



Project Title: 00612 33 Sackville Street

Product: Level 3 Flood Risk Assessment

Date: 15 January 2026

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Report Revision Log

Report Reference	Date Issued	Issued To	Notes
00612	15/01/2026	Client	

1. INTRODUCTION

1.1. PURPOSE OF THE REPORT

FloodPlan have been commissioned on behalf of M. Rashid to produce a Flood Risk Assessment for 33 Sackville Street, Ravensthorpe, Dewsbury, WF13 3BX. This assessment has been conducted with the understanding that the document will be used as part of a planning permission proposal by M. Rashid.

1.2. LOCATION OF SUBJECT SITE

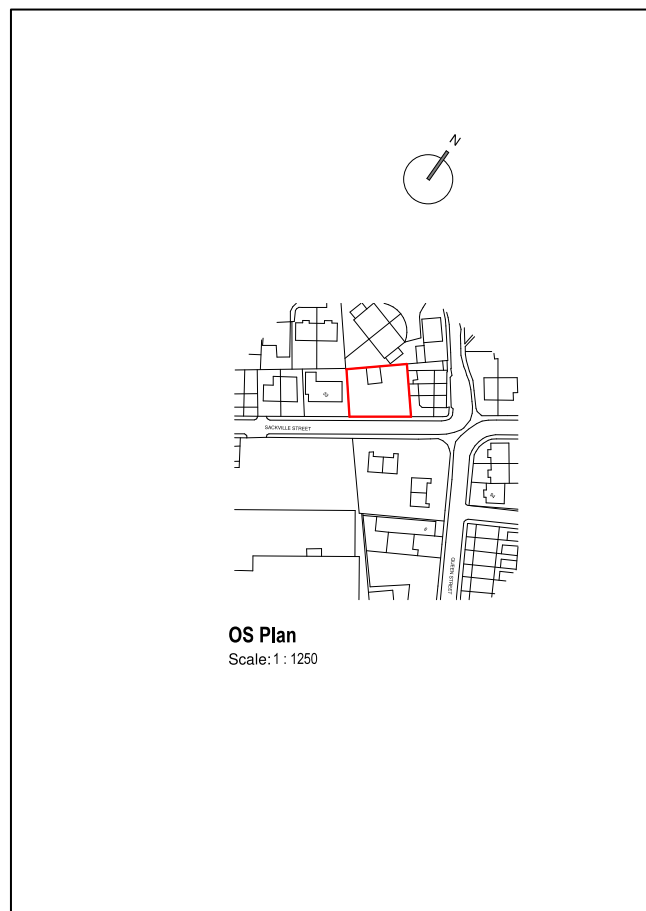


Figure 1: Site Location

1.3. SITE PROPOSALS

The client is the construction of a pair of semi-detached dwellings on the proposed site.

2. INTRODUCTION TO NPPF

2.1. INTRODUCTION TO NPPF

The National Planning Policy Framework (NPPF) document provides guidance to local planning authorities to ensure the effective implementation of the planning policy. The policy seeks to direct development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. For these purposes:

- “areas at risk of flooding” means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency.
- “flood risk” means risk from all sources of flooding – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers, and drainage systems, and from reservoirs, canals and lakes and other artificial sources.

Flood risk (from river and sea) are categorised into one of the below:

2.2. FLOOD RISK CLASSIFICATIONS

Flood Zone	Probability of flooding
Zone 1	Low probability
Zone 2	Medium probability
Zone 3a	High probability
Zone 3b	Functional Floodplain

2.3. FLOOD RISK VULNERABILITY CLASSIFICATION

NPPF categorises land by vulnerability. A summary of categories can be seen below:

Vulnerability Class	Infrastructure
Essential Infrastructure	Power stations, water treatment works, wind turbines etc.

Highly vulnerable	Police stations, basement dwellings, caravans, mobile homes etc
More vulnerable	Hospitals, residential buildings, landfill sites, drinking establishments etc
Less Vulnerable	Emergency services stations, shops and building that offer professional services etc
Water compatible development	Pumping stations, docks, marinas etc

2.4. SUITABLE DEVELOPMENT MATRIX

The below table outlines the suitable development type for the flood zone classification assigned by the Environment Agency flood maps.

Flood risk vulnerability classification	Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Zone 1					
Zone 2			Exception Test Required		
Zone 3a	Exception Test Required			Exception Test Required	
Zone 3b Functional floodplain	Exception Test Required				

Figure 2: Suitable Development Matrix

Key: Blue Development is appropriate; Red Development should not be permitted; Green Development is appropriate with the passing of an Exception Test.

3. NPPF SITE ASSESSMENT

3.1. FLOOD ZONE CLASSIFICATION

As per Figure 3, the site is affected by flood zone 2.

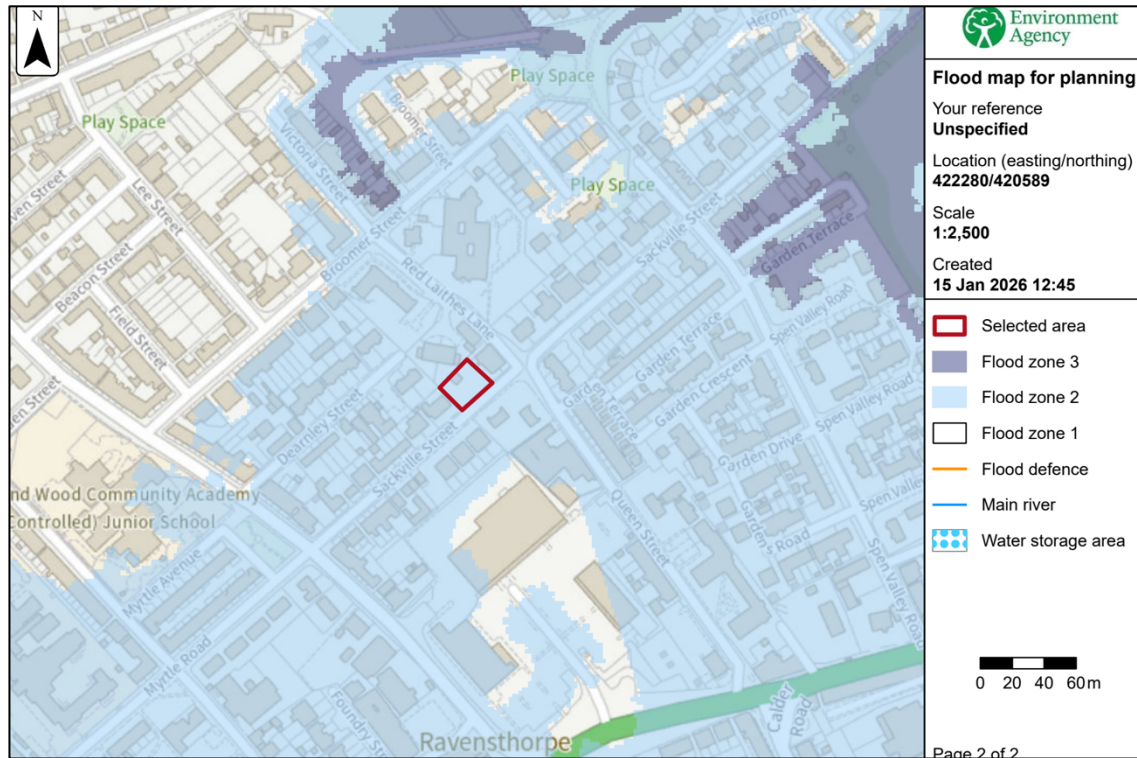


Figure 3: Flood Zone

3.2. LAND VULNERABILITY CLASSIFICATION

The development proposes the construction of residential use dwellings on land currently used as an amenity area. Amenity areas are classified as ‘less vulnerable’ development. Residential use dwellings are classified as ‘more vulnerable’ development. The proposals increase the vulnerability classification of the land as per NPPF.

3.3. SITE SUITABILITY (NPPF)

‘More vulnerable’ development is suitable for flood zone 2, as per Figure 2.

4. SITE FLOOD RISK

4.1. THIRD PARTY FLOOD RISK DATA SUMMARY

A 'Groundsure' flood report has been acquired for advising this assessment. The full report can be found in Appendix B. The main findings are summarised below:

Type of Risk	Assessment of Risk
Overall Flood Risk	Moderate-High
Rivers and the Sea	Low
Surface Water	Significant
Groundwater	Low
Historic Flood	Not Identified
Flood Defences	No
FloodScoreTM – insurance rating	High

4.2. SURFACE WATER FLOODING

The Environment Agency surface water flood map Figure 4, shows the location of the dwelling is located as being at a 'low' risk of flooding. The site is also identified as having a 'low' risk of flooding for 2040-2060.

