

Please quote 27637-067-PL1 in all correspondence.

Please note that advance approval is required before a site visit – even if the visit is only to the outside of the branch. Due to heightened awareness of criminality around bank branches staff will spot and report incidence of suspicious activity to the local constabulary.

To avoid any undue interaction with the police please call us on 01142490944 to arrange a visit. Three working days' notice is required to ensure the visit can be arranged with all internal parties.

If you have any queries about a visit to a site, please email richard@axis-architecture.com or call 07912731638.

Flood Risk Assessment to Support Planning Application – HSBC UK – Rochdale

Document date 25/07/2022

Rev -

Site Address:

HSBC UK Bank plc,
2 Yorkshire Street,
Rochdale,
Lancashire,
OL16 1EE

1.0 Introduction

- 1.01 This Flood Risk Assessment has been produced in support of the planning application to replace 1no. ATM machine at HSBC UK Bank, Rochdale.

2.0 Development Site

- 2.01 The bank is located on Yorkshire Street, in the centre of Rochdale and in close proximity to an exposed section of the River Roch.

3.0 Development Proposals

- 3.01 The proposals can readily be broken-down into the following components which form the focus of this assessment:
- I. Replacement of 1no. external ATM machine
- 3.02 No new floor area will be added to the building as part of this proposal. All existing floor levels, access and escape routes and surface water management measures will be unaffected.

4.0 Sequential Test

- 4.01 As the proposed development is a very minor addition to an existing building, the Sequential Test does not apply.

5.0 Exception Test

- 5.01 As the proposed development is a very minor addition to an existing building, the Exception Test does not apply.

6.0 Site Specific Flood Hazards

- 6.01 As the site is located in close proximity to the River Roch in a heavily paved area of town, the most likely flood hazard to the site is fluvial flooding due to channel capacity being reached, as per historical floods (please refer to Appendix B.)

7.0 Flood Risk Management

- 7.01 The ground floor of the existing building is raised above street level, affording it some extra protection in case of the river bursting its banks.

8.0 Conclusions

- 8.01 As the proposed development is for a replacement ATM above ground level, installed within the existing aperture, and all existing floors and access/escape routes are unaffected by the proposal, we do not believe that the proposal will increase the risk of flooding to the existing bank.

Appendix A

Flood Map denoting local Flood Zones and Site Location

Source: Environment Agency

Flood map for planning

Your reference
27637-067-Rochdale

Location (easting/northing)
389642/413399

Created
25 Jul 2022 14:28

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

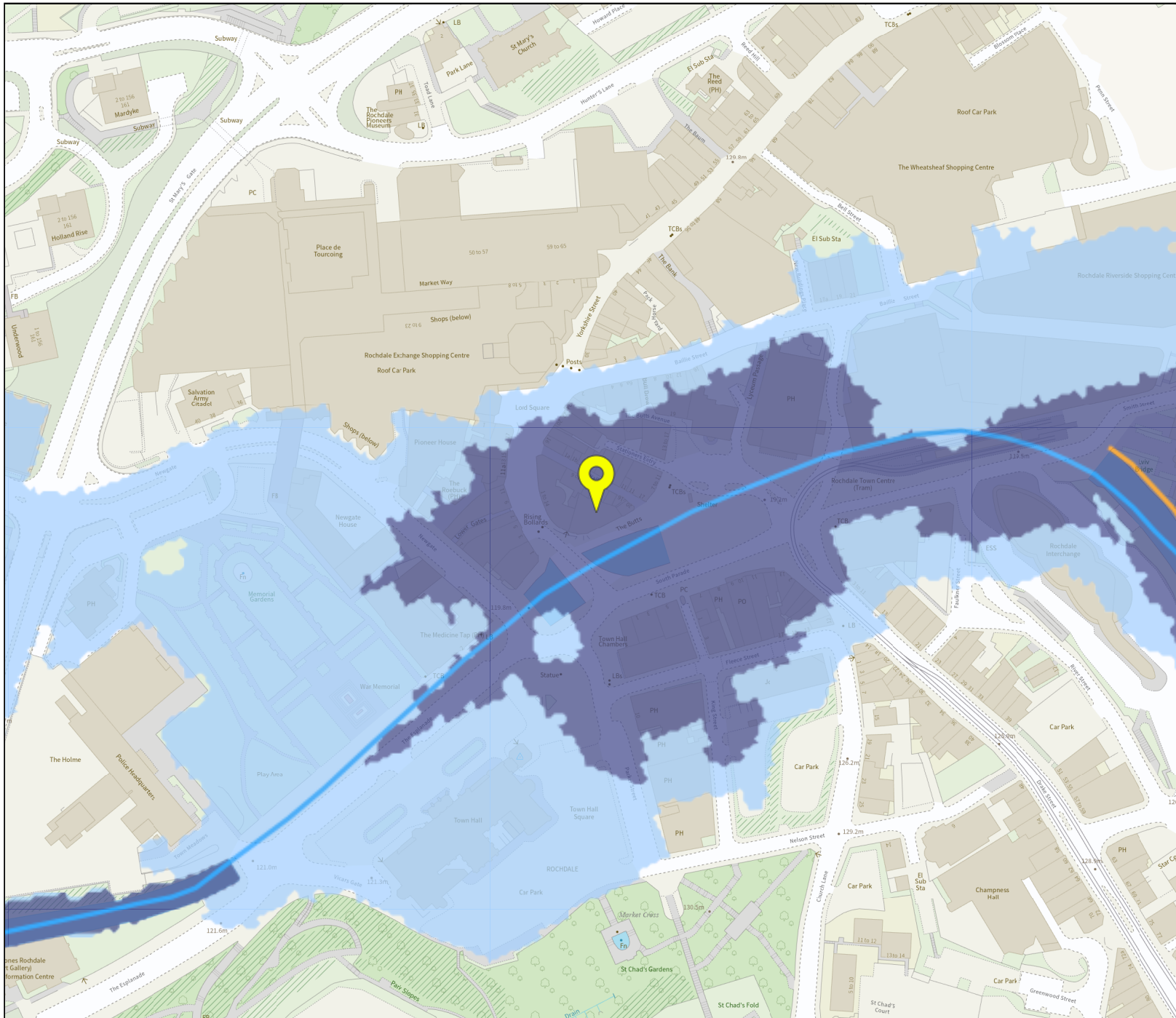
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

27637-067-Rochdale

Location (easting/northing)

389642/413399

Scale

1:2500

Created

25 Jul 2022 14:28

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

Appendix B

Flood Risk Assessment Data

Source: Environment Agency

Environment
Agency

Document created on: 9 June 2022

Customer reference number: GMMC266561SW / MX6UFM7JATA4

Map of Rochdale Town Centre showing the location of the Rochdale Exchange Shopping Centre and the proposed Rochdale Town Centre. The map includes a north arrow, a scale bar (0 to 50 metres), and a legend. The legend indicates that a red pin marks the 'Selected location' and a red line marks the 'Main river'. The map shows the Rochdale Exchange Shopping Centre, the Rochdale Town Centre, and the Rochdale Canal. The Rochdale Exchange Shopping Centre is located on the left side of the map, and the Rochdale Town Centre is located on the right side. The Rochdale Canal runs along the bottom of the map. The Rochdale Exchange Shopping Centre is a large building complex, and the Rochdale Town Centre is a smaller building complex. The Rochdale Canal is a waterway that runs through the town. The map also shows other streets and buildings in the area, including Market Way, Yorkshire Street, The Bank, Baillie Street, The Butts Avenue, The Walk, The Butts, South Parade, Fleece Street, and King Street.

