

FLOOD RISK ASSESSMENT – 99 Lang Avenue, Barnsley, S71 5LU (Change of Use from C3 Dwellinghouse to C2 Children’s Home)

Prepared by: Osman Design Partnership Ltd

Date: December 2025

Revised to incorporate the correct surveyed finished floor levels

1. Introduction

This Flood Risk Assessment (FRA) has been prepared in response to the Environment Agency consultation response dated 10 July 2025 and incorporates the detailed Environment Agency Product 4 flood modelling data (Automated Product 4 EC31325, River Don – Don Dearne model, issued 22 September 2025).

The proposal is a change of use only from a single C3 dwellinghouse to a C2 children’s home (maximum 2 children with 24/7 staff). There are no extensions, no operational development, no increase in building footprint and no increase in impermeable area.

This FRA demonstrates that the proposed development is safe for its lifetime without increasing flood risk elsewhere and fully complies with the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG) and Environment Agency standing advice.

2. Site Description

Address: 99 Lang Avenue, Barnsley, S71 5LU

Grid Reference: E 437428 N 406808

Current use: C3 dwellinghouse

Proposed use: C2 children’s home (2 children + 24/7 staff)

Building: Two-storey detached house. All bedrooms and sleeping accommodation at the first floor level.

3. Flood Zone Classification

Flood Zone 3 (high probability) – confirmed by Environment Agency Flood Map for Planning and Product 4 data.

4. Finished Floor Levels and Ground Levels

Internal ground-floor finished floor level (FFL): 38.60 mAOD (confirmed by measured survey)

External ground level immediately adjacent to building: 38.00 mAOD

Height from external ground to internal FFL: +600 mm

5. EA Modelled Flood Levels (Product 4 – Nearest Node Label 13, E 437428 / N 406807)

1% AEP (1 in 100-year) defended: 36.04 mAOD

0.1% AEP (1 in 1000-year) defended: 37.93 mAOD

1% AEP + 60% climate change (design event) defended: 37.98 mAOD

Highest modelled level in wider Product 4 grid: 38.59 mAOD (not at the property)

6. Comparison of Modelled Levels vs Actual Finished Floor Level

Event	Modelled Level	Internal FFL	Freeboard
1% AEP defended	36.04 mAOD	38.60 mAOD	+2.56 m
0.1% AEP defended	37.93 mAOD	38.60 mAOD	+0.67 m
1% AEP + 60% climate change defended	37.98 mAOD	38.60 mAOD	+0.62 m
Highest grid value in Product 4 selection	38.59 mAOD	38.60 mAOD	+0.01 m

The internal finished floor level is above every modelled flood level, including the design flood event, with a minimum freeboard of 620 mm.

7. Risk from Other Sources

Surface water: Low to medium risk – mitigated by 600 mm internal floor finish

Groundwater: No recorded issues.

Sewer flooding: No recorded incidents for this postcode.

Historic records: Wider area events only (2007, etc.) – property unaffected.

8. Impact on Flood Risk Elsewhere

No increase in impermeable area or ground levels. The proposal will not increase flood risk elsewhere.

9. Flood-Resilient Design and Mitigation Measures

- All electrical sockets and services are raised a minimum of 450 mm above FFL
- Water-resistant flooring and plaster on to ground floor
- Sealed service entry points
- Demountable door barriers available (300 mm)
- All sleeping accommodation on the first floor (well above any flood level)
- 24/7 on-site staffing
- Property registered for EA Flood Warnings
- Staff trained in flood response and evacuation

10. Flood Warning and Evacuation Plan

Flood Alert: Prepare building, move valuables upstairs.

Flood Warning: All residents move to the first-floor safe refuge.

Severe Flood Warning: Off-site evacuation via pre-agreed dry route if required.

Primary refuge: First floor of the property

Emergency equipment and monthly staff training/annual drill are in place.

11. Climate Change Assessment

The 1% AEP + 60% climate change allowance has been assessed. The design flood level (37.98 mAOD) remains 620 mm below the actual finished floor level. Residual risk is comfortably managed by freeboard, resilience measures and the operational plan.

12. Sequential and Exception Tests

Sequential Test: Managed by the Local Planning Authority. No reasonably available site in a lower flood zone for this specific small-scale C2 use.

Exception Test: The development provides a community benefit (care for vulnerable children), and this FRA demonstrates it is safe for its lifetime without increasing risk elsewhere. The Exception Test is passed.