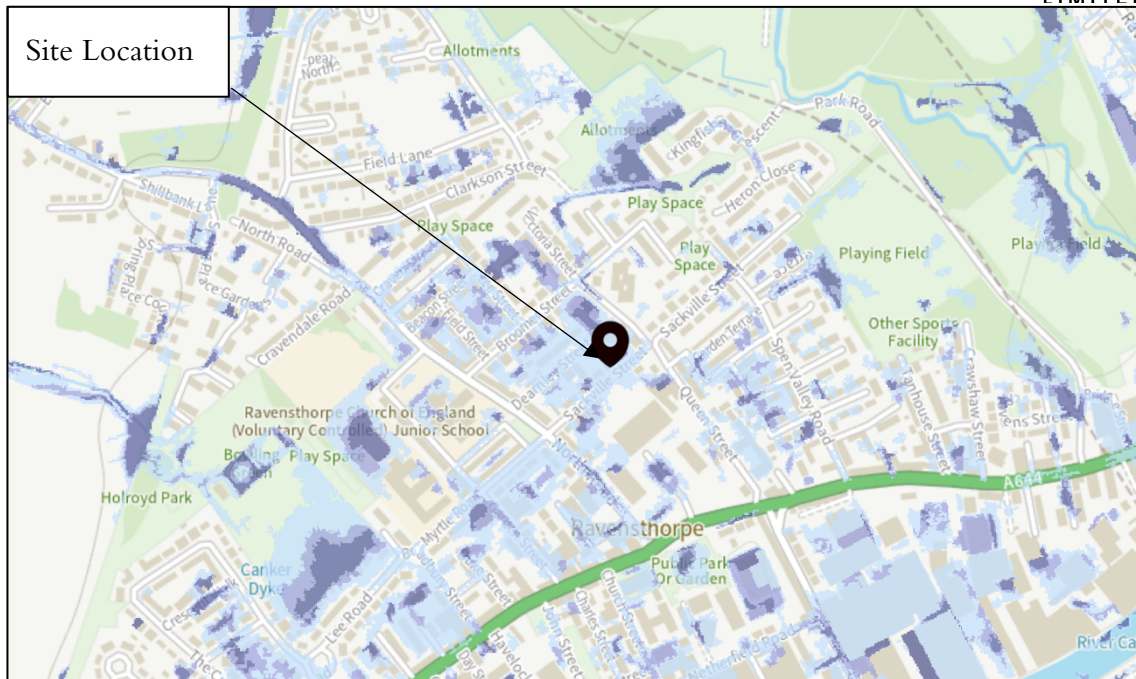


Figure 4: EA Surface Water Flood Map

Where the dark blue shaded area denotes high risk of surface water flooding; the light blue denotes low risk with white areas having very low risk of surface water flooding. The risk classification is comparable to the 'Groundsure' flood report.

4.3. TIDAL AND FLUVIAL FLOODING

The Environment Agency surface water flood map Figure 4, shows the location of the dwelling to be located within an areas identified as being at a 'low' risk of flooding. The site is also identified as having a 'low' risk of flooding for 2040-2060.

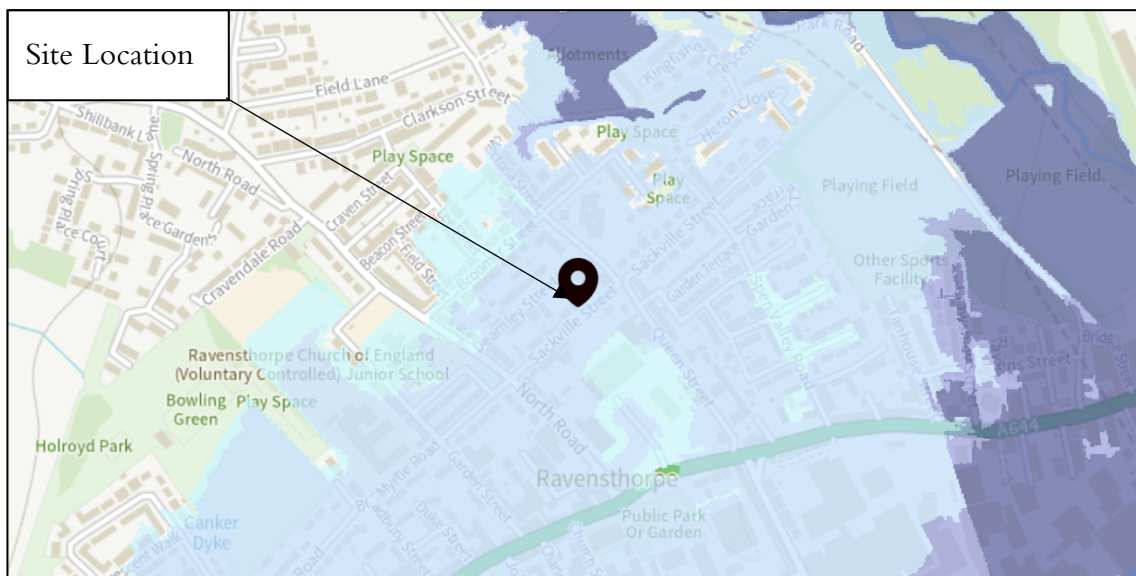


Figure 5: EA Tidal and Fluvial Flood Map

Where the dark blue shaded area denotes high risk of tidal and fluvial flooding; the light blue denotes low risk with the lightest blue areas having a very low risk of flooding.

4.4. TOPOGRAPHIC SURVEY

LiDAR downloaded on the 15th December 2025 identifies the site to have a ground level of circa 42.0mOD. Ground levels vary across the site. This report recommends a topographic survey be completed to verify levels.

4.5. FLOOD MODELLING DATA

As part of the commission, FloodPlan contacted the Environment Agency for flood modelling outputs to inform the report. The Environment Agency provided flood modelling outputs from the following studies

1. 2009 FIM River Spen
2. 2011 River Calder – Calder
3. 2015 Calder and Canals

Model	Undefended fluvial (Level mOD)	Undefended CC fluvial Level mOD)	Defended fluvial Level (mOD)	Defended CC fluvial Level (mOD)
2009 FIM River Spen	Unaffected	Unaffected	Unaffected	No Data
2011 River Calder – Calder	Unaffected	Affected (41.15)*	No Data	No Data
2015 Calder and Canals	Unaffected	No Data	Unaffected	Unaffected

* Figure taken from nearest Node Label 7 – 1%AEP(+20%) Defences Removed. The maximum flood level, 41.15mOD is a in channel reading. The direct impact to the site is not reported within the modelling outputs.

This report recommends the proposed dwellings have a ground floor finished flood level of 41.45mOD to allow for a flood free level with a 0.3m allowance for freeboard. Ground floor sleeping accommodation should be avoided.

4.6. GROUNDWATER FLOODING

The ‘Groundsure’ flood report indicates that the site has a low risk of groundwater flooding.

4.7. RESERVOIR FLOODING

There is a risk of flooding from reservoir sources.

4.8. HISTORIC FLOODING

The 'Groundsure' flood report and EA P4 dataset failed to identify any historic flood records.

5. FURTHER SITE ASSESSMENT

5.1. SITE ACCESS AND EGRESS ROUTES

Site access and egress may become severed during a defence breach scenario. This report recommends a flood evacuation plan is created and maintained.

Safe refuge may be available within the upper floors of a proposed dwellings.

5.2. FLOOD COMPENSATION

The proposals are not expected to displace floodwater locally during the defended extreme flood event.