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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)
- areas benefiting from defences
- historic flooding
- flood defences and attributes
- 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

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

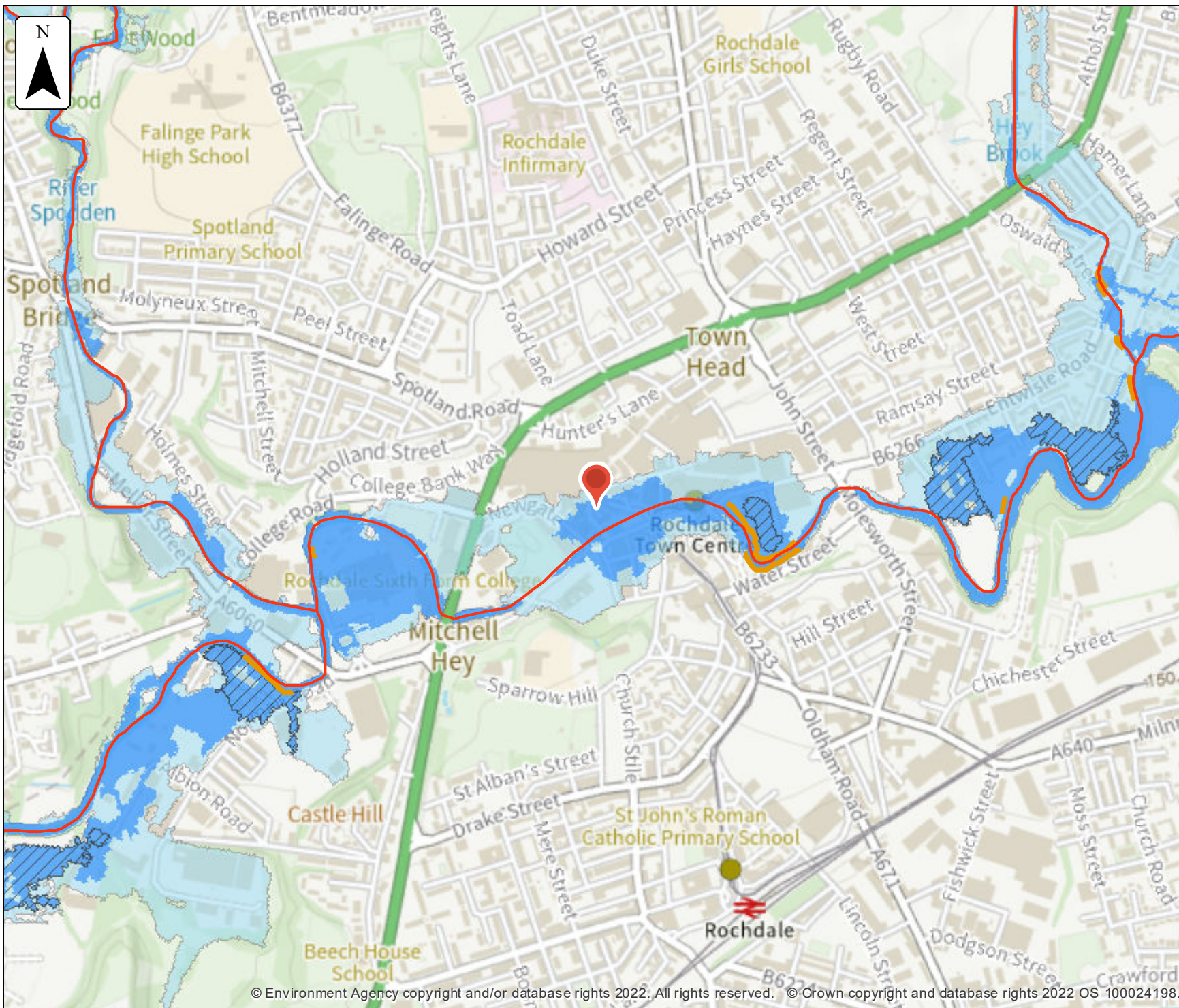
This data is updated on a quarterly basis as better data becomes available.

Areas benefiting from defences

This map shows the areas benefiting from defences for 2 possible events:

- fluvial (river flooding) event that has a 1% annual exceedance probability (AEP), this means a 1% chance of occurring in any one year
- tidal or coastal event that has a 0.5% annual exceedance probability (AEP), this means a 0.5% chance of occurring in any one year

[Download the GIS dataset for areas benefiting from defences](#)



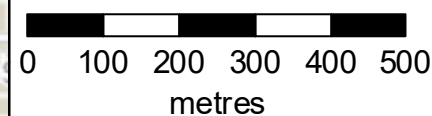
Flood map for planning

Location (easting/northing)
389623/413418

Scale
1:10,000

Created
9 Jun 2022

-  Selected location
-  Main river
-  Flood defence
-  Areas benefiting from flood defence
-  Flood zone 3
-  Flood zone 2



Historic flooding

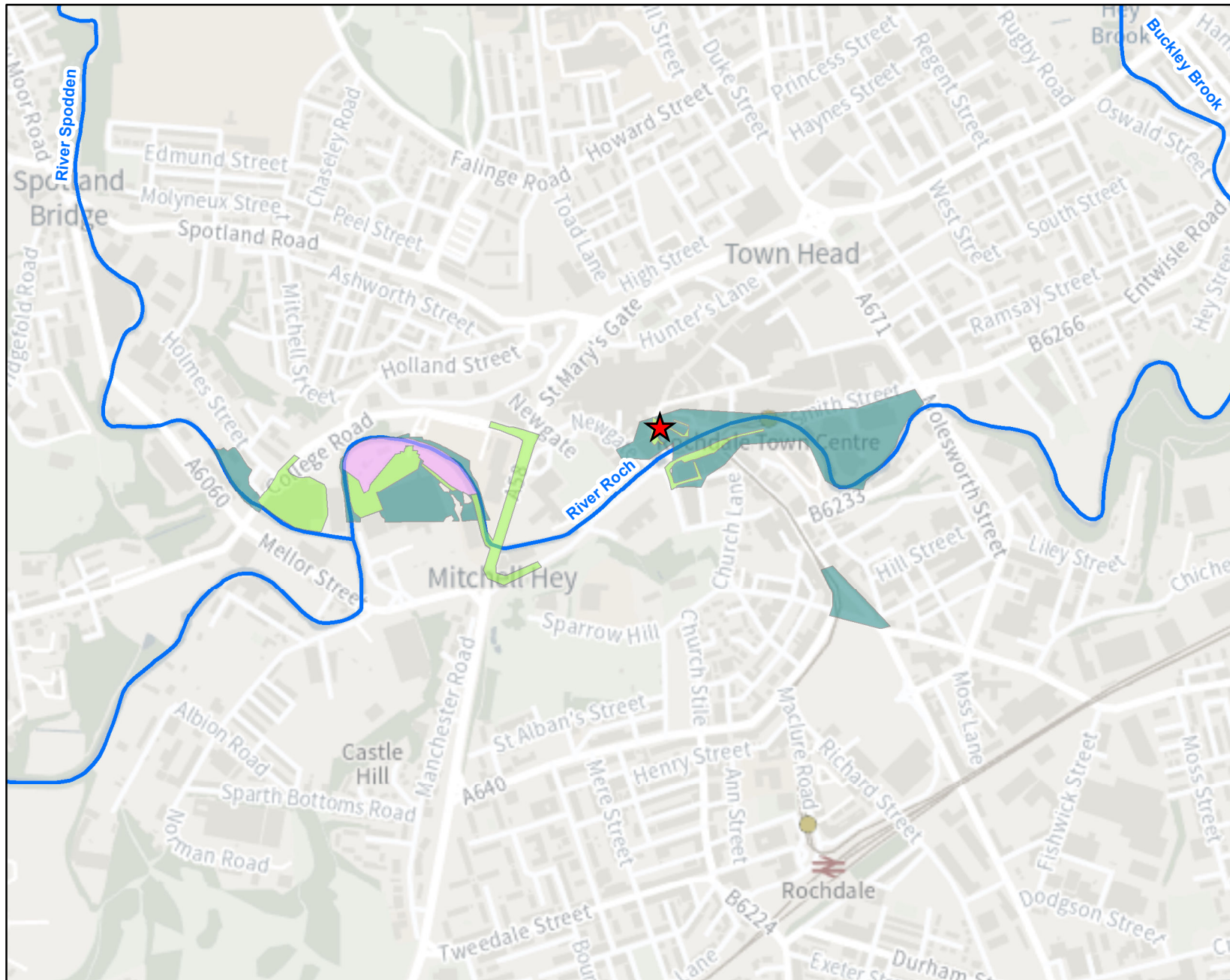
This map is an indicative outline of areas that have previously flooded. Remember that:

