	110.63	145.64	215.26
4	1198204	415190	417509	58.27	58.60	59.25	60.12	96.01	110.63	145.63	215.28
5	1198108	415214	417530	58.21	58.54	59.19	60.05	96.02	110.63	145.63	215.28
6	1198260	415234	417543	58.15	58.49	59.13	59.98	96.02	110.64	145.63	215.28
7	1198261	415258	417556	58.11	58.45	59.09	59.92	96.02	110.64	145.63	215.28
8	1197958	415278	417577	58.01	58.37	59.02	59.86	96.02	110.64	145.56	212.28
9	1197805	415298	417599	57.92	58.30	58.98	59.74	96.02	110.64	145.54	235.33
10	1198055	415312	417616	57.86	58.25	58.98	59.94	96.03	110.65	137.46	167.64

Data in this table comes from the 2019 Colne Model 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.



Environment Agency

No defences exist modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Allison Dike

Selected area
Modelled location
Main river

0 100 200 300 400 500
metres

Modelled node locations data

No defences exist

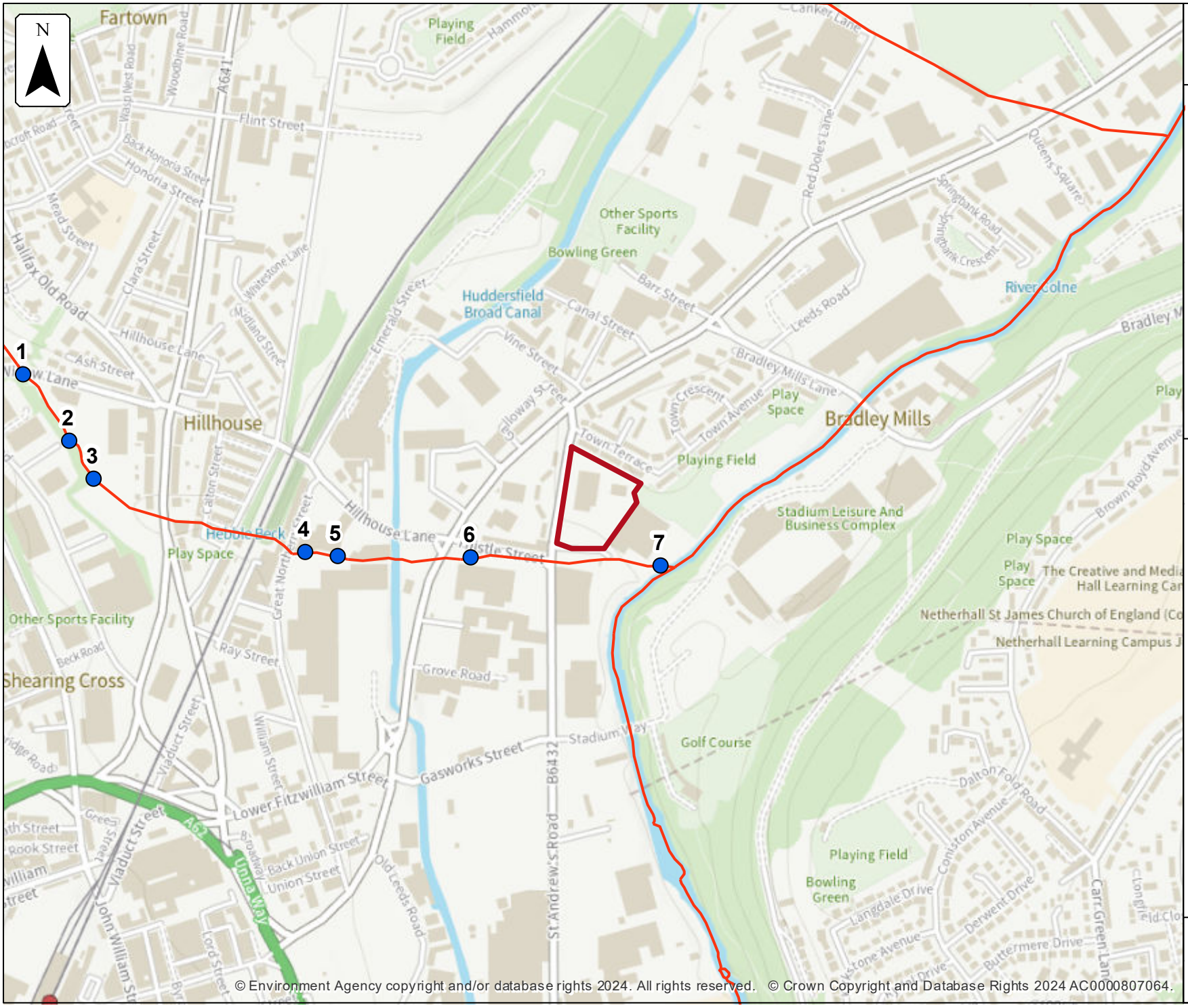
Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level
1	166445	415094	418601	68.21	68.85	68.99	69.06	69.08	69.14	69.20	69.24	69.07
2	208178	415134	418584	66.41	66.58	67.15	67.60	67.81	68.62	68.90	69.02	67.48
3	165616	415205	418552	65.20	66.06	67.08	67.57	67.79	68.62	68.90	69.02	67.42
4	221867	415249	418435	61.63	61.78	61.83	61.85	61.86	62.01	61.99	62.08	61.85
5	280133	415268	418415	60.10	60.29	60.36	60.40	60.44	60.52	60.60	60.73	60.39
6	46654	415953	418182	52.25	52.33	52.36	52.37	52.38	52.42	52.44	52.50	52.35