13. Conclusions

- Actual internal FFL of **38.60 mAOD** is above all EA modelled flood levels with a minimum 620 mm freeboard to the design event.
- No increase in flood risk elsewhere.
- With resilience measures, first-floor refuge, and 24/7 staffing, the children's home is safe for its lifetime.
- The development complies with NPPF, PPG and EA requirements.
- The previous EA objection of July 2025 is fully addressed.

14. Appendices

Appendix A – EA Product 4 data (EC31325)

Appendix B – Node location plan and level tables

Appendix C – Flood warning & evacuation procedure

Prepared by:

13 Architectural Consultants Ltd

December 2025

The Flood Map for Planning

The Flood Map for Planning (Rivers and Sea) can be viewed and downloaded as a PDF file on GOV.UK by following this link: <https://flood-map-for-planning.service.gov.uk> or downloaded in GIS format under an open data licence from the following address: <https://environment.data.gov.uk/>

Please type Flood Map for Planning in the search box.

What is the Flood Map for Planning?

The Flood Map for Planning provides information on flooding from rivers and the sea for England and Wales. The Flood Map also has information on flood defences and the areas benefiting from those flood defences.

The Flood Map for Planning shows the following:

1. Flood Zone 3 (dark blue area on the enclosed map): natural flood plain area that could be affected by flooding from rivers and/or the sea – not taking into account the presence of any flood defences
 - For flooding from rivers the map indicates the extent of a flood with a 1% (1 in 100) chance of happening each year;
 - For flooding from the sea the map shows the extent of a flood with a 0.5% (1 in 200) chance of happening each year.
2. Flood Zone 2 (light blue area): natural flood plain area that could be affected by flooding from rivers and/or the sea – not taking into account the presence of any flood defences. Flood Zone 2:
 - indicates the extent of a flood with a 0.1% (1 in 1000) chance of happening each year.
 - and/or indicates the greatest recorded historic flood, whichever is greater.
3. Flood defences built in the last five years to protect against river floods with a 1% (1 in 100) chance of happening each year, together with some natural or constructed entities which retain, store or channel water and which may protect against smaller floods.

Flood History (if applicable)

See the attached map showing the flood history for this site. The extent of flooding, and/or flood level information is only shown for those watercourses surveyed after the flood. Other flooding may have occurred which is not shown. This is the best information currently available. Please note that for this reason, we are unable to confirm if flooding has occurred at a property scale. The Flood History Map PDF we have provided shows the area of land that has flooded rather than any individual property. Please refer to the attached table detailing the causes of those past floods.

In the attached list, there may be outlines which have a Flood Map or the Historical Flood Map status of “Considered and Rejected”. This could be for various reasons, including but not limited to the outline consisting of flooding from surface water, overland flow or sewage. It could also be a result of the data being of very poor quality, or in some cases, where changes in the area make a historical flood outline no longer representative of the flood risk, e.g. ground raising or flow path changes.

Water causing flooding can come from different places, for example from rivers or the sea; surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system); overflowing or backing up of sewers or drainage systems which have been overwhelmed or from groundwater rising from underground aquifers.

Please note that this record doesn't include all of the flooding that may have occurred including and since 1st November 2023. Given the process of recording, verifying and updating our record from major floods is extensive and may take a considerable amount of time.



Assets (if applicable)

Asset Location Map

Please find attached asset map(s) showing the location of all (Agency and non-Agency maintained) flood defences.

Description of Works

See attached table with description of the defences shown on the above drawing, including condition ratings, upstream and downstream crest levels, where available.

Risk of Flooding – Environment Agency Defences

The risk of flooding in this area is now reduced by the presence of flood defences that we maintain, but there still is a residual risk of flooding if these were to breach or be overtopped by a flood greater than that for which they were designed.

Risk of Flooding – Privately Maintained Defences

You will see that the Environment Agency does not maintain any of those defences. However, we undertake regular risk based visual inspections. We do not hold design levels and have no height information on these defences.

Asset Condition Ratings

The performance of a flood defence asset is recorded as the condition of the asset. Our asset inspectors subjectively assess the conditions of assets (during visual inspection site visits) with reference to a national standard template. Each asset is given a rating between one and five with one being very good condition and five being very poor. A condition rating of 3, or 'fair' is the minimal acceptable standard for a critical asset, such as a defence wall that protects properties. We are striving to improve all assets below 'fair' to an acceptable standard.