- our records are incomplete, so the information here is based on the best available data
- it is possible not all properties within this area will have flooded
- other flooding may have occurred that we do not have records for
- flooding can come from a range of different sources - we can only supply flood risk data relating to flooding from rivers or the sea

You can also contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

[Download recorded flood outlines in GIS format](#)

Recorded Flood Outline Map



1:10,001



Legend



Site Location



Main River

Recorded Flood Outlines

Start Date

- 16/03/2019
- 26/12/2015
- 28/07/2019

Recorded Flood Outlines

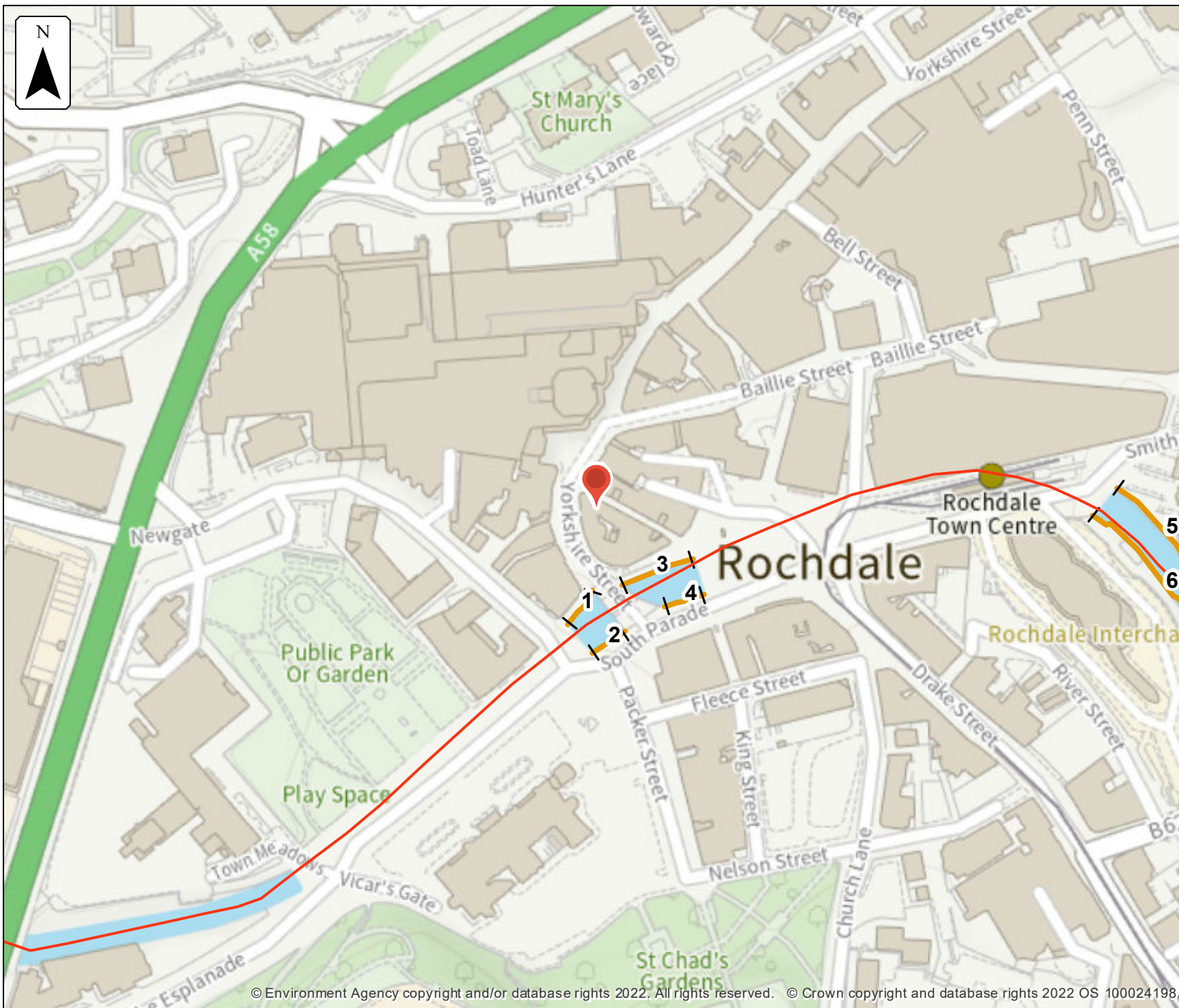
Flood Event Code	Name	Start Date	End Date	Source of Flooding	Cause of Flooding
4191	Rochdale Town Centre	26/12/2015	26/12/2015	Main River	channel capacity exceeded (no raised defences)
4306	Yorkshire Street	16/03/2019	16/03/2019	Main River	channel capacity exceeded (no raised defences)
4331	ROCH	28/07/2019	31/07/2019	Main River	channel capacity exceeded (no raised defences)

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.



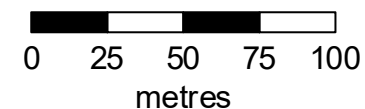
Flood defences

Location (easting/northing)
389623/413418

Scale
1:2,500

Created
9 Jun 2022

-  Selected location
-  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	477100	Wall			119.77	119.77	119.77
2	477101	Wall			120.20	120.20	120.20
3	477118	Wall			119.12	119.12	119.12
4	477099	Wall			119.44	119.44	119.44
5	104220	Wall	100	Very good	119.97	119.60	
6	62723	Engineered High Ground	100	Good	118.79	119.55	

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

Climate change

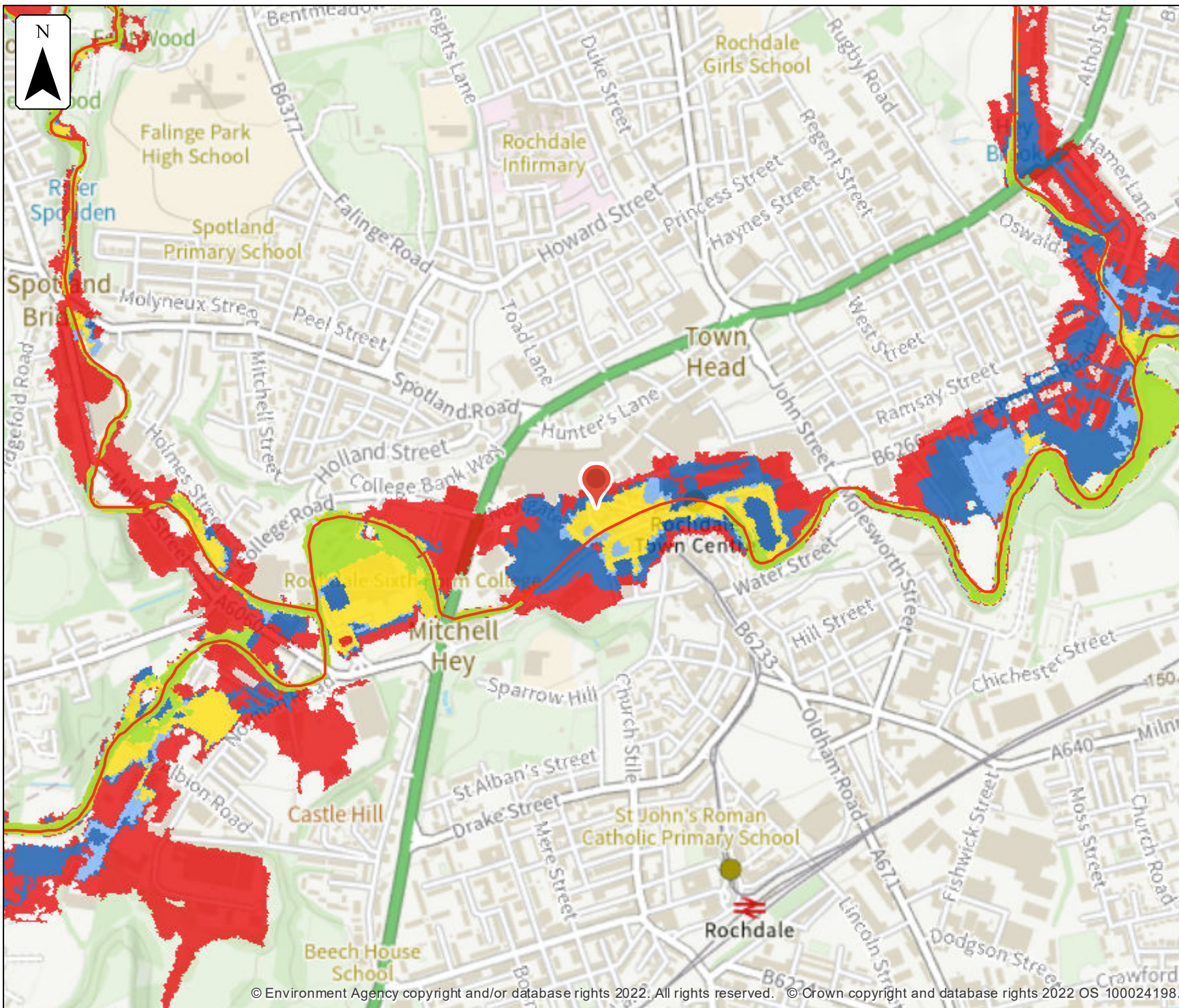
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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
- 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)
389623/413418