Data in this table comes from the 2011 Huddersfield Study - Allison Dike and Blackhouse Dike 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.

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	166445	415094	418601	1.75	2.39	2.50	2.51	2.53	2.54	2.53	2.53	2.51
2	208178	415134	418584	1.75	2.39	2.50	2.51	2.53	2.54	2.53	2.53	2.51
3	165616	415205	418552	1.97	2.62	2.88	3.0	3.07	3.23	3.27	3.27	2.96
4	221867	415249	418435	1.97	2.62	2.88	3.0	3.07	3.23	3.27	3.27	2.96
5	280133	415268	418415	1.97	2.62	2.88	3.0	3.15	3.46	3.72	4.33	2.96
6	46654	415953	418182	1.97	2.62	2.88	3.0	3.09	3.44	3.72	4.32	2.87

Data in this table comes from the 2011 Huddersfield Study - Allison Dike and Blackhouse Dike 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.



Environment Agency

No defences exist modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:7,500

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Grimescar

- Selected area
- Modelled location
- Main river

0 100 200 300
metres

Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level
1	205634	414285	417824	72.85	72.96	73.05	73.13	73.16	73.26	73.34	73.41	74.11
2	219397	414353	417727	71.22	71.37	71.50	71.64	71.69	71.89	72.07	72.18	73.09
3	74312	414389	417672	71.01	71.23	71.40	71.56	71.62	71.85	72.03	72.15	73.08
4	342710	414698	417564	65.74	65.94	66.08	66.23	66.28	66.48	66.57	66.62	66.85
5	273833	414745	417558	65.26	65.45	65.59	65.73	65.78	65.96	66.05	66.09	66.31
6	249122	414940	417556	61.51	61.69	61.83	61.97	62.02	62.19	62.23	62.25	62.40
7	344834	415218	417545	58.61	58.61	58.61	58.61	58.61	59.08	59.08	59.28	59.28

Data in this table comes from the 2011 Huddersfield Study - Grimescar Beck / Clayton Dike 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.

No defences exist

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	205634	414285	417824	1.95	2.49	2.96	3.51	3.71	4.60	5.05	5.33	5.88
2	219397	414353	417727	1.95	2.49	2.95	3.51	3.70	4.60	5.05	5.32	5.88
3	74312	414389	417672	2.33	3.01	3.60	4.30	4.55	5.68	6.46	7.08	10.93
4	342710	414698	417564	2.32	3.01	3.59	4.29	4.54	5.67	6.46	7.07	10.97
5	273833	414745	417558	2.71	3.54	4.25	5.10	5.41	6.78	7.73	8.49	15.39
6	249122	414940	417556	2.70	3.53	4.24	5.05	5.35	6.75	7.70	8.48	15.41
7	344834	415218	417545	2.71	3.54	4.26	5.06	5.37	6.78	7.73	8.53	11.75

Data in this table comes from the 2011 Huddersfield Study - Grimescar Beck / Clayton Dike 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.



Environment Agency

Defences removed climate change modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:2,500