Asset inspections are done on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings.



Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.

Asset Standard of Protection

Please note that the provided Design Standard of Protection is an estimate and should not be relied on. Please note that where available the defended flood extents provide more reliable information relating to the protection offered by the defence (i.e. at which return period the water levels are likely to overtop the defence). If available and required, the defended flood extents can be provided on request.

Modelling

Please note that whilst the information provided is our best available data, we do not guarantee that is sufficient for land use planning or other such purposes. It is the applicant's responsibility to assess the suitability of the provided model/data for their purposes.

Climate Change

Updated guidance on how climate change could affect flood risk to new development - '[Flood risk assessments: climate change allowances](#)' was published on gov.uk on 19 February 2016. You should confirm the flood risk vulnerability classification and lifetime of your proposed development in line with NPPF and apply the appropriate climate change allowances.

Bespoke Flood Risk Assessment (FRA) advice:

If the pre-application advice is required with regards the preparation of a site-specific Flood Risk Assessment, this can be requested via the Yorkshire Sustainable Places team (email: sp-yorkshire@environment-agency.gov.uk). Charges may apply for any advice that is provided, this currently stands at £100 per hour per person. The [.gov.uk](#) pages provide a good starting point on what to include within a site-specific Flood Risk Assessment and can be accessed via <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>. A site-specific Flood Risk Assessment will need to consider flood risks from all sources, including those associated with defence failure (e.g. breach) and accounting for the predicted impacts as a result of climate change. Please contact the Sustainable Places team if you require advice on how to include these within a Flood Risk Assessment.



Other

Surface Water Map

Lead Local Flood Authorities (LLFA) are responsible for managing local flood risk from surface water flooding and groundwater flooding. You should check with the LLFA as they may have more up to date information regarding this type of flooding.

The Risk of Flooding from Surface Water Flood Map can be viewed and downloaded as a PDF file on GOV.UK by following this link: <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

Surface Water Drainage

The Lead Local Flood Authority is the statutory consultee for planning matters relating to surface water drainage, therefore it is recommended they should be consulted separately regarding this.

Surface water discharge from new development should ideally 'mimic' the pre-development situation using a sustainable drainage system so that the flow and volume of water in watercourses is not increased.

A permit may be required, under the Environmental Permitting Regulations 2016 from the Environment Agency for any proposed works or structures in, under, over or within eight metres of a 'main river' (e.g., a new outfall). A permit is separate to and in addition to any planning permission granted. Further details and guidance are available on the GOV.UK website:

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

Risk of Flooding from Reservoirs Map

Outlines and simplified depth and velocity maps can be viewed on our website:

<https://flood-warning-information.service.gov.uk/long-term-flood-risk/#x=438988&y=406600&scale=2>

Please, zoom into the location of interest, and then click on the inundated location for details. As a result a list of reservoirs will be provided with supporting information and a links to other data, such as estimated depths and speed of flooding, at the bottom of the result page.

A map of showing the outlines can also be provided on request.



Flood Warning

The site may be covered by a Flood Warning. To register to receive this service, you can call Floodline 24 hours a day on 0845 988 1188.

LIDAR Data

Please note that our LiDAR data is now available free of charge (Open Data) from <https://environment.data.gov.uk/survey> (once zoomed to the relevant location the available LiDAR products will be listed below the map).

Two LIDAR products are available:

1. Tiled LIDAR data - The full tiled dataset consists of historic LIDAR data which has been gathered since 1998. For some areas we have carried out repeat surveys and data is available in a range of resolutions.
2. Composite LIDAR data - The composite dataset is derived from a combination of our full tiled dataset which has been merged and re-sampled to give the best possible spatial coverage.

Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground. This technique results in the production of an accurate, cost-effective terrain model suitable for assessing flood risk and other environmental applications.

The Environment Agency owns two LIDAR systems, which are installed in a survey aircraft along with its other operational remote sensing instruments.

The aircraft is positioned and navigated using Global Positioning System (GPS) corrected to known ground reference points. The aircraft typically flies at a height of about 800 metres above ground level and a scanning mirror allows a swath width of about 600 metres to be surveyed during a flight.

The Rights & Responsibilities of a Riverside Owner

The owner of property adjacent to a watercourse is usually deemed to be the riparian owner and, as such, has both riparian rights and responsibilities regarding the watercourse within their ownership.