Scale Created
1:10,000 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

 Selected location

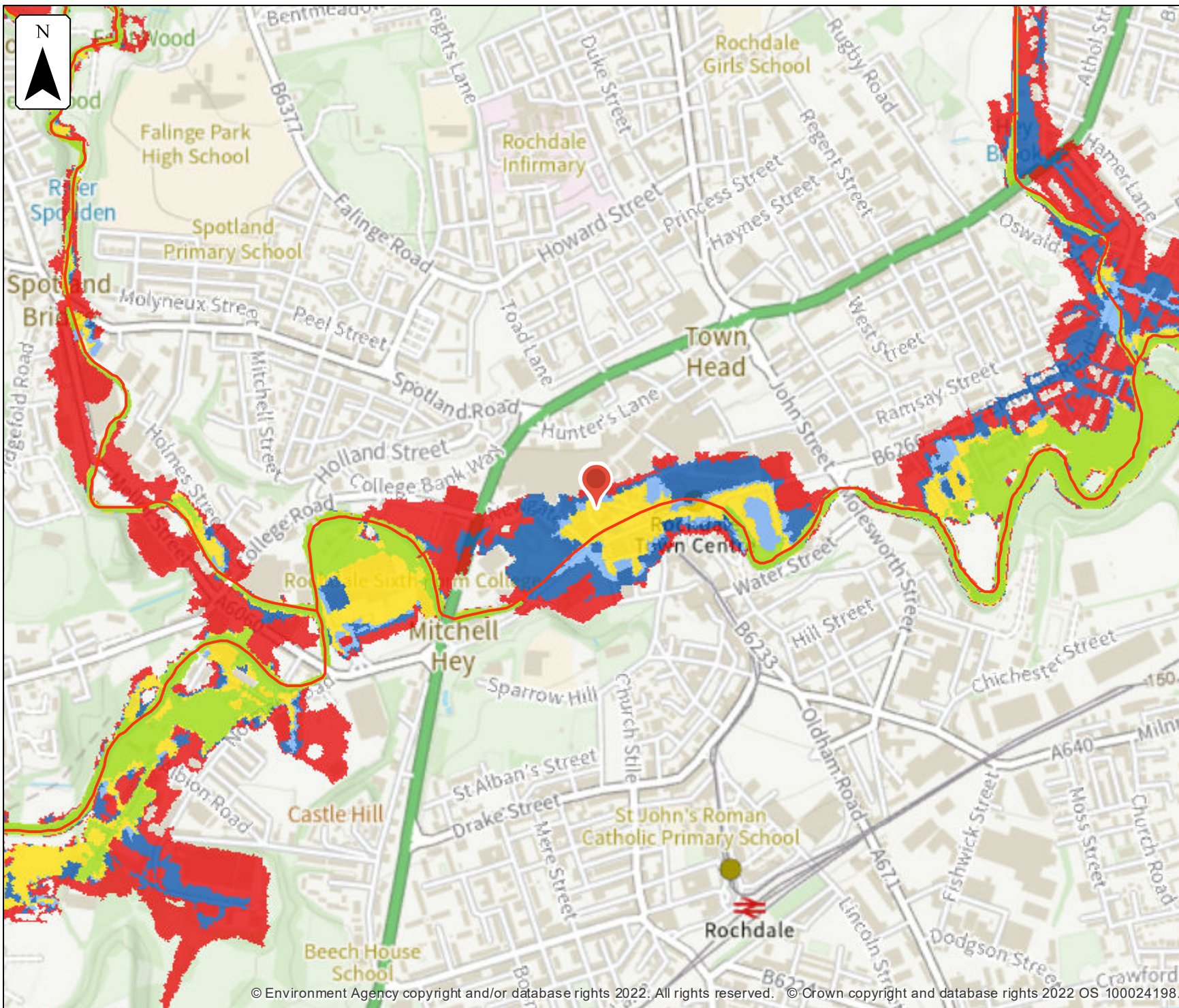
 Main river

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


0 100 200 300 400 500
metres



Defences removed modelled fluvial extent

Location (easting/northing)
389623/413418

Scale Created
1:10,000 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

 Selected location

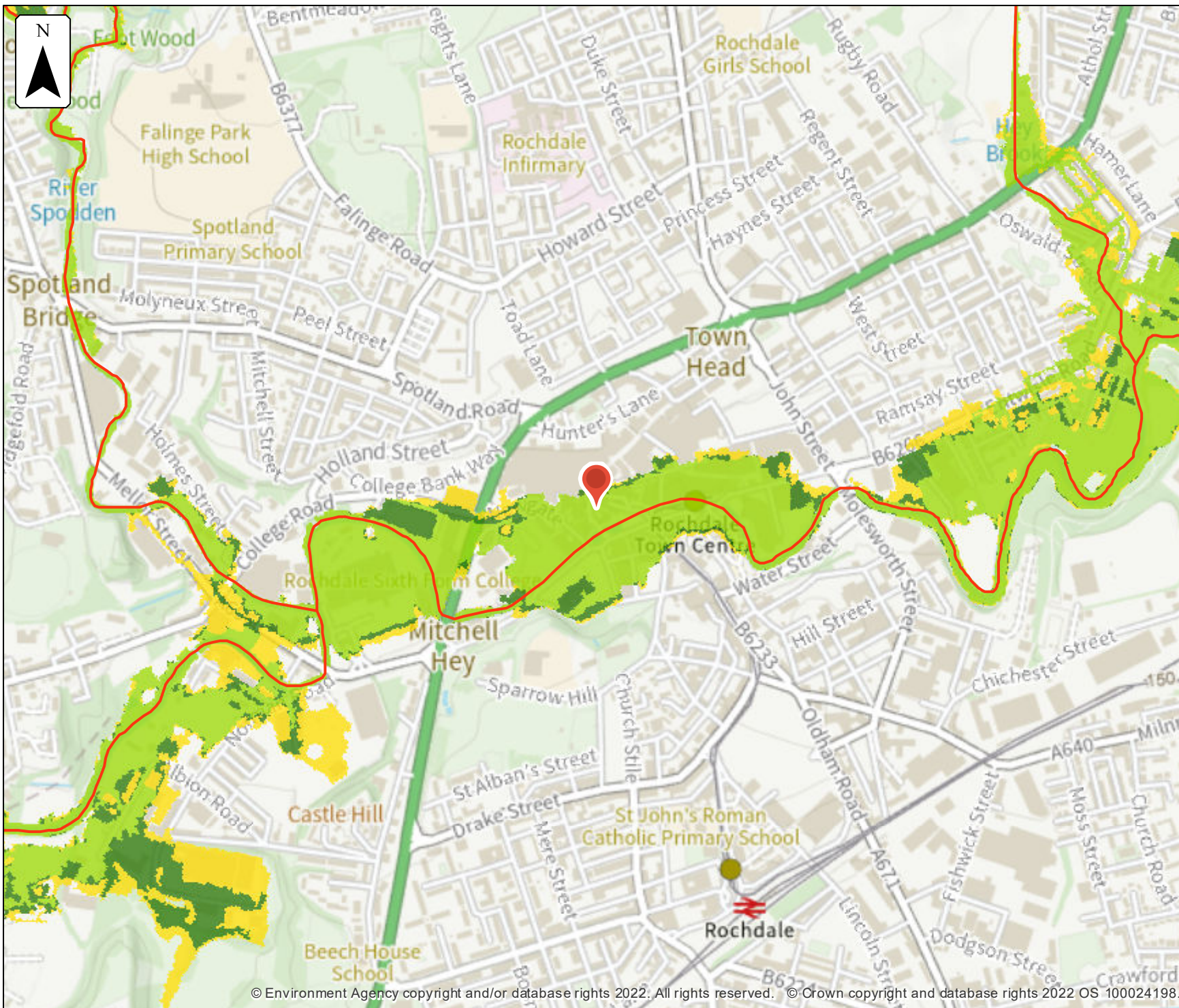