5.3. FLOOD WARNING AREAS

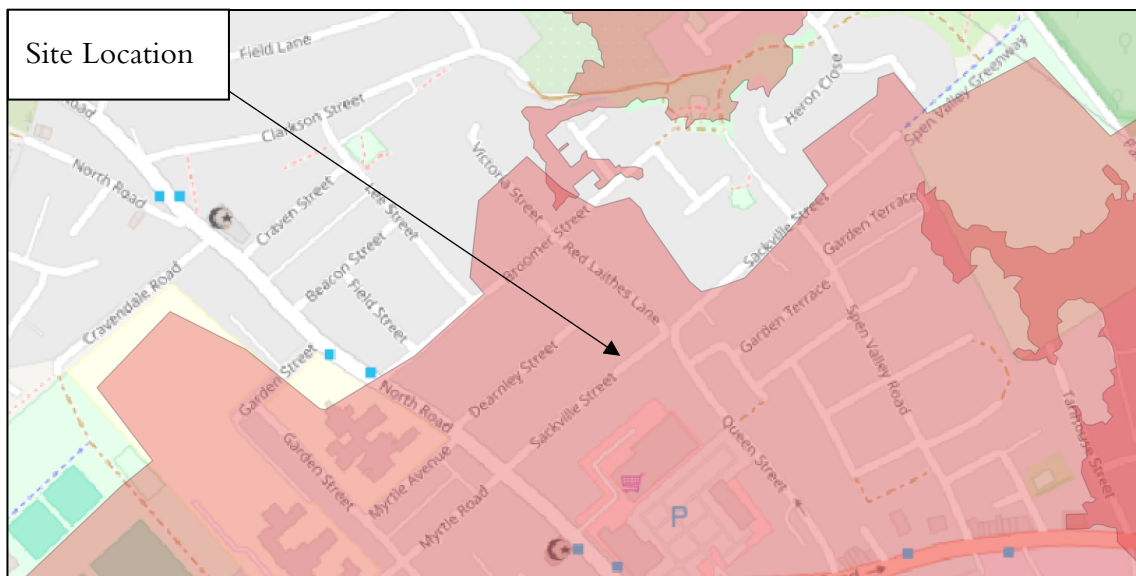


Figure 6: Flood Warning Areas

The site benefits from EA flood warning areas.

5.4. AWARENESS OF FLOOD RISK

The developer should be aware that the site is not immune from flooding. It is recommended that all residents take the opportunity to develop a flood evacuation plan and emergency and non-emergency plans.

6. FINDINGS AND RECOMMENDATIONS

6.1. FINDINGS

The client is the construction of a pair of semi-detached dwellings on the proposed site. 'More vulnerable' developments are suitable for flood zone 2 as per NPPF. The site and access are mapped to experience fluvial flood risk during extreme flood events.

6.2. RECOMMENDATIONS

This report recommends the following be considered to lower the risk and/or consequences that flooding may cause to the proposed development:

- This report recommends a flood evacuation plan be created and maintained.
- A suitable SuDS drainage design should be incorporated
- A flood free ground floor FFL is recommended.
- Sub floors should be avoided

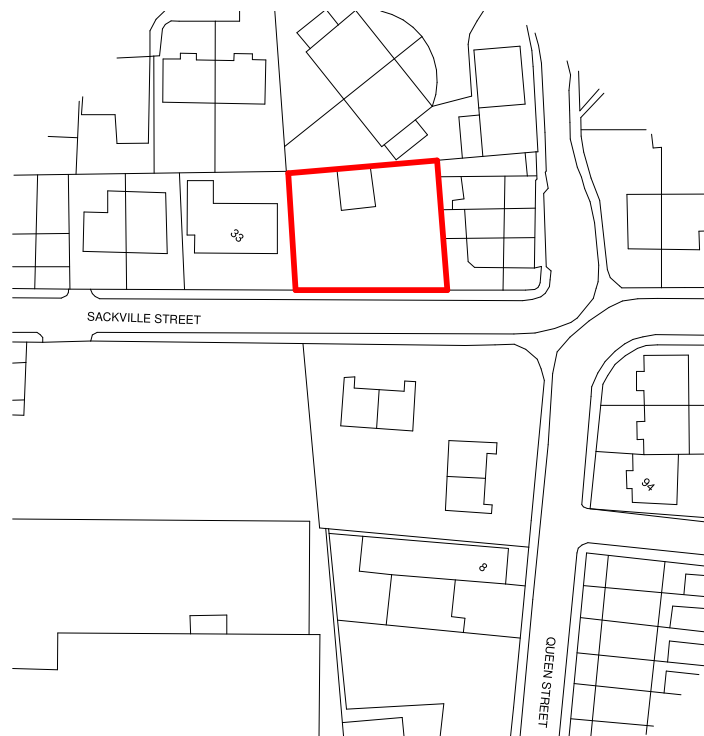
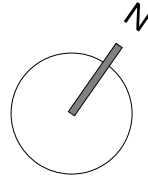
List of Appendices

Appendix A: Development Plan

Appendix B: Groundsure Flood Report

Appendix C: Flood Modelling Outputs

Appendix A: Development Plan



OS Plan

Scale: 1 : 1250

Appendix B: Groundsure Flood Report

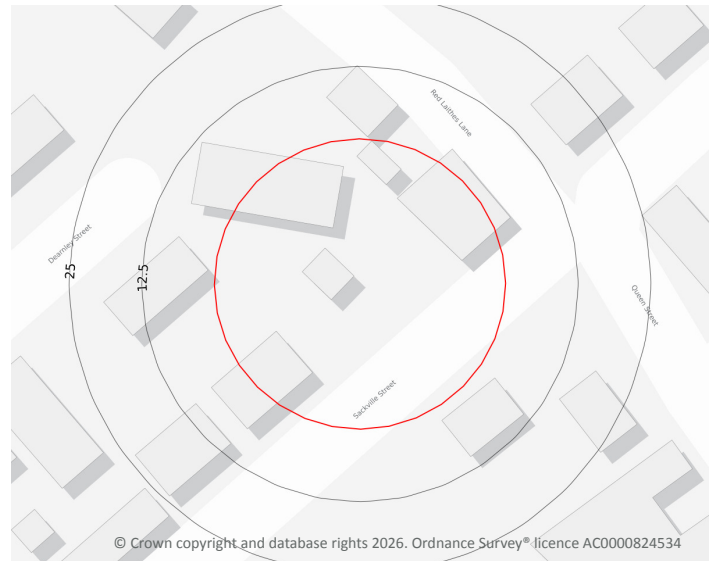
Overall Flood Risk



**MODERATE-
HIGH**

Groundsure Flood complies with relevant Law Society practice notes on flood risk in property transactions.

Site plan



Search Results



Rivers and the Sea

Low

[page 3 >](#)



Surface Water

Significant

[page 4 >](#)



Groundwater

Low



Historic Flood

Not identified



Flood Defences

No



FloodScore™ insurance rating

High

[page 6 >](#)

Full assessments for other environmental risks are available in additional Groundsure searches including the Groundsure Avista 7 in 1 report. Contact Groundsure or your search provider for further details.

Overview of findings and recommendations

To save you time when assessing the report, we only provide maps and data tables of features within the search radius that we have identified to be of note. These relate to environmental risks that may have liability implications, affect insurance premiums, property values and/or a lender's willingness to lend.

You can view the fully comprehensive library of information we have searched on [page 5](#) >.



Flooding

Flooding

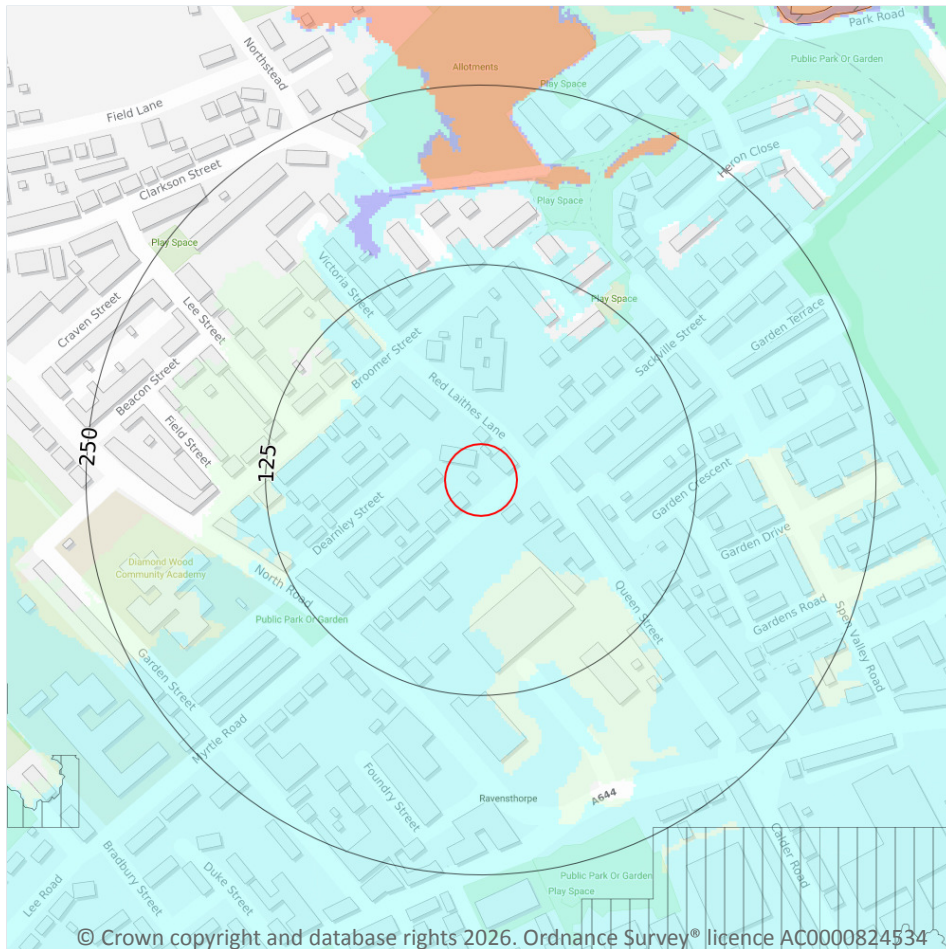
An elevated level of flood risk has been identified at the property.