For more information on Rights and Responsibilities of a riverside owner, you can visit our website at:



[Your watercourse: rights and roles | Engage Environment Agency](#)

Ordnance Survey Data

Under the terms of our licence agreement with the Ordnance Survey, we are unable to supply the OS data. Under this agreement we can only supply OS data to consultants/contractors carrying out work on our behalf.

Did you know?

You can now request flood risk assessment data (also known as a Product 4) online at <https://flood-map-for-planning.service.gov.uk/>

Flood risk assessment data



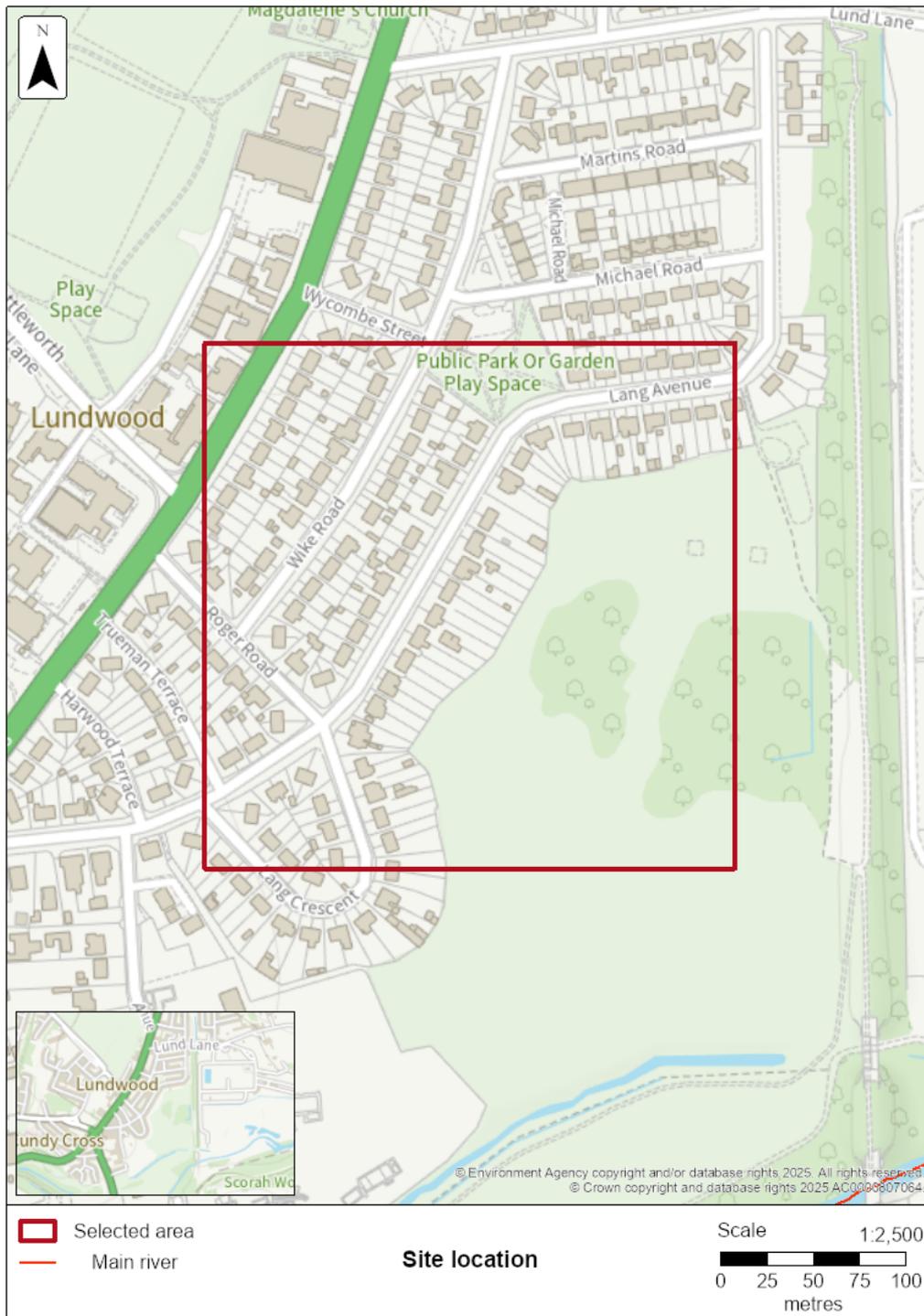
Location of site: 437428 / 406808 (shown as easting and northing coordinates)

Document created on: 22 September 2025

This information was previously known as a product 4.