 Main river

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


0 100 200 300 400 500
metres



Defended climate change modelled fluvial extent

Location (easting/northing)
389623/413418

Scale Created
1:10,000 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

 Selected location

 Main river

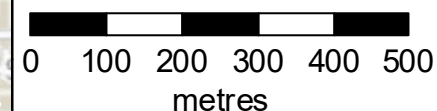
Modelled flood extent

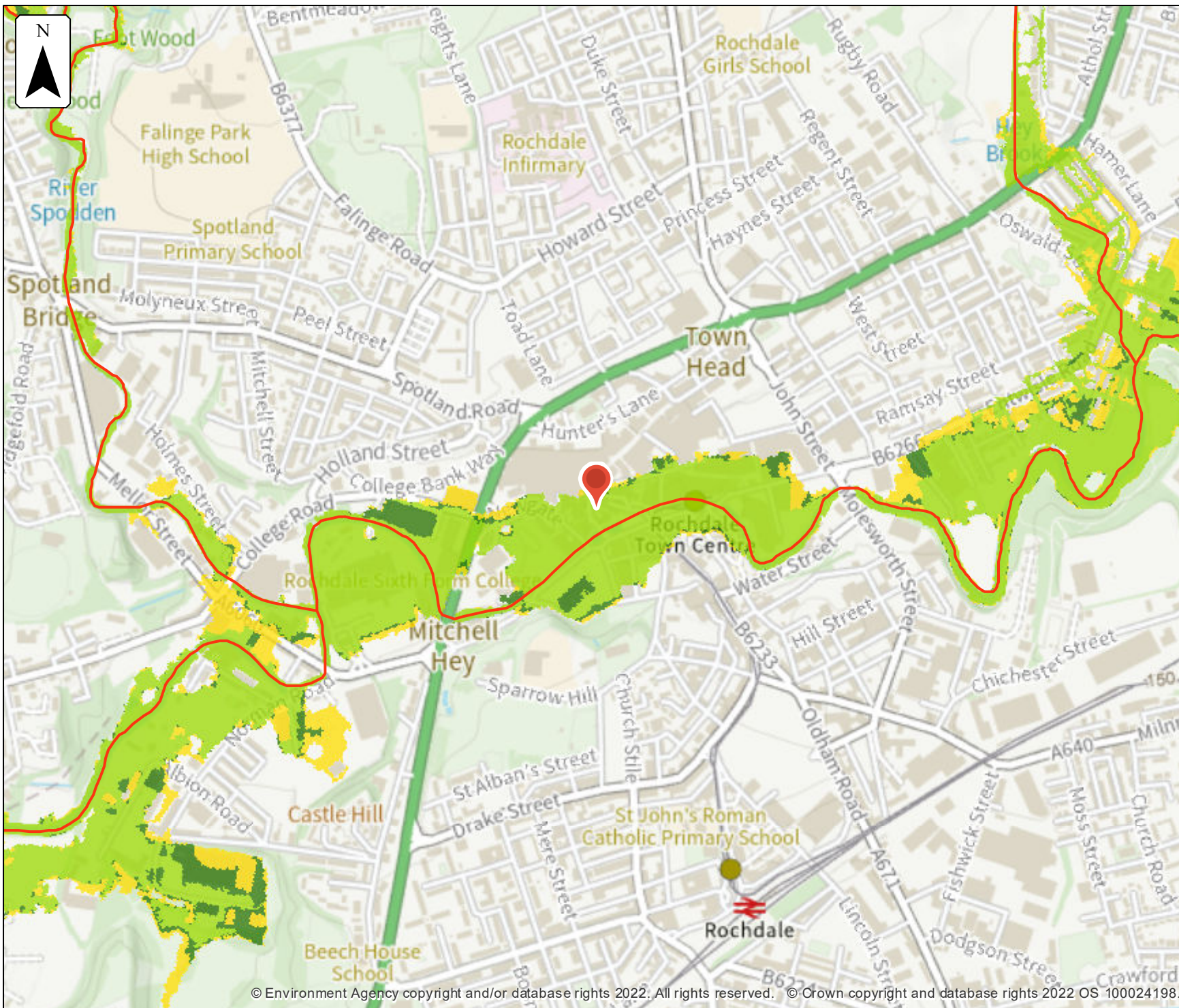
 1.0% AEP (+20%)

 1.0% AEP (+35%)

 1.0% AEP (+70%)