Created
15 Nov 2024

Model name
2019 Colne Model

Selected area
Modelled location
Main river

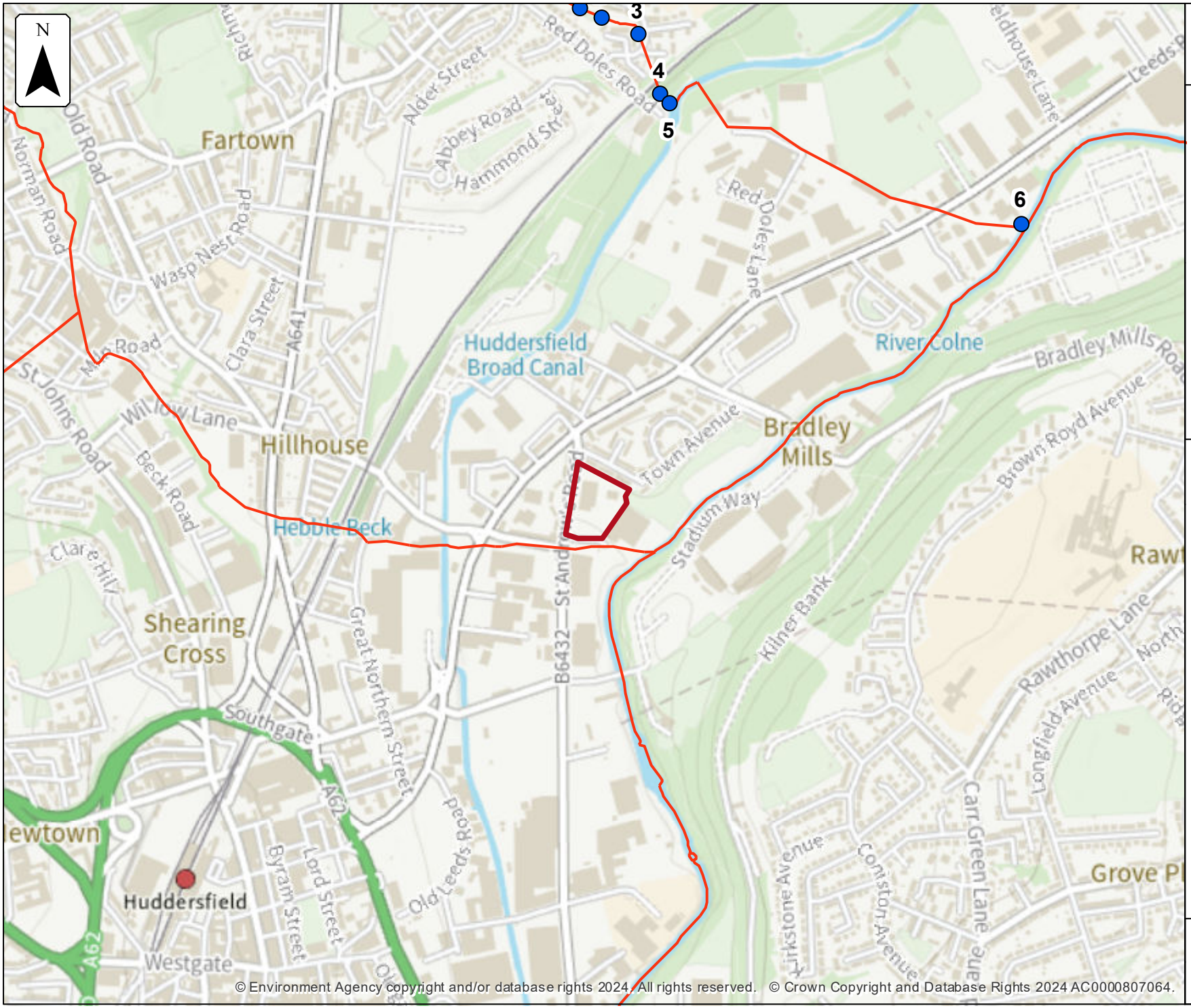
0 25 50 75 100
metres

Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)
				Level	Level	Level	Level	Flow	Flow	Flow	Flow
1	1197782	415148	417446	59.91	60.05	60.25	60.60	174.75	188.21	213.33	262.77
2	1198247	415151	417461	59.89	60.02	60.22	60.56	174.74	188.21	213.33	262.79
3	1197956	415159	417478	59.86	59.99	60.19	60.52	174.74	188.21	213.33	262.78
4	1198204	415190	417509	59.78	59.91	60.10	60.42	174.73	188.21	213.34	262.82
5	1198108	415214	417530	59.73	59.85	60.03	60.33	174.72	188.21	213.34	262.83
6	1198260	415234	417543	59.67	59.79	59.96	60.24	174.72	188.22	213.34	262.48
7	1198261	415258	417556	59.62	59.74	59.90	60.16	174.71	188.22	213.34	262.50
8	1197958	415278	417577	59.57	59.69	59.85	60.10	173.32	186.22	210.43	257.31
9	1197805	415298	417599	59.54	59.63	59.74	59.84	179.33	197.62	232.54	302.15
10	1198055	415312	417616	59.63	59.75	59.92	60.19	147.62	149.26	166.36	201.33

Data in this table comes from the 2019 Colne Model 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.