Next steps for consideration:

- Ensure buildings and contents insurance covering flood risk is available and affordable;
- Make enquiries of the seller (e.g. in the TA6) and other nearby residents on any flooding that may have occurred;
- Sign up to the government's Flood Warnings and Alerts <https://www.gov.uk/sign-up-for-flood-warnings> ↗;
- Create a flood plan <https://www.gov.uk/prepare-for-flooding> ↗;
- Investigate the various forms of flood resistance and resilience measures that will help protect your property in the event of a flood;
- If the property has recently been constructed, the risk assessment within this report will not take into account measures put in place by the developer. This should be factored in when making any purchase decisions;
- The assessment is based on the highest flood risk found within the site boundary. Whilst the maps within the report provide a visual representation, we are able to provide a flood reassessment report breaking down the risk to the buildings and selected structures together with the risk to the site as a whole. Please contact us at info@groundsure.com ↗.



Flooding / Risk of flooding from rivers and the sea



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Reduced river/sea flooding risk due to defences
- Flood Defences

Risk of flooding from rivers and the sea

The property has a Low chance of flooding in any given year, according to Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) data. This could cause problems with insuring the property against flood risk. However, if built before 2009, it may be eligible for insurance assistance from the Flood Re scheme: www.floodre.co.uk/ ↗

RoFRaS/FRAW assesses flood risk from rivers and the sea in England and Wales, using local data and expertise. It shows the chance of flooding from rivers or the sea, taking account of flood defences and the condition those defences are in. The model uses local water level and flood defence data to model flood risk. [Click here](#) ↗ for explanation of the levels of flood risk.

Please see [page 2](#) > for further advice.

This data is sourced from the Environment Agency and Natural Resources Wales.

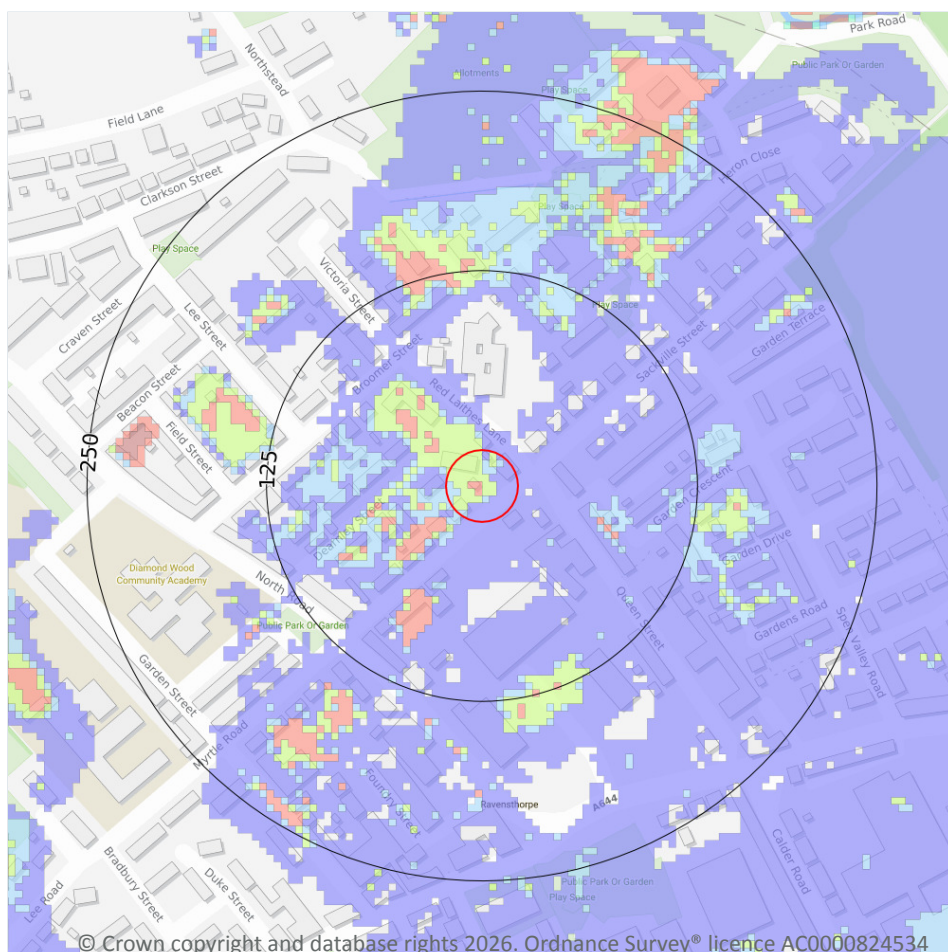


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Ref: CMAPS-CM-1258414-60191-150126
Your ref: CMAPS-CM-1258414-60191-150126
Grid ref: 422279 420591

Flooding / Surface water flood risk



— Site Outline
Search buffers in metres (m)

Surface water flood risk

- Highly significant
- Significant
- High
- Moderate to high
- Moderate
- Low to moderate
- Low

Surface water flood risk

The property is likely to be prone to flooding following extreme rainfall, which may have an impact on insuring the property against flood risk. However, if built before 2009, it may be eligible for insurance assistance from the Flood Re scheme: www.floodre.co.uk/ ➔

The area in which the property is located has been assessed to be at a Significant risk of surface water flooding. This area is considered to have a 1 in 30 probability of surface water flooding due to rainfall in a given year to a depth of between 0.3m and 1.0m. However, as is the case with probability statistics and predictions, this information should be used as a guideline only. The area may flood several years in a row, or not at all for many years. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

These risk calculations are based on Ambiantal Risk Analytics maps.



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Grid ref: 422279 420591

Datasets searched

This is a full list of the data searched in this report. If we have found results of note we will state "Identified". If no results of note are found, we will state "Not identified". Our intelligent filtering will hide "Not identified" sections to speed up your workflow.

Flooding	
Risk of flooding from rivers and the sea	Identified
Flood storage areas: part of floodplain	Not identified
Historical flood areas	Not identified
Reduction in Risk of Flooding from Rivers and Sea due to Defences	Not identified
Flood defences	Not identified
Surface water flood risk	Identified
Groundwater flooding	Not identified



Methodologies and limitations

Groundsure's methodologies and limitations are available here: knowledge.groundsure.com/methodologies-and-limitations ↗.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information in your Flood report. To find out who they are and their areas of expertise see www.groundsure.com/sources-reference ↗.

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- a charity with an annual income of less than £3 million;
- a Trust with a net asset value of less than £3 million.

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If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure.

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Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

COMPLAINTS PROCEDURE: If you want to make a complaint, we will:

- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:

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↗ If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk ↗ We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

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Grid ref: 422279 420591

Appendix C: Flood Modelling Outputs

Environment
Agency

Customer reference number: D3PHKCYC7MEG

42.0m

Posts

Selected area

Main river

Site location

Scale 1:500

0 5 10 15 20 25 metres

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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)
- 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
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Kirklees District.