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





Defences removed climate change modelled fluvial extent

Location (easting/northing)
389623/413418

Scale Created
1:10,000 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

 Selected location

 Main river

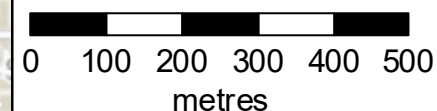
Modelled flood extent

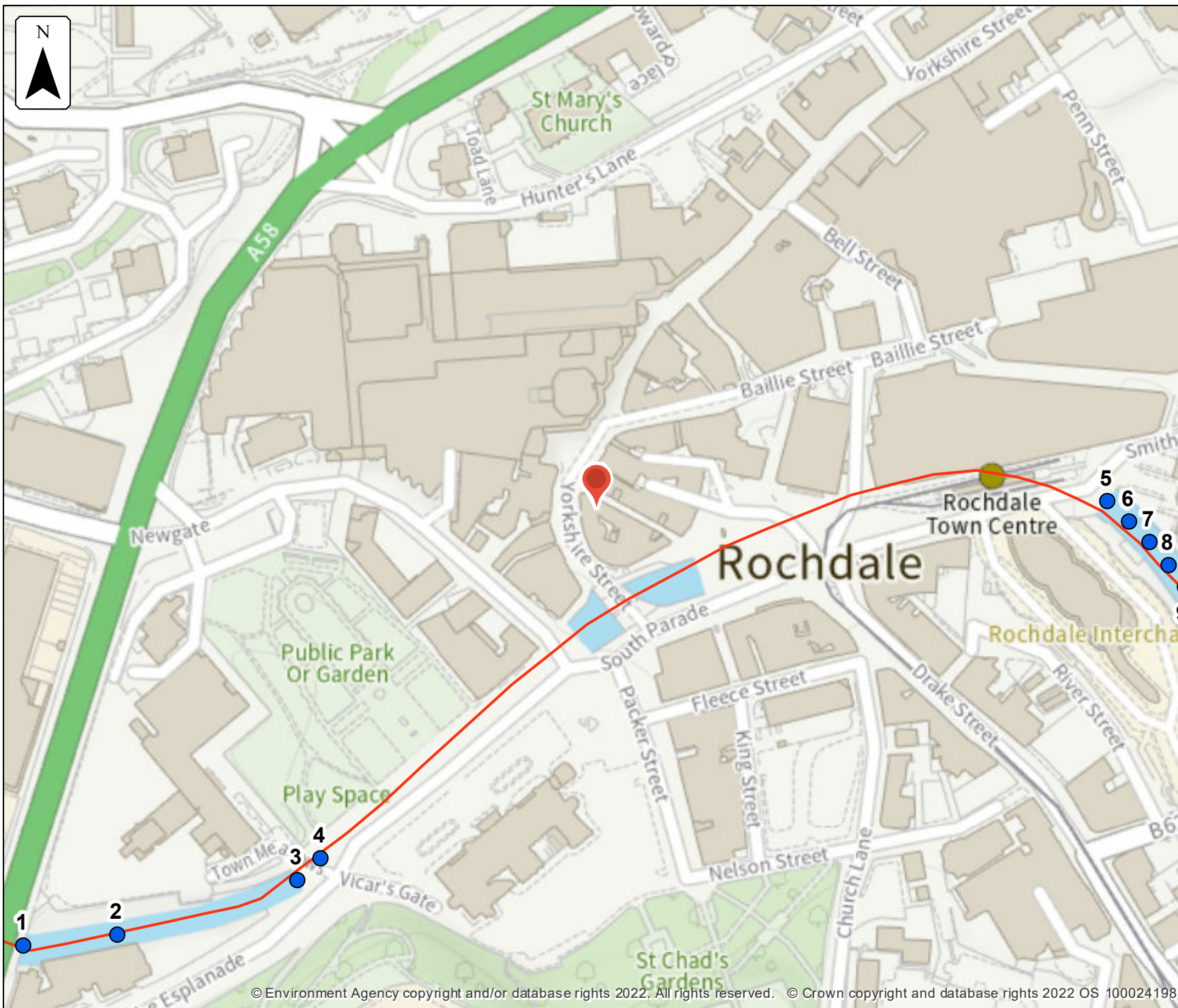
 1.0% AEP (+20%)

 1.0% AEP (+35%)

 1.0% AEP (+70%)

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





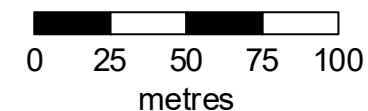
Defended modelled fluvial node locations

Location (easting/northing)
389623/413418

Scale Created
1:2,500 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

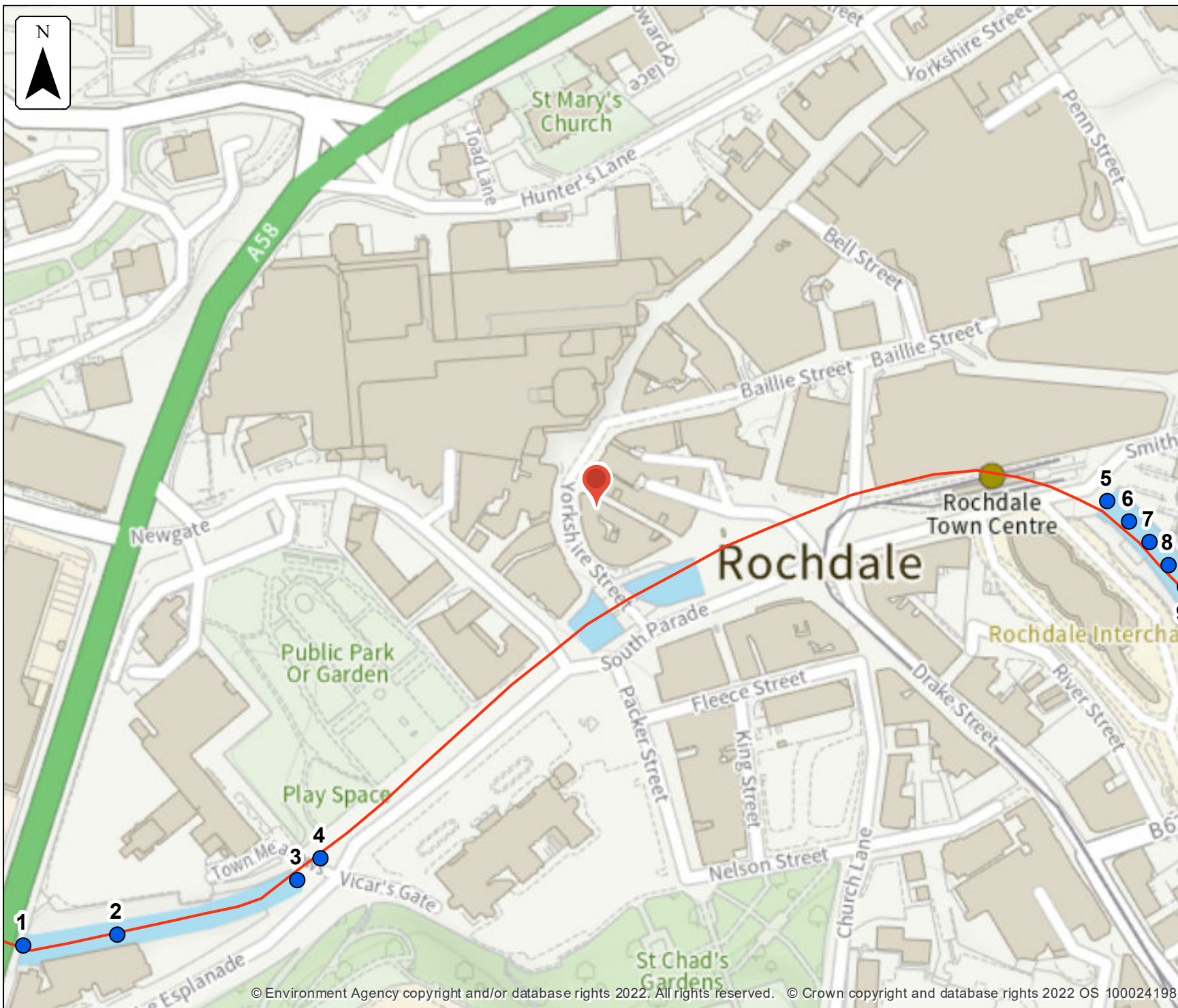
Defended

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	237598	389345	413205	118.25	58.14			118.65	70.18	118.74	75.47	118.96	87.84	119.54	103.39
2	101958	389390	413210	118.25	58.15			118.64	70.18	118.73	75.10	118.94	87.83	119.52	103.45
3	22640	389477	413237	118.43	58.14			118.81	70.17	118.90	74.25	119.14	87.83	119.70	99.34
4	169384	389489	413247	118.46	58.14			118.84	70.17	118.94	74.22	119.18	87.83	119.73	99.36
5	75472	389871	413421	119.39	58.14			120.04	70.18	120.16	73.66	120.91	87.82	121.84	99.43
6	348519	389881	413410	119.40	58.14			120.05	70.66	120.16	74.20	120.98	77.93	121.88	95.46
7	138966	389891	413401	119.41	58.15			120.06	70.79	120.18	74.17	120.99	78.07	121.91	89.29
8	194352	389900	413389	119.43	58.15			120.08	70.65	120.19	73.53	121.0	76.61	121.93	84.44
9	289728	389908	413379	119.44	58.15			120.09	69.21	120.21	72.18	121.01	76.45	121.94	83.26

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.