Environment Agency

No defences exist climate change modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:10,000

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Allison Dike

- Selected area
- Modelled location
- Main river

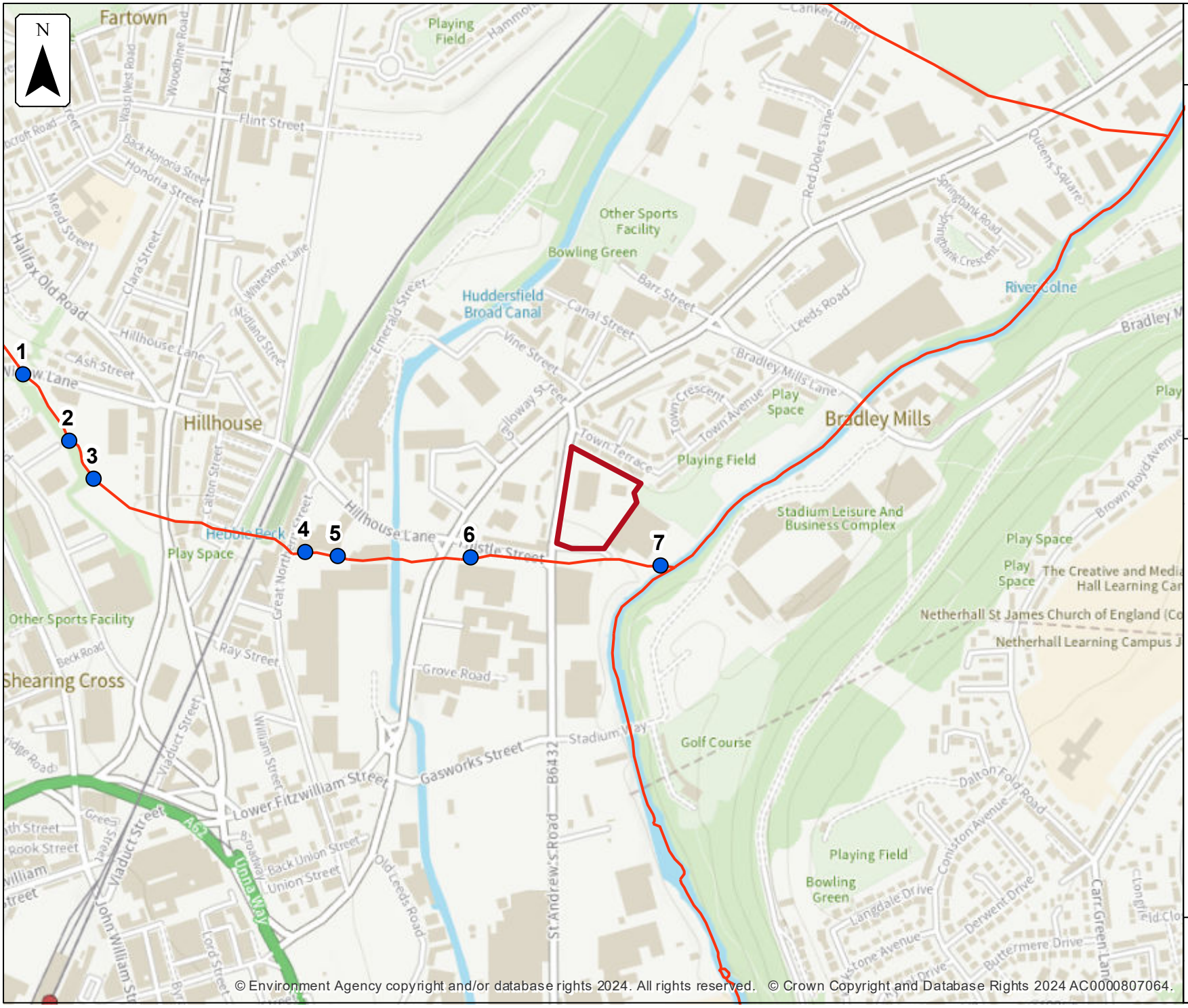
0 100 200 300 400 500
metres

Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	166445	415094	418601	69.30	2.53
2	208178	415134	418584	69.16	2.53
3	165616	415205	418552	69.15	3.27
4	221867	415249	418435	62.23	3.27
5	280133	415268	418415	61.12	5.48
6	46654	415953	418182	52.61	5.47

Data in this table comes from the 2011 Huddersfield Study - Allison Dike and Blackhouse Dike 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.