Customer reference number: MKJ8PMNAW2FC

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
- 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 Barnsley District.

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

About the models used

Model name: River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated Model

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

Date: 6 March 2024

This model contains the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

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

Metres above ordnance datum (mAOD)

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

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

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

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



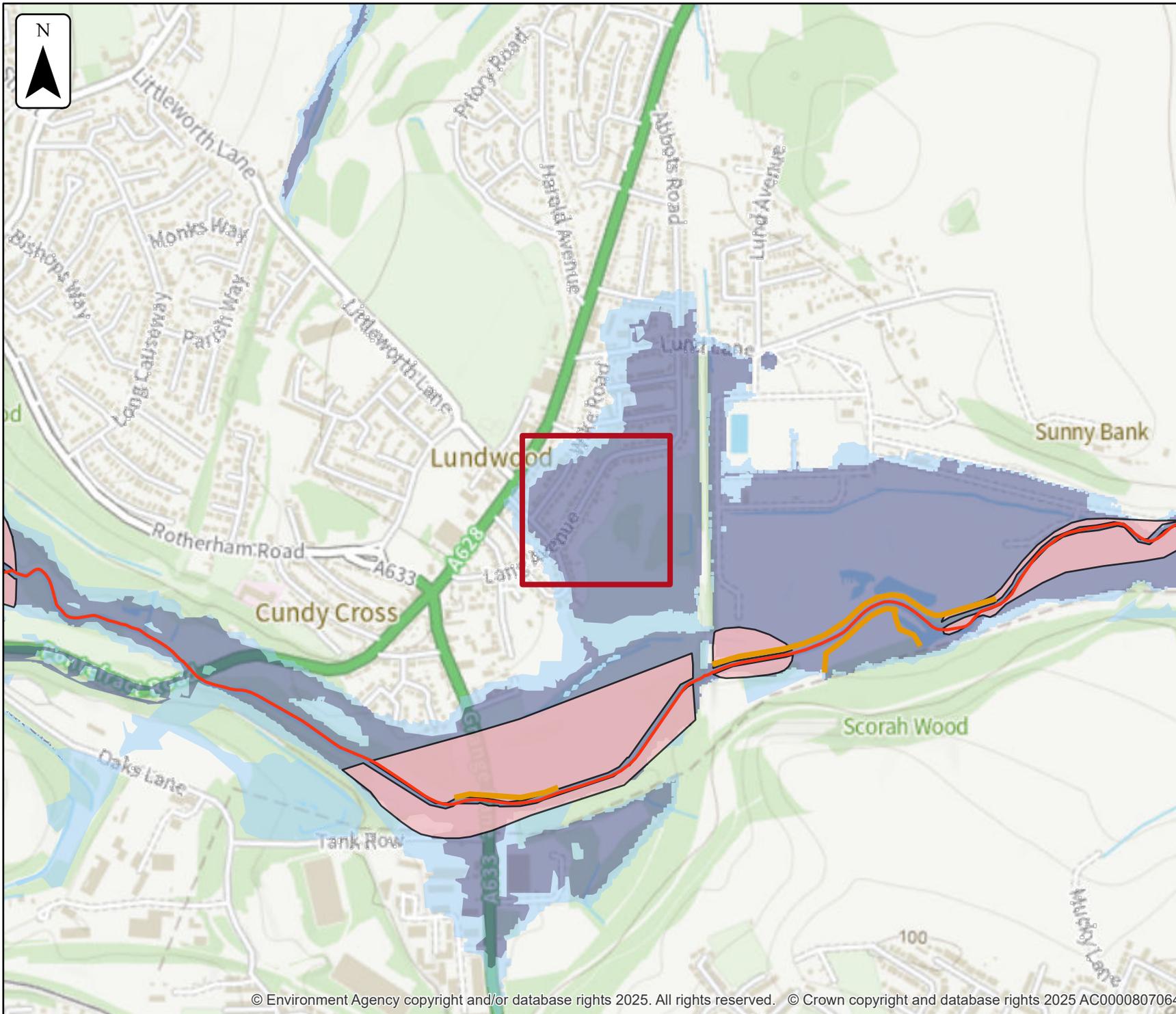
Flood map for planning

Location (easting/northing)
437428/406808

Scale
1:10,000

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



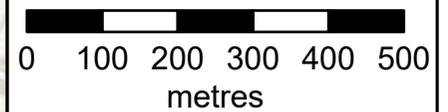
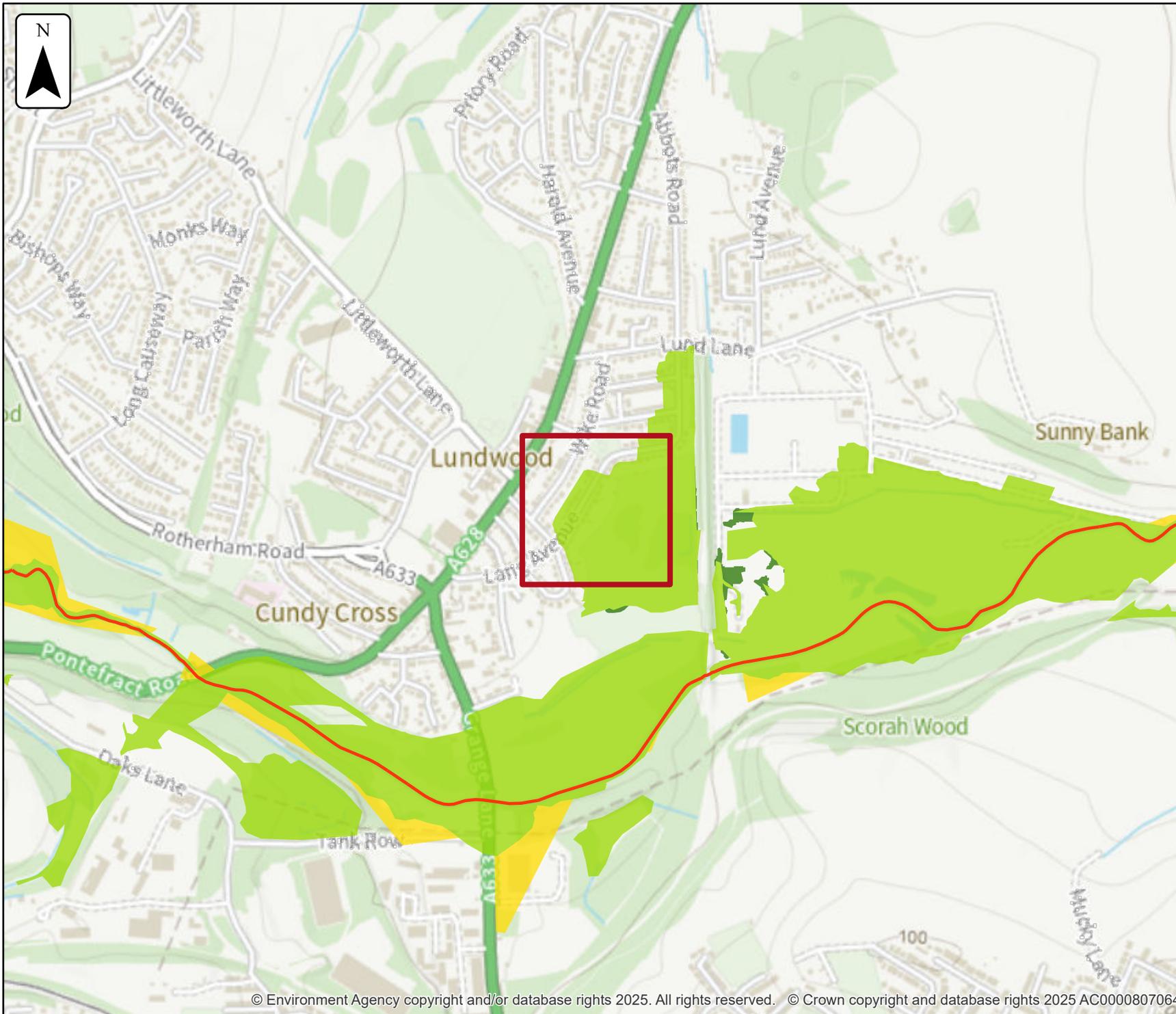
Past floods

Location (easting/northing)
437428/406808

Scale
1:10,000

Created
22 Sep 2025

-  Selected area
-  Main river
- Date of flood event
 -  June, 2007
 -  October, 2000
 -  March, 1947