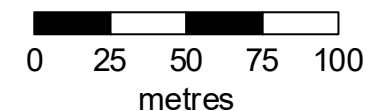
Defences removed modelled fluvial node locations

Location (easting/northing)
389623/413418

Scale Created
1:2,500 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

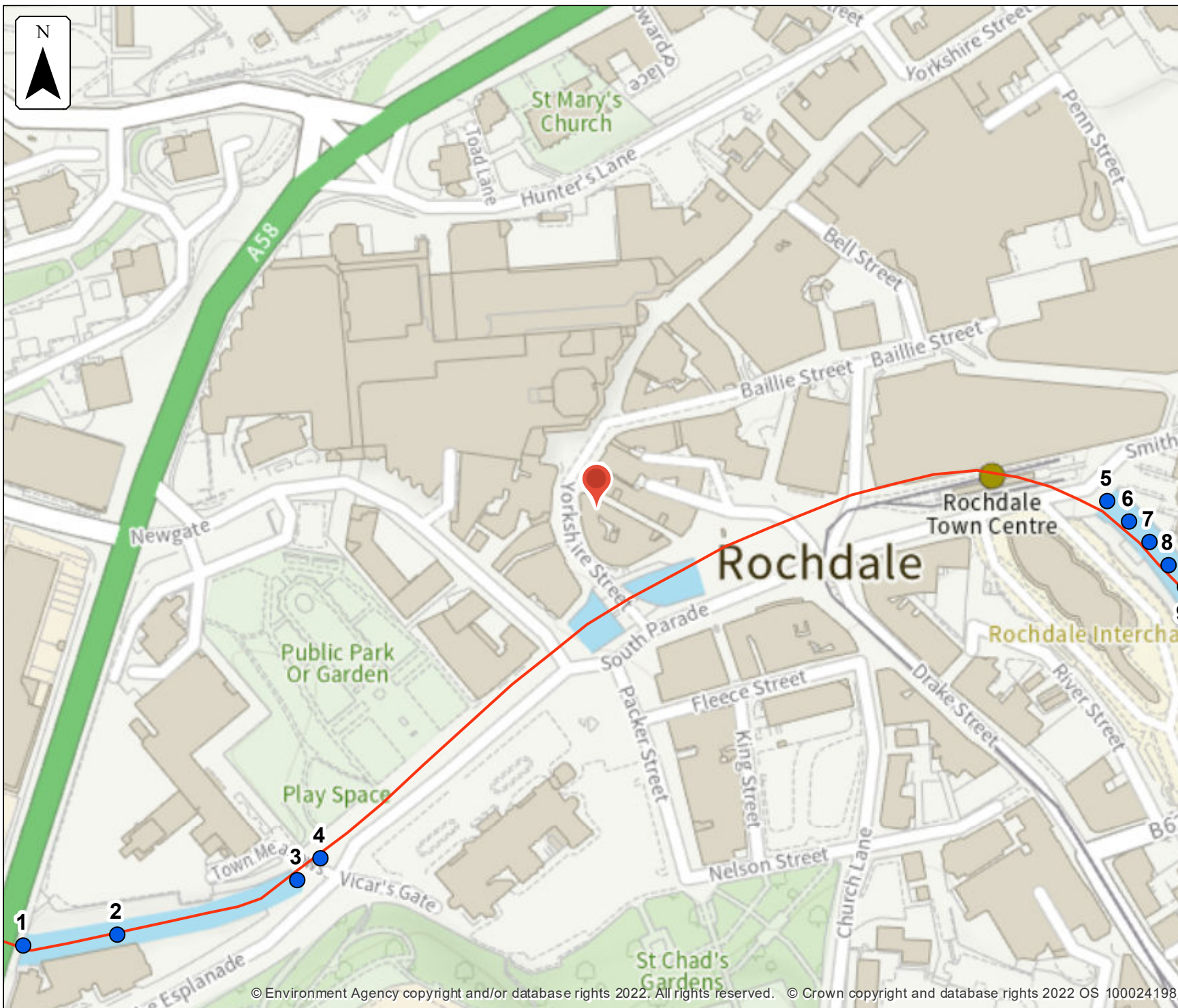
Defences removed

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	237598	389345	413205	118.20	57.81			118.62	71.66	118.73	77.44	118.98	91.40	119.52	104.40
2	101958	389390	413210	118.20	57.81			118.61	71.66	118.72	77.44	118.95	91.40	119.49	104.43
3	22640	389477	413237	118.39	57.81			118.80	71.66	118.91	77.43	119.16	91.40	119.68	100.39
4	169384	389489	413247	118.42	57.81			118.83	71.66	118.95	77.43	119.20	91.40	119.71	100.41
5	75472	389871	413421	119.35	57.81			120.08	71.66	120.39	77.43	121.08	91.39	121.84	100.49
6	348519	389881	413410	119.36	57.81			120.10	71.45	120.43	74.95	121.16	80.85	121.88	97.57
7	138966	389891	413401	119.38	57.81			120.11	71.55	120.44	74.91	121.16	80.52	121.90	89.49
8	194352	389900	413389	119.39	57.81			120.12	71.64	120.45	74.86	121.17	80.35	121.92	87.61
9	289728	389908	413379	119.40	57.81			120.13	71.73	120.45	75.24	121.18	80.74	121.93	87.24

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.



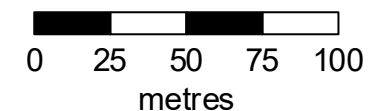
Defended climate change modelled fluvial node locations

Location (easting/northing)
389623/413418

Scale Created
1:2,500 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

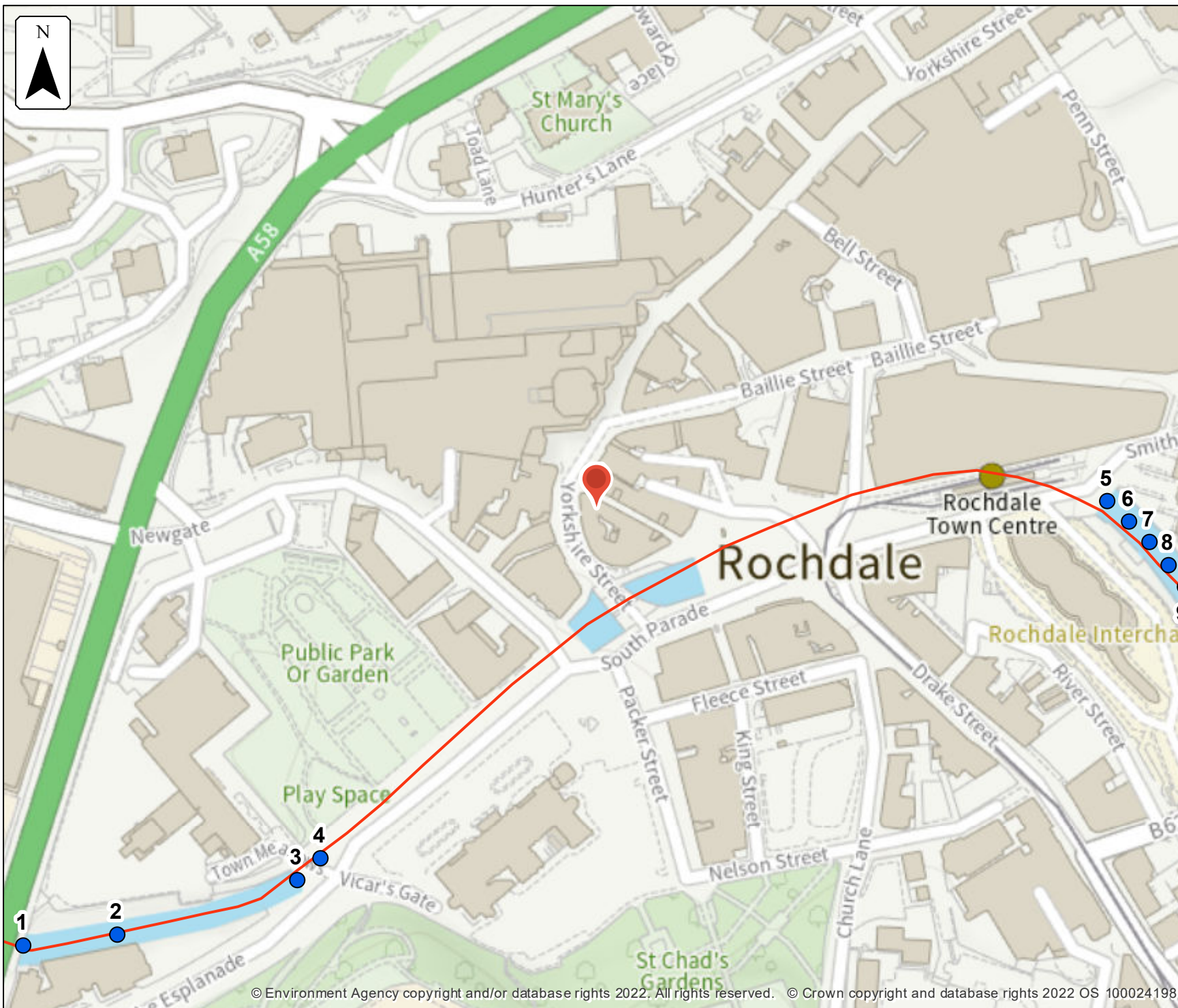
Defended climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+20%)		1.0% AEP (+35%)		1.0% AEP (+70%)	
				Level	Flow	Level	Flow	Level	Flow
1	237598	389345	413205	119.06	93.83	119.27	98.97	119.69	109.0
2	101958	389390	413210	119.04	93.84	119.25	98.99	119.67	109.01
3	22640	389477	413237	119.24	93.84	119.44	97.83	119.89	100.09
4	169384	389489	413247	119.28	93.84	119.47	97.83	119.91	100.13
5	75472	389871	413421	121.24	93.85	121.56	97.87	122.01	100.32
6	348519	389881	413410	121.33	79.40	121.64	79.67	122.04	89.45
7	138966	389891	413401	121.34	79.41	121.65	79.61	122.06	83.33
8	194352	389900	413389	121.35	77.61	121.66	77.75	122.08	79.94
9	289728	389908	413379	121.35	77.48	121.67	77.62	122.09	79.12