Environment Agency

No defences exist climate change modelled fluvial node locations

Location (easting/northing)
415119/417637

Scale
1:7,500

Created
15 Nov 2024

Model name
2011 Huddersfield Study - Grimescar

Selected area

Modelled location

Main river

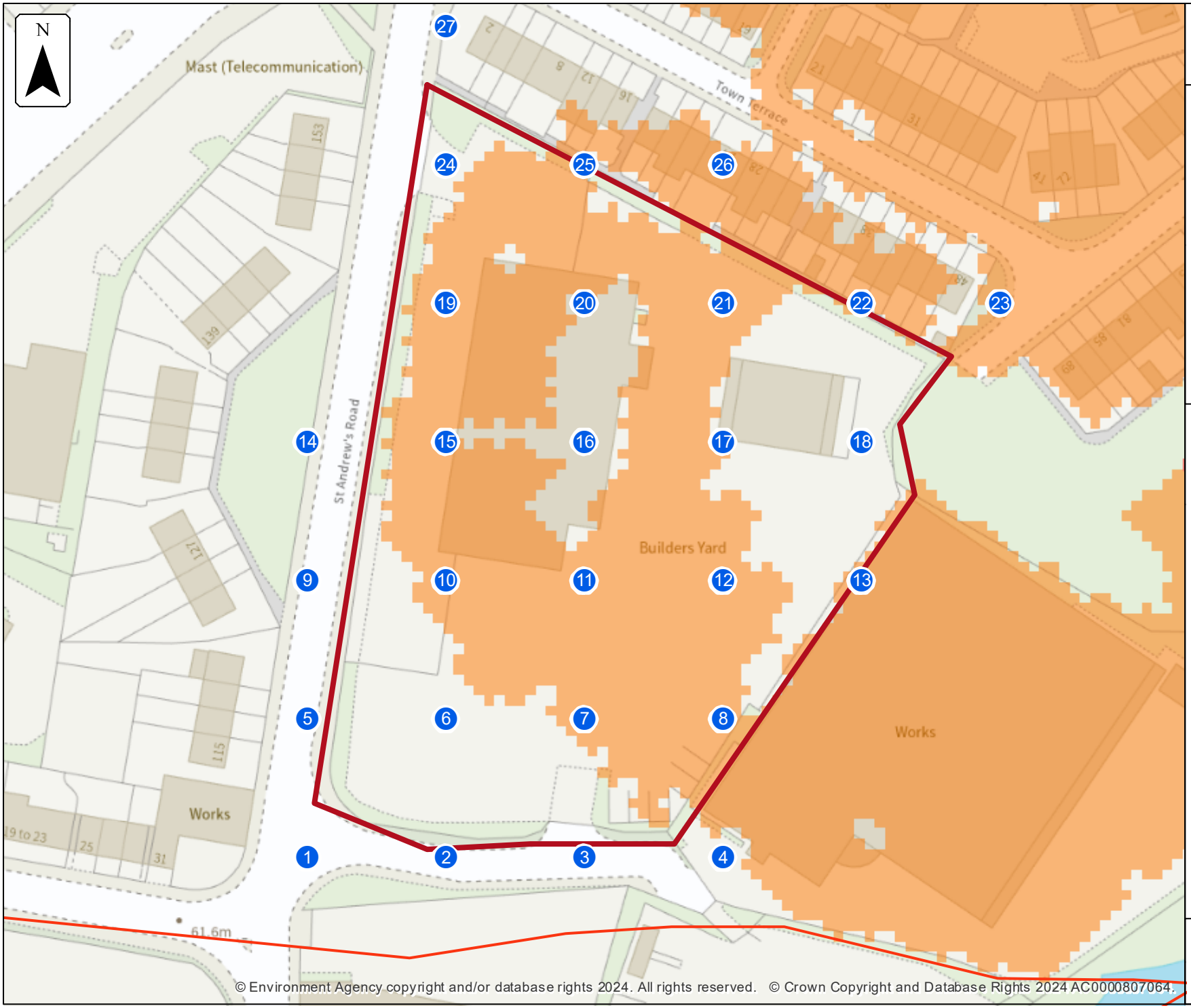
0 100 200 300
metres

Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	205634	414285	417824	73.68	5.56
2	219397	414353	417727	72.40	5.55
3	74312	414389	417672	72.37	8.22
4	342710	414698	417564	66.74	8.21
5	273833	414745	417558	66.20	9.92
6	249122	414940	417556	62.30	9.90
7	344834	415218	417545	59.28	9.95

Data in this table comes from the 2011 Huddersfield Study - Grimescar Beck / Clayton Dike 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.



Environment Agency

Defended modelled fluvial extent and height

Location (easting/northing)
415119/417637

Scale
1:1,000

Created
15 Nov 2024

Model name
2019 Colne Model

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 59.0
- 59.0 - 59.125
- 59.125 - 59.25
- 59.25 - 59.375
- 59.375 - 59.5
- 59.5 - 59.625
- 59.625 - 59.75
- 59.75 - 59.875
- 59.875 - 60.0

This map shows the 0.1% AEP height data

0 10 20 30 40
metres

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Sample point data

Defended

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	415063	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	415090	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	415117	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	415144	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	415063	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	415090	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	415117	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.04
8	415144	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.08
9	415063	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	415090	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.14
11	415117	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.21
12	415144	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.17
13	415171	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.12
14	415063	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	415090	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.13
16	415117	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
17	415144	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	415171	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
19	415090	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.16
20	415117	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	415144	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.13
22	415171	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.02
23	415198	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.11
24	415090	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	415117	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	415144	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.10
27	415090	417730	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	0.31