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
25 June 2007	26 June 2007	unknown	unknown	Yes
1 October 2000	30 November 2000	main river	unknown	Yes
19 March 1947	22 March 1947	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



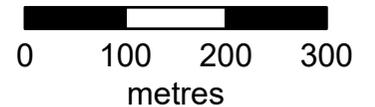
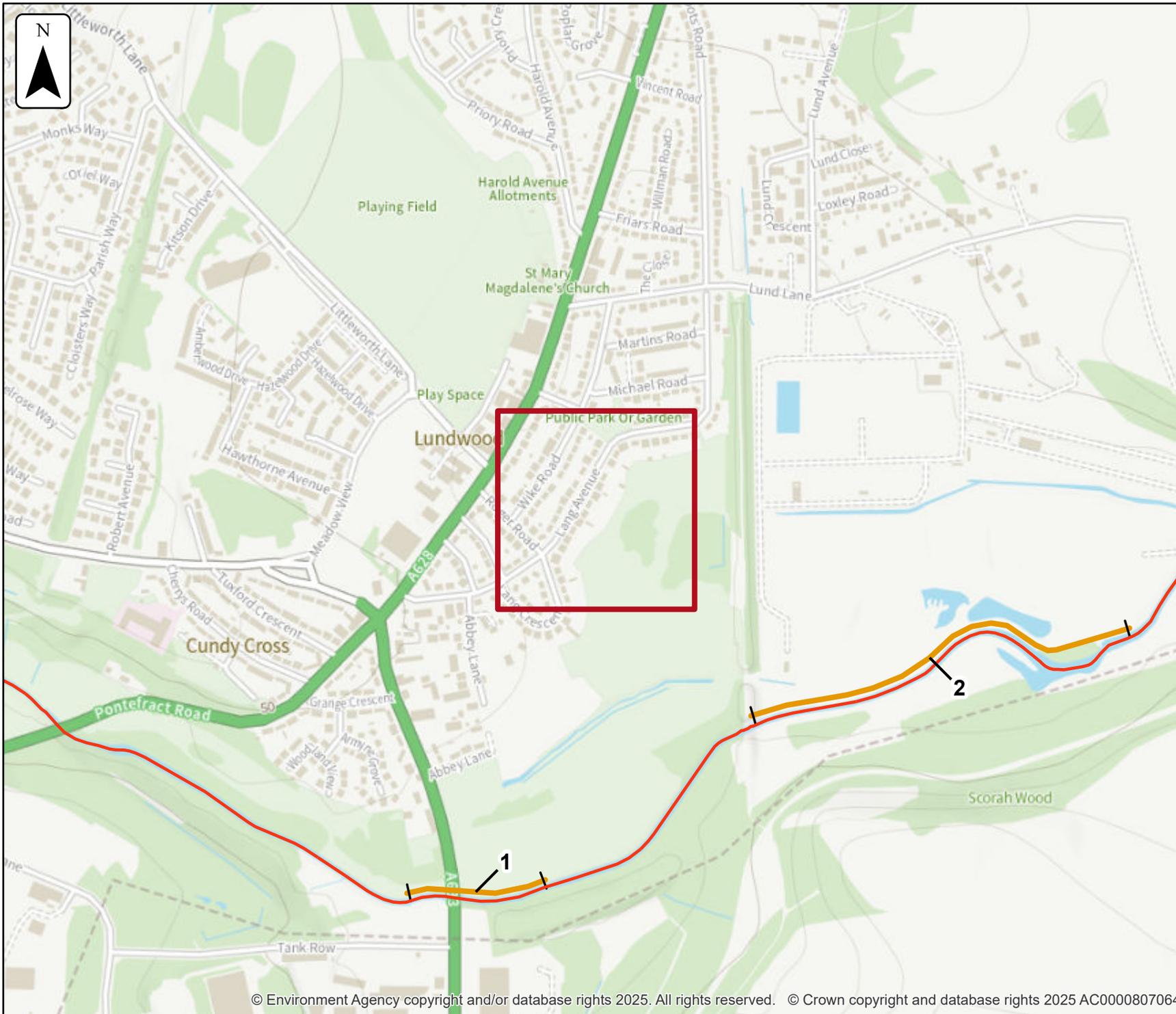
Flood defences

Location (easting/northing)
437428/406808

Scale
1:7,500

Created
22 Sep 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	25890	Embankment	30		35.12	36.05	
2	25821	Embankment	30		34.75	37.55	