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

About the models used

Model name: 2009 FIM River Spen

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

Date: 1 March 2009

Model name: 2011 River Calder - Calder

Scenario(s): Defences removed fluvial, defences removed climate change fluvial

Date: 31 March 2011

Model name: 2015 Calder and Canals - downstream of Sowerby Bridge

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

Date: 31 March 2014

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 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 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



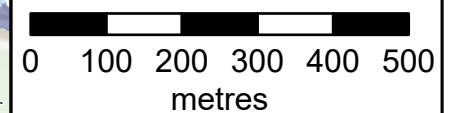
Flood map for planning

Location (easting/northing)
422280/420589

Scale
1:10,000

Created
1 Dec 2025

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



Past floods

Past flood events included in this document

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

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

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

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

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

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



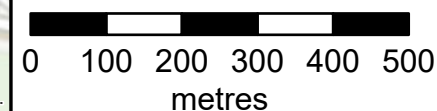
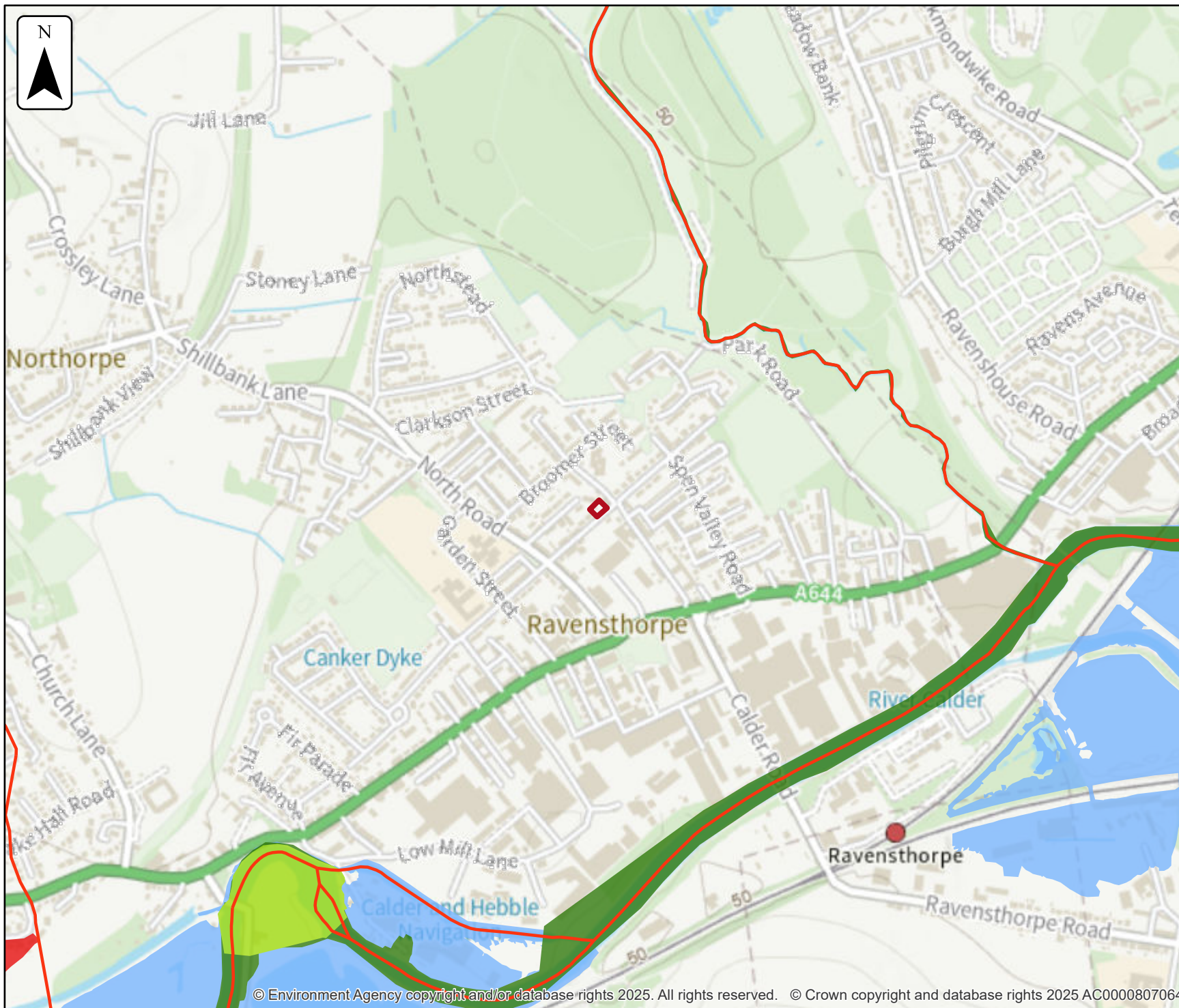
Past floods

Location (easting/northing)
422280/420589

Scale
1:10,000

Created
1 Dec 2025

-  Selected area
-  Main river
- Date of flood event
 -  February, 2022
 -  February, 2020
 -  March, 2019
 -  December, 2015
 -  February, 2002
 -  November, 2000



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
8 February 2020	19 March 2020	main river	channel capacity exceeded (no raised defences)	No
14 March 2019	17 March 2019	main river	unknown	No
25 December 2015	29 December 2015	main river	channel capacity exceeded (no raised defences)	No
10 February 2002	13 February 2002	main river	channel capacity exceeded (no raised defences)	No
6 November 2000	4 December 2000	main river	unknown	No

Flood defences and attributes

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

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

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

Use this information:

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



Flood defences

Location (easting/northing)
422280/420589

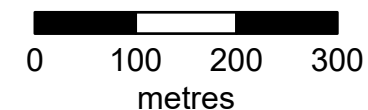
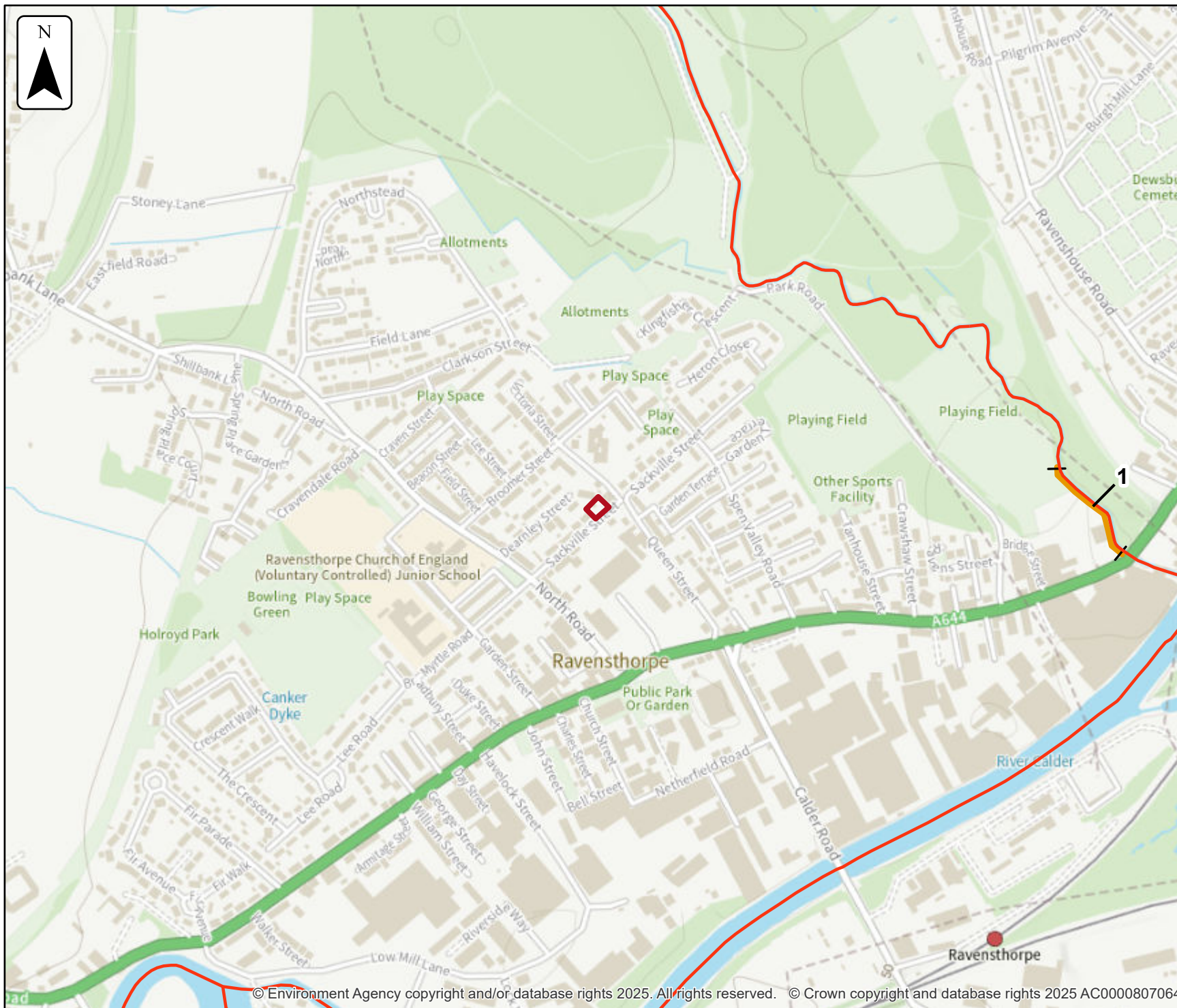
Scale