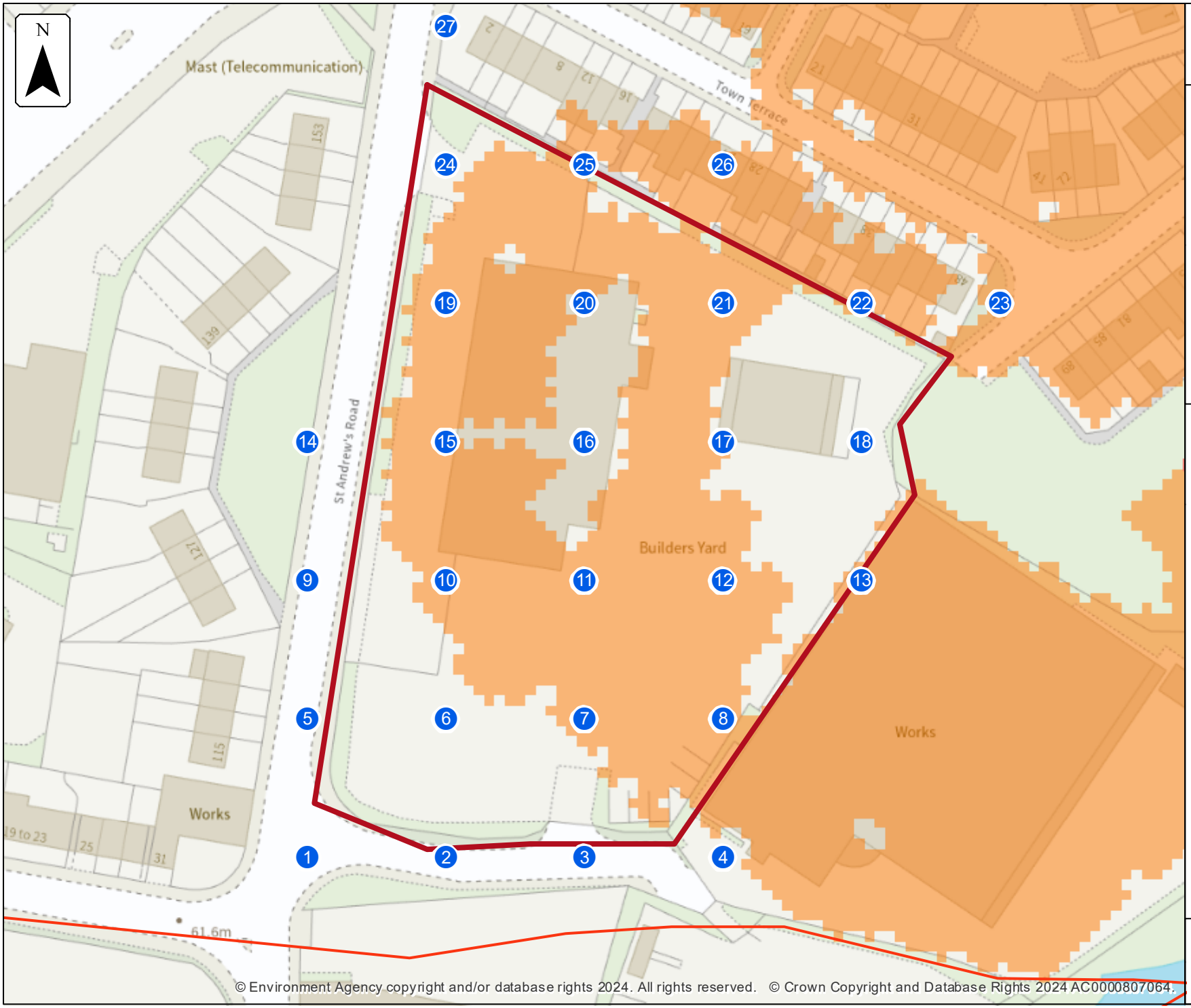
Data in this table comes from the 2019 Colne Model model.
Height values are shown in mAOD, and depth values are shown in metres.
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If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
1	415063	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	415090	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	415117	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	415144	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	415063	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	415090	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	415117	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
8	415144	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
9	415063	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	415090	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
11	415117	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
12	415144	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
13	415171	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.87
14	415063	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	415090	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
16	415117	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
17	415144	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	415171	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height	Height	Height
19	415090	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
20	415117	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	415144	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
22	415171	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
23	415198	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
24	415090	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	415117	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	415144	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	59.83
27	415090	417730	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	Could not determine	59.87