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.



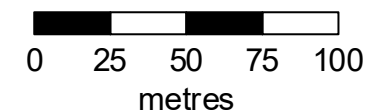
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
389623/413418

Scale Created
1:2,500 9 Jun 2022

Model name
**Rochdale and
Littleborough 2013**

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

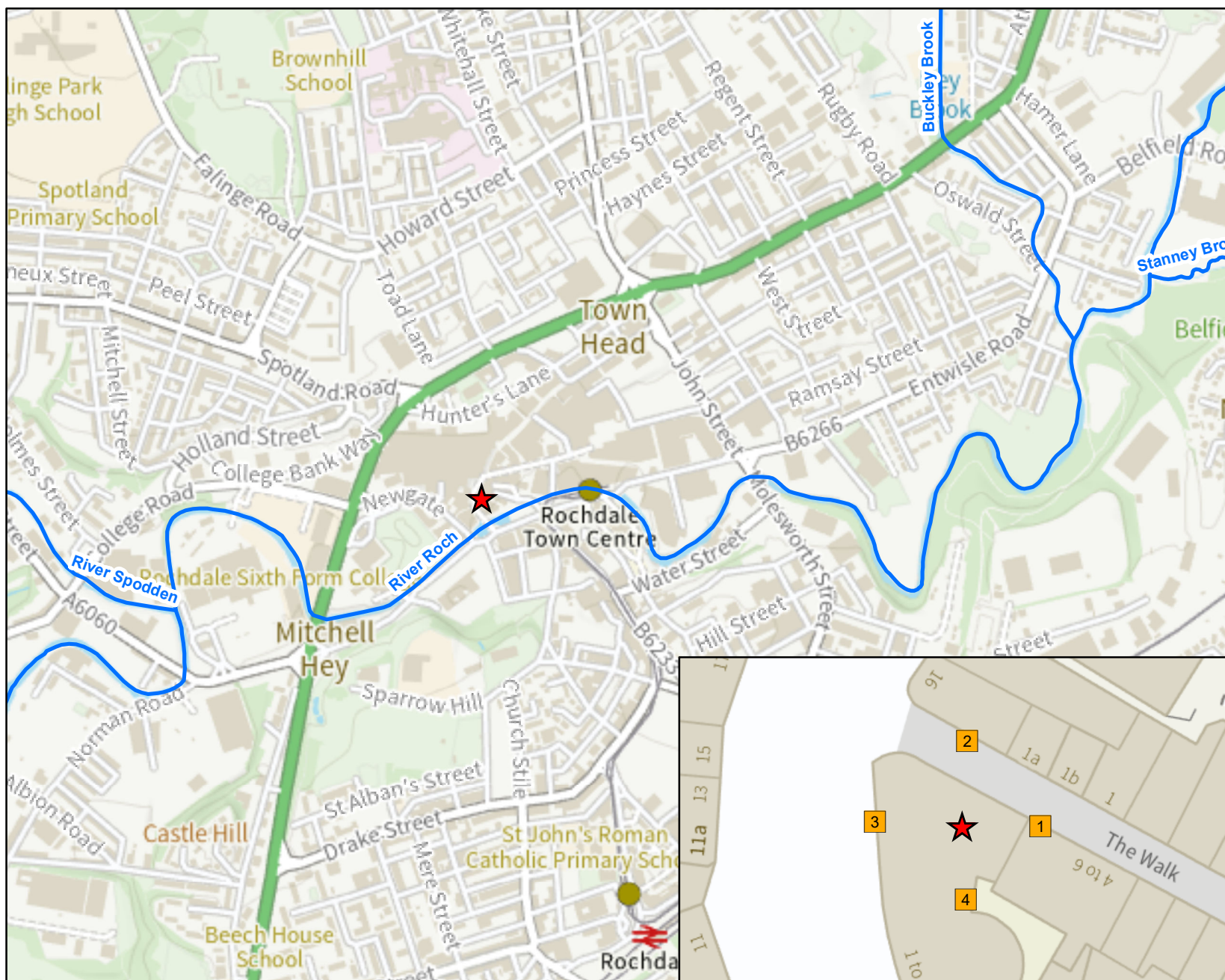
Label	Modelled location ID	Easting	Northing	1.0% AEP (+20%)		1.0% AEP (+35%)		1.0% AEP (+70%)	
				Level	Flow	Level	Flow	Level	Flow
1	237598	389345	413205	119.07	95.49	119.18	98.77	119.48	105.44
2	101958	389390	413210	119.05	95.51	119.15	98.79	119.46	105.47
3	22640	389477	413237	119.25	95.54	119.36	97.99	119.67	100.21
4	169384	389489	413247	119.30	95.54	119.40	97.99	119.70	100.23
5	75472	389871	413421	121.32	95.56	121.51	98.0	121.84	100.32
6	348519	389881	413410	121.41	83.05	121.59	85.24	121.89	100.77
7	138966	389891	413401	121.42	82.96	121.61	84.96	121.91	91.29
8	194352	389900	413389	121.43	82.47	121.61	83.91	121.92	88.51
9	289728	389908	413379	121.43	82.57	121.62	83.60	121.93	87.92

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.

2D Measurement Map



1:10,001



Legend

-  Site Location
-  2D Measurements
-  Main River

					Undefended			Defended		
Map Reference	Model Node Reference	Easting	Northing	Data	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow
1	2D Measurements	389630	413419	Modelled Water Level (m aodN)	120.08	121.59	121.88	119.94	121.64	122.01
2		389623	413426	Modelled Water Level (m aodN)	120.08	121.59	121.88	119.94	121.64	122.01
3		389615	413419	Modelled Water Level (m aodN)	120.08	121.60	121.88	119.94	121.64	122.01
4		389623	413412	Modelled Water Level (m aodN)	120.08	121.60	121.88	119.94	121.64	122.01

Model data taken from Rochdale and Littleborough 2013 Study

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

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