1:7,500

Created

1 Dec 2025

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	28350	Wall	50	Good	40.69	40.43	

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

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

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

Modelled scenarios

The following scenarios are included:

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



Defences removed climate change modelled fluvial extent

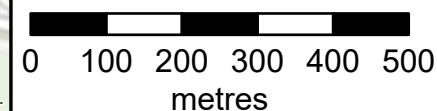
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
2009 FIM River Spen

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

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





Defences removed climate change modelled fluvial extent

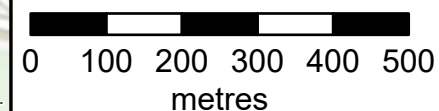
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2011 River Calder -
Calder**

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

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





Defences removed modelled fluvial extent

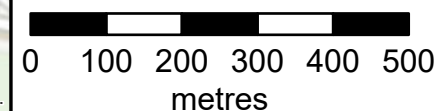
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
2009 FIM River Spen

-  Selected area
-  Main river
- Modelled flood extent
-  2% AEP
 -  1.33% AEP
 -  1% AEP
 -  0.1% AEP

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





Defences removed modelled fluvial extent

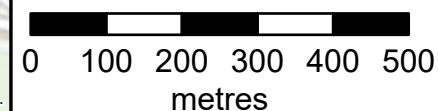
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Main river
- Modelled flood extent
 -  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





Defences removed modelled fluvial extent

Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

 Selected area

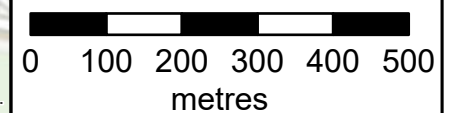
 Main river

Modelled flood extent

 1% AEP

 0.1% AEP

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





Defended climate change modelled fluvial extent

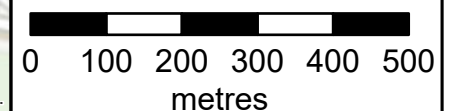
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

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

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





Defended modelled fluvial extent

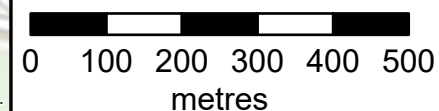
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
2009 FIM River Spen

-  Selected area
-  Main river
- Modelled flood extent
-  1% AEP

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





Defended modelled fluvial extent

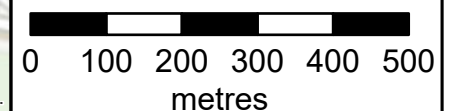
Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Main river
- Modelled flood extent
 -  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





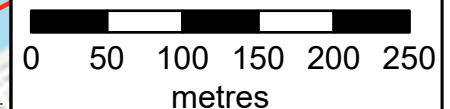
Defended modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:5,000 1 Dec 2025

Model name
2009 FIM River Spen

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	1% AEP	1% AEP
				Level	Flow
1	309043	422109	421010	45.37	0.36
2	77084	422235	420930	41.98	0.36
3	183363	422386	420969	41.78	0.37
4	227302	422434	420937	41.78	0.38
5	44123	422480	421024	42.27	28.15
6	98372	422481	421019	42.03	28.15
7	40463	422483	421071	42.42	28.15
8	217124	422583	420946	41.20	30.85
9	122869	422588	420943	41.20	30.85
10	150045	422669	420886	40.77	29.62

Data in this table comes from the 2009 FIM River Spen 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.



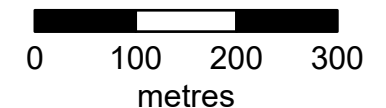
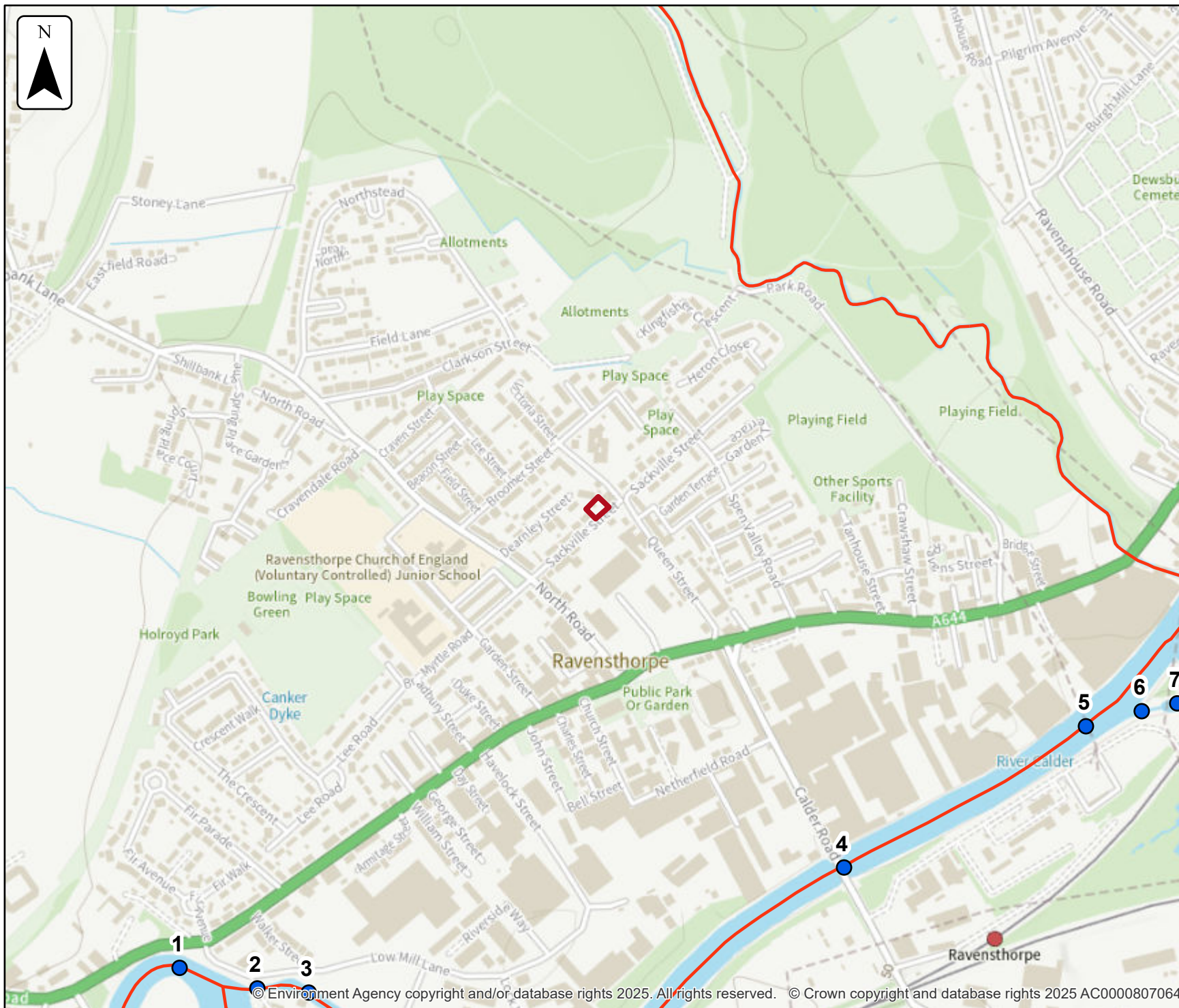
Defended modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:7,500 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% 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
1	1129722	421672	419920	41.47	41.74	41.80	42.12	42.19	42.34	42.45	42.50	42.70	43.62
2	1130235	421785	419890	40.89	41.24	41.28	41.45	41.48	41.58	41.66	42.06	41.89	43.39
3	1129749	421860	419884	40.89	41.24	41.28	41.45	41.48	41.57	41.66	42.06	41.88	43.28
4	1130038	422639	420066	39.54	40.08	40.21	40.67	40.75	40.91	41.02	41.03	41.26	42.29
5	1130096	422991	420271	39.19	39.59	39.71	40.13	40.20	40.35	40.45	40.49	40.66	41.67
6	1129676	423072	420293	39.16	39.59	39.72	40.21	40.30	40.49	40.63	40.67	40.90	42.02
7	1129968	423124	420305	37.85	37.85	37.85	38.0	38.0	38.0	38.01	38.0	38.14	39.89