Data in this table comes from the 2019 Colne Model model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defences removed modelled fluvial extent and height

Location (easting/northing)
415119/417637

Scale
1:1,000

Created
15 Nov 2024

Model name
2019 Colne Model

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 59.0
- 59.0 - 59.125
- 59.125 - 59.25
- 59.25 - 59.375
- 59.375 - 59.5
- 59.5 - 59.625
- 59.625 - 59.75
- 59.75 - 59.875
- 59.875 - 60.0

This map shows the 0.1% AEP height data

0 10 20 30 40
metres

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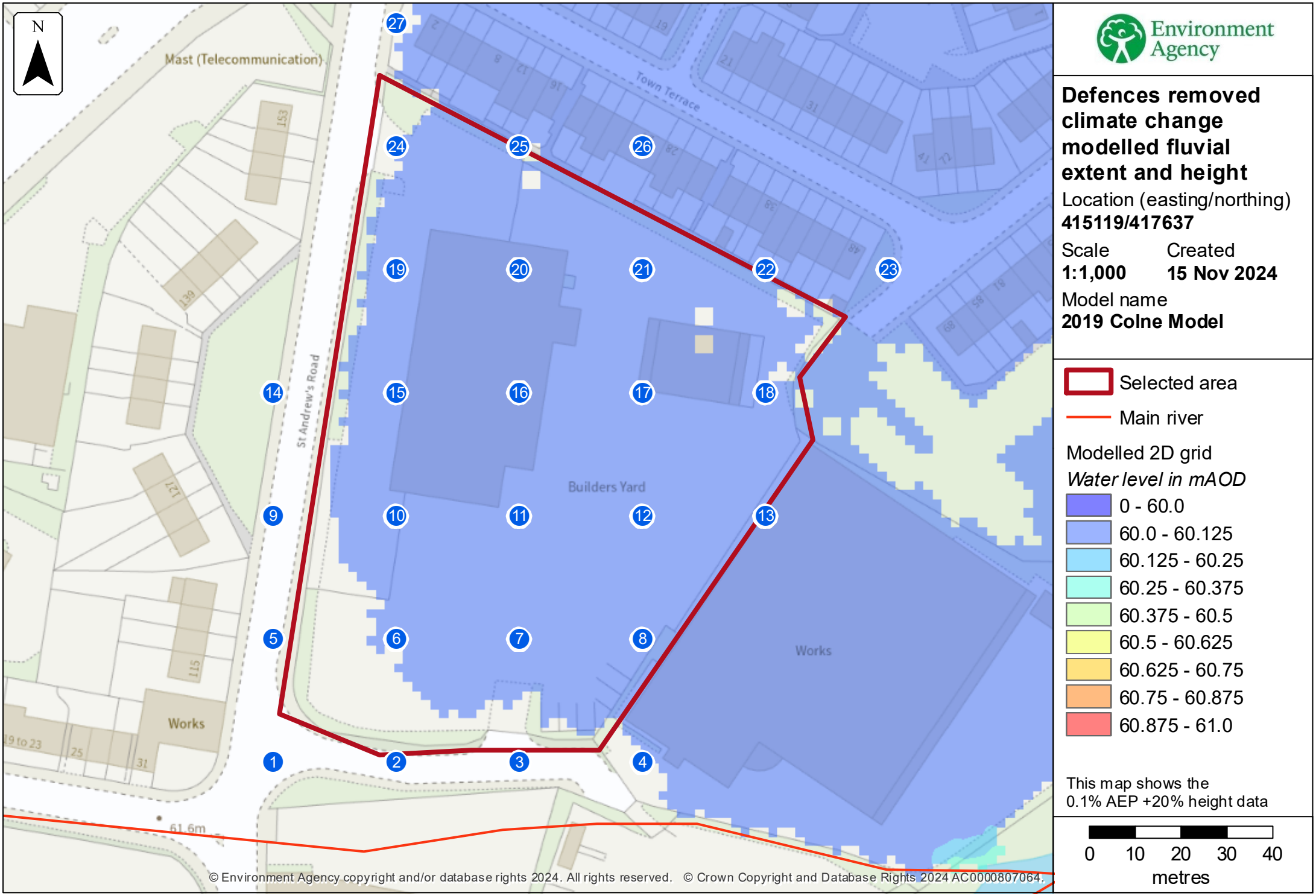
Sample point data