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	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
1	1129722	421672	419920	226.81	284.28	297.23	336.68	339.55	347.69	354.08	358.96	363.38	535.28
2	1130235	421785	419890	1.07	1.84	2.18	4.48	5.06	6.48	7.64	8.05	10.60	26.44
3	1129749	421860	419884	1.02	1.84	2.18	4.48	5.06	6.48	7.63	8.05	10.98	55.44
4	1130038	422639	420066	225.63	306.76	327.51	410.49	424.54	454.91	477.50	474.12	532.17	785.51
5	1130096	422991	420271	225.62	306.67	327.44	410.46	424.74	455.91	479.40	474.44	537.77	788.40
6	1129676	423072	420293	1.67	1.82	1.86	2.02	2.04	2.09	2.13	2.14	2.21	3.14
7	1129968	423124	420305	1.67	1.82	1.86	2.01	2.03	2.09	2.12	2.13	2.20	11.40

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



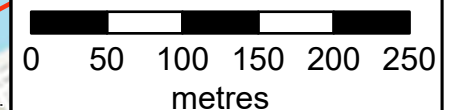
Defences removed modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:5,000 1 Dec 2025

Model name
2009 FIM River Spen

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	309043	422109	421010	45.35	45.36	45.37	45.37	45.37	45.37	45.37
2	77084	422235	420930	41.96	41.98	41.98	41.98	41.98	41.98	42.42
3	183363	422386	420969	41.52	41.59	41.71	41.81	41.88	41.92	42.42
4	227302	422434	420937	41.52	41.59	41.71	41.81	41.88	41.92	42.42
5	44123	422480	421024	41.99	42.07	42.20	42.31	42.37	42.42	43.70
6	98372	422481	421019	41.75	41.84	41.96	42.07	42.14	42.19	43.14
7	40463	422483	421071	42.09	42.20	42.34	42.46	42.54	42.60	43.77
8	217124	422583	420946	40.97	41.03	41.14	41.24	41.32	41.37	42.27
9	122869	422588	420943	40.97	41.03	41.14	41.24	41.32	41.37	42.27
10	150045	422669	420886	40.56	40.60	40.71	40.79	40.83	40.87	41.54

Data in this table comes from the 2009 FIM River Spen model.

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

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

Defences removed

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	309043	422109	421010	0.33	0.36	0.36	0.36	0.37	0.37	0.37
2	77084	422235	420930	0.33	0.36	0.36	0.36	0.37	0.37	0.37
3	183363	422386	420969	0.33	0.36	0.36	0.37	0.37	0.37	0.38
4	227302	422434	420937	0.33	0.36	0.37	0.37	0.38	0.38	0.39
5	44123	422480	421024	20.52	22.86	26.31	29.20	30.94	32.32	70.0
6	98372	422481	421019	20.52	22.86	26.31	29.20	30.94	32.32	70.0
7	40463	422483	421071	20.52	22.86	26.30	29.21	30.94	32.32	70.0
8	217124	422583	420946	23.09	25.55	28.91	31.89	33.68	35.12	75.24
9	122869	422588	420943	23.09	25.55	28.91	31.89	33.68	35.12	75.24
10	150045	422669	420886	23.09	24.66	27.81	30.61	32.29	33.64	70.65

Data in this table comes from the 2009 FIM River Spen 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.



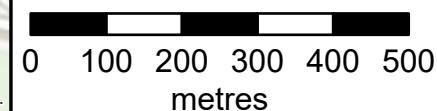
Defences removed modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	135367	421574	419816	41.68	41.92	42.09	42.19	42.28	42.50	43.64
2	183441	421673	419920	41.41	41.61	41.76	41.84	41.91	42.09	42.92
3	8358	421740	419854	41.55	41.80	41.97	42.08	42.16	42.39	43.50
4	16095	421788	419772	41.19	41.45	41.64	41.75	41.84	42.09	43.36
5	262111	421927	419674	41.11	41.40	41.59	41.70	41.79	42.03	43.22
6	340862	422281	419768	40.62	40.87	41.04	41.13	41.21	41.41	42.25
7	135040	422627	420059	40.17	40.42	40.58	40.68	40.76	41.0	42.31
8	228782	422991	420271	39.75	40.03	40.22	40.34	40.44	40.73	42.17
9	30304	423188	420494	39.40	39.67	39.86	39.98	40.08	40.37	41.98
10	8148	423356	420534	39.13	39.33	39.48	39.57	39.65	39.86	41.07

Data in this table comes from the 2011 River Calder - Calder model.

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

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

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	135367	421574	419816	330.50	373.65	405.41	426.36	442.59	488.19	767.30
2	183441	421673	419920	330.90	375.57	409.38	431.84	449.41	499.22	803.73
3	8358	421740	419854	330.75	375.46	409.21	431.56	449.07	498.59	799.79
4	16095	421788	419772	330.59	375.31	409.06	431.38	448.89	498.36	798.49
5	262111	421927	419674	330.46	375.19	408.92	431.19	448.71	498.16	811.12
6	340862	422281	419768	329.86	374.30	407.82	429.92	447.35	496.77	811.11
7	135040	422627	420059	330.08	374.87	408.57	430.85	448.34	497.93	806.75
8	228782	422991	420271	329.95	374.75	408.32	430.44	447.62	496.54	798.05
9	30304	423188	420494	329.92	374.77	408.33	430.44	447.49	496.15	795.22
10	8148	423356	420534	338.71	384.19	417.63	440.02	457.15	504.78	808.01

Data in this table comes from the 2011 River Calder - Calder 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.



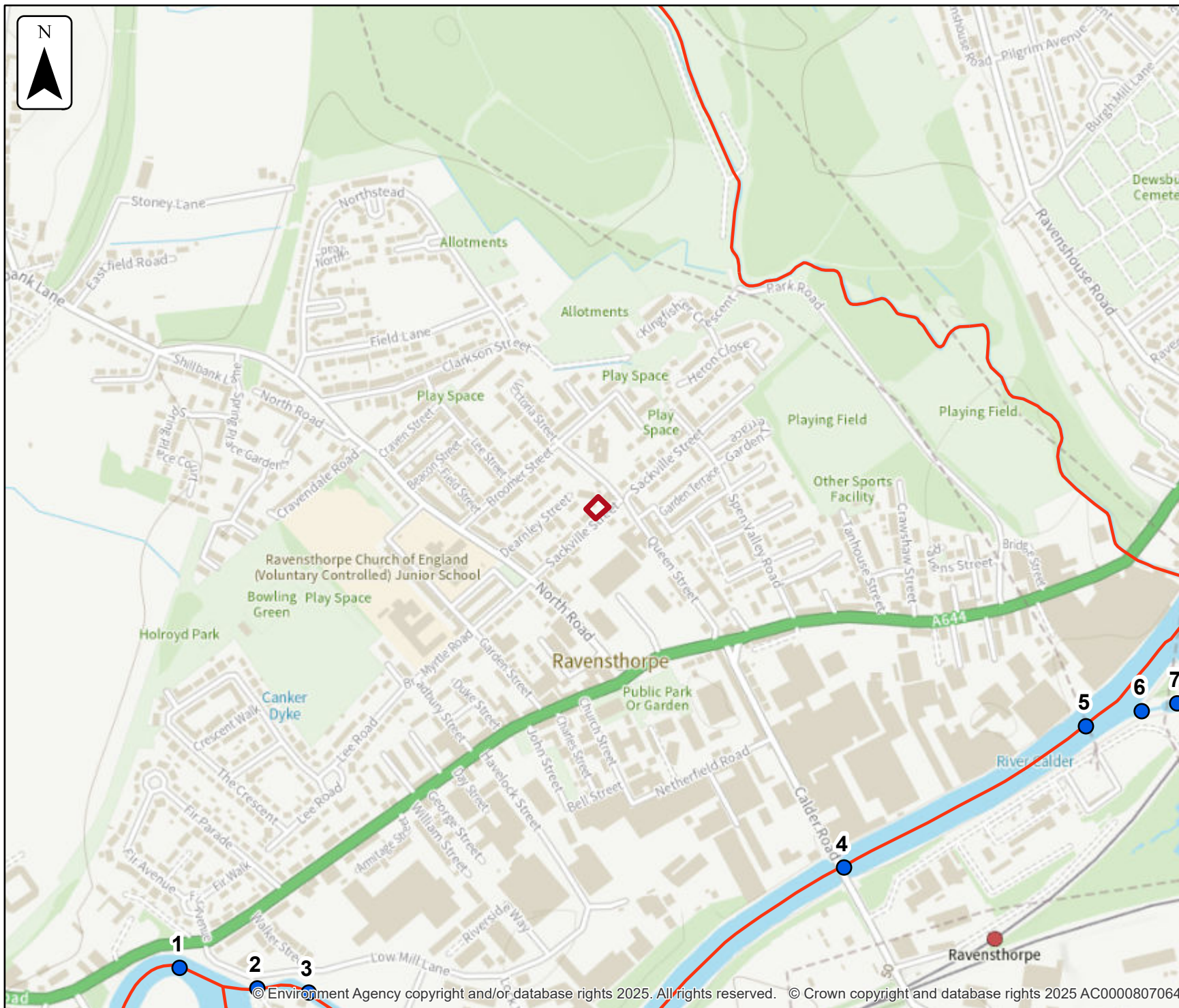
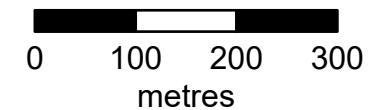
Defences removed modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:7,500 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level
1	1129722	421672	419920	41.25	41.50	41.78	42.02	42.14	42.48	42.48	43.65
2	1130235	421785	419890	40.78	41.09	41.28	41.41	41.47	41.77	41.79	43.38
3	1129749	421860	419884	40.78	41.09	41.28	41.41	41.47	41.77	41.78	43.28
4	1130038	422639	420066	39.88	40.18	40.47	40.70	40.83	41.01	41.16	42.30
5	1130096	422991	420271	39.42	39.66	39.94	40.16	40.29	40.46	40.62	41.69
6	1129676	423072	420293	39.40	39.67	39.98	40.25	40.41	40.63	40.83	42.04
7	1129968	423124	420305	38.0	38.0	38.0	38.0	38.0	38.0	38.04	39.92

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.

Defences removed

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1129722	421672	419920	291.37	309.56	318.18	321.63	323.90	349.94	327.19	531.63
2	1130235	421785	419890	0.84	0.88	1.95	3.45	4.29	7.92	7.18	26.73
3	1129749	421860	419884	0.81	0.84	1.95	3.45	4.30	7.92	8.86	53.29
4	1130038	422639	420066	282.09	326.20	375.59	415.51	437.67	471.99	496.27	787.99
5	1130096	422991	420271	282.08	326.18	375.42	415.43	437.83	472.91	501.12	789.12
6	1129676	423072	420293	1.76	1.85	1.95	2.03	2.08	2.14	2.18	3.22
7	1129968	423124	420305	1.76	1.85	1.95	2.03	2.07	2.13	2.17	11.66

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



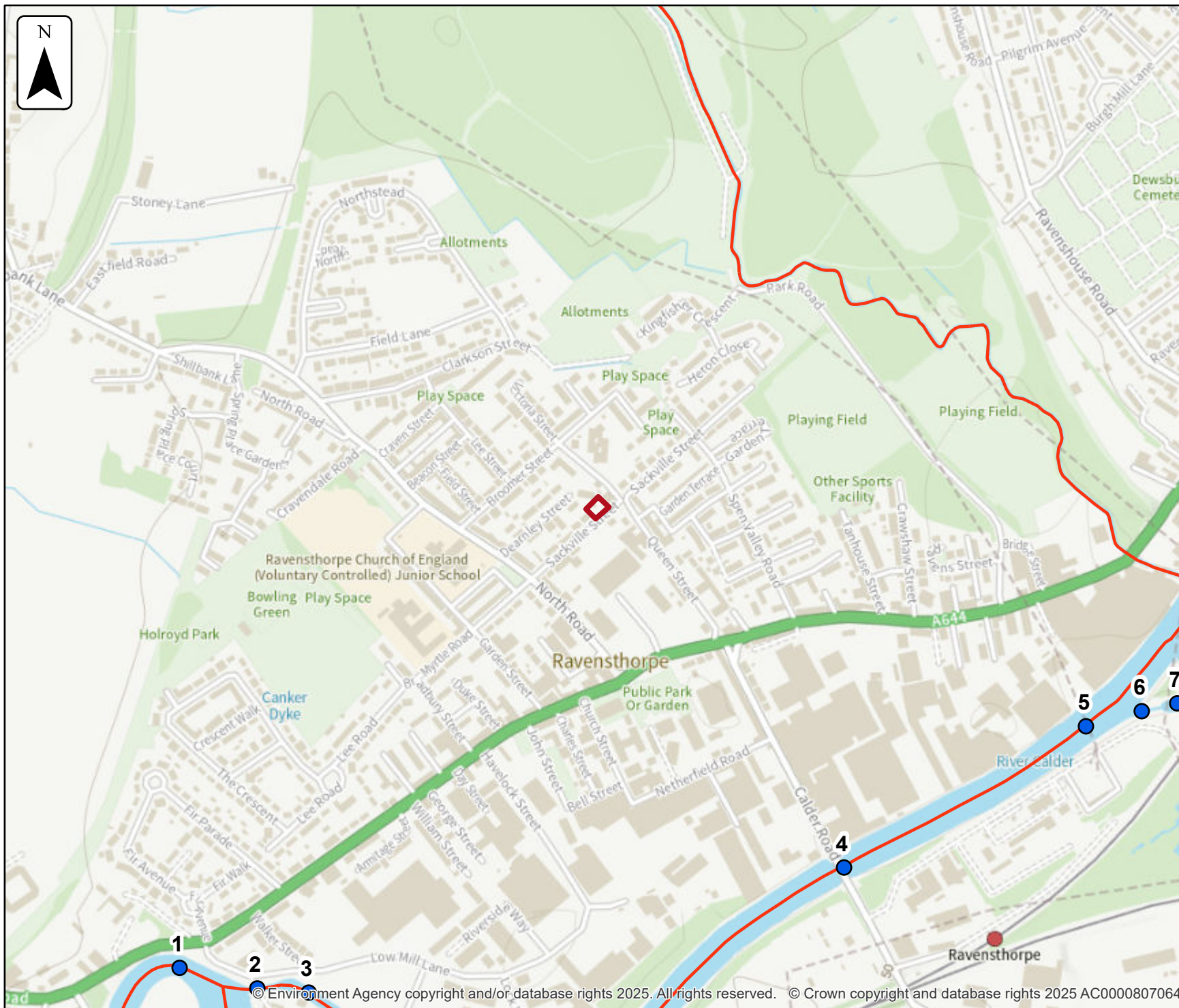
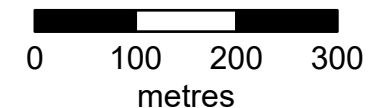
Defended climate change modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:7,500 1 Dec 2025

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1129722	421672	419920	42.81	367.12
2	1130235	421785	419890	42.0	12.15
3	1129749	421860	419884	41.99	13.51
4	1130038	422639	420066	41.38	560.61
5	1130096	422991	420271	40.73	570.71
6	1129676	423072	420293	41.02	2.24
7	1129968	423124	420305	38.74	2.23

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



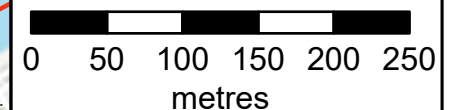
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:5,000 1 Dec 2025

Model name
2009 FIM River Spen

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	309043	422109	421010	45.37	0.37
2	77084	422235	420930	42.12	0.37
3	183363	422386	420969	42.11	0.37
4	227302	422434	420937	42.11	0.38
5	44123	422480	421024	42.67	39.48
6	98372	422481	421019	42.41	39.48
7	40463	422483	421071	42.86	39.49
8	217124	422583	420946	41.57	42.52
9	122869	422588	420943	41.57	42.52
10	150045	422669	420886	41.01	40.64

Data in this table comes from the 2009 FIM River Spen 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.



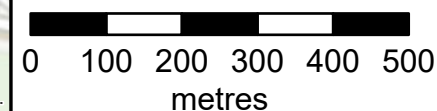
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
422280/420589

Scale Created
1:10,000 1 Dec 2025

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	135367	421574	419816	42.66	521.23
2	183441	421673	419920	42.21	535.15
3	8358	421740	419854	42.53	534.25
4	16095	421788	419772	42.25	533.82
5	262111	421927	419674	42.19	533.75
6	340862	422281	419768	41.53	532.21
7	135040	422627	420059	41.15	533.08
8	228782	422991	420271	40.90	530.56
9	30304	423188	420494	40.56	529.91
10	8148	423356	420534	40.01	539.07

Data in this table comes from the 2011 River Calder - Calder model.

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

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

Strategic flood risk assessments

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

This should give you information about:

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

Your Lead Local Flood Authority is 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