Defences removed

Label	Easting	Northing	10% AEP	3.33% AEP	1% AEP	0.1% AEP	10% AEP	3.33% AEP	1% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Height	Height	Height	Height
1	415063	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	415090	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	415117	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	415144	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	415063	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	415090	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	415117	417595	NoData	NoData	NoData	0.04	NoData	NoData	NoData	59.83
8	415144	417595	NoData	NoData	NoData	0.08	NoData	NoData	NoData	59.83
9	415063	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	415090	417622	NoData	NoData	NoData	0.14	NoData	NoData	NoData	59.83
11	415117	417622	NoData	NoData	NoData	0.21	NoData	NoData	NoData	59.83
12	415144	417622	NoData	NoData	NoData	0.17	NoData	NoData	NoData	59.83
13	415171	417622	NoData	NoData	NoData	0.12	NoData	NoData	NoData	59.87
14	415063	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	415090	417649	NoData	NoData	NoData	0.13	NoData	NoData	NoData	59.83
16	415117	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	10% AEP	3.33% AEP	1% AEP	0.1% AEP	10% AEP	3.33% AEP	1% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Height	Height	Height	Height
17	415144	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	415171	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
19	415090	417676	NoData	NoData	NoData	0.16	NoData	NoData	NoData	59.83
20	415117	417676	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	415144	417676	NoData	NoData	NoData	0.12	NoData	NoData	NoData	59.83
22	415171	417676	NoData	NoData	NoData	0.02	NoData	NoData	NoData	59.83
23	415198	417676	NoData	NoData	NoData	0.11	NoData	NoData	NoData	59.83
24	415090	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	415117	417703	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
26	415144	417703	NoData	NoData	NoData	0.10	NoData	NoData	NoData	59.83
27	415090	417730	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			Could not determine	Could not determine	Could not determine	0.31	Could not determine	Could not determine	Could not determine	59.87

Data in this table comes from the 2019 Colne Model model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defences removed climate change modelled fluvial extent and height

Location (easting/northing)
415119/417637

Scale
1:1,000

Created
15 Nov 2024

Model name
2019 Colne Model

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 60.0
- 60.0 - 60.125
- 60.125 - 60.25
- 60.25 - 60.375
- 60.375 - 60.5
- 60.5 - 60.625
- 60.625 - 60.75
- 60.75 - 60.875
- 60.875 - 61.0

This map shows the
0.1% AEP +20% height data

0 10 20 30 40
metres

Sample point data

Defences removed climate change

Label	Easting	Northing	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)
			Depth	Depth	Depth	Depth	Height	Height	Height	Height
1	415063	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	415090	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	415117	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	415144	417568	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	415063	417595	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	415090	417595	NoData	NoData	NoData	0.09	NoData	NoData	NoData	60.08
7	415117	417595	NoData	NoData	NoData	0.28	NoData	NoData	NoData	60.08
8	415144	417595	NoData	NoData	0.07	0.33	NoData	NoData	59.82	60.08
9	415063	417622	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	415090	417622	NoData	NoData	0.12	0.39	NoData	NoData	59.81	60.08
11	415117	417622	NoData	NoData	0.19	0.46	NoData	NoData	59.81	60.08
12	415144	417622	NoData	NoData	0.15	0.42	NoData	NoData	59.81	60.08
13	415171	417622	NoData	NoData	0.11	0.33	NoData	NoData	59.85	60.08
14	415063	417649	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	415090	417649	NoData	NoData	0.11	0.38	NoData	NoData	59.81	60.08
16	415117	417649	NoData	NoData	NoData	0.20	NoData	NoData	NoData	60.08

Label	Easting	Northing	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)	1% AEP (+20%)	1% AEP (+30%)	1% AEP (+50%)	0.1% AEP (+20%)
			Depth	Depth	Depth	Depth	Height	Height	Height	Height
17	415144	417649	NoData	NoData	NoData	0.19	NoData	NoData	NoData	60.08
18	415171	417649	NoData	NoData	NoData	0.17	NoData	NoData	NoData	60.08
19	415090	417676	NoData	NoData	0.14	0.41	NoData	NoData	59.81	60.08
20	415117	417676	NoData	NoData	NoData	0.24	NoData	NoData	NoData	60.07
21	415144	417676	NoData	NoData	0.10	0.37	NoData	NoData	59.81	60.07
22	415171	417676	NoData	NoData	NoData	0.26	NoData	NoData	NoData	60.07
23	415198	417676	NoData	NoData	0.10	0.35	NoData	NoData	59.82	60.08
24	415090	417703	NoData	NoData	NoData	0.08	NoData	NoData	NoData	60.07
25	415117	417703	NoData	NoData	NoData	0.24	NoData	NoData	NoData	60.07
26	415144	417703	NoData	NoData	0.08	0.34	NoData	NoData	59.81	60.06
27	415090	417730	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			Could not determine	0.04	0.29	0.56	Could not determine	59.66	59.85	60.09

Data in this table comes from the 2019 Colne Model model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Strategic flood risk assessments

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

This should give you information about:

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

Your Lead Local Flood Authority is Kirklees 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 Yorkshire Environment Agency team at neyorkshire@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