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
- 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



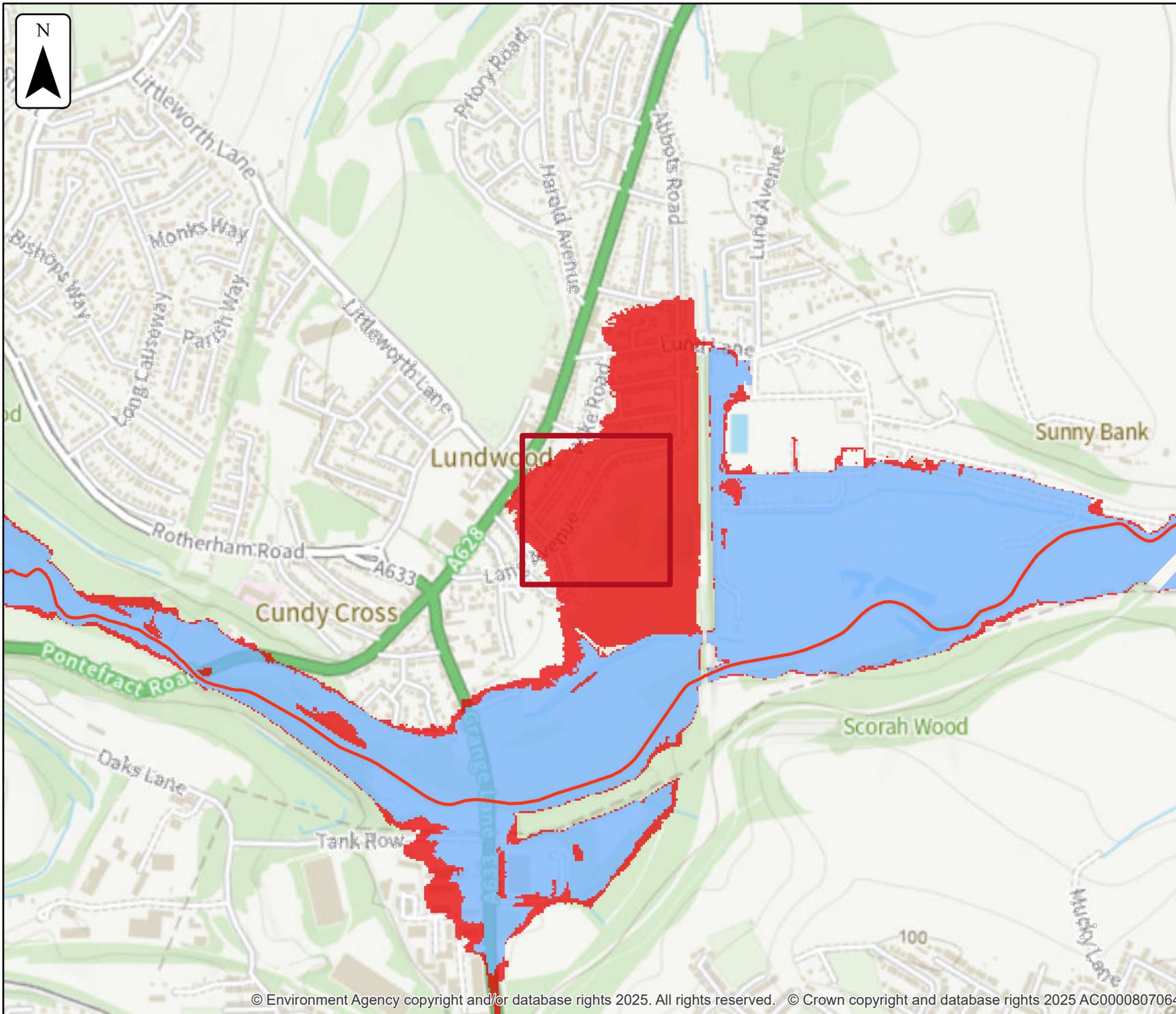
Defences removed modelled fluvial extent

Location (easting/northing)
437428/406808

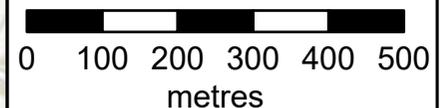
Scale Created
1:10,000 22 Sep 2025

Model name
**River Don - Don
Dearne. 2024 Middle**

-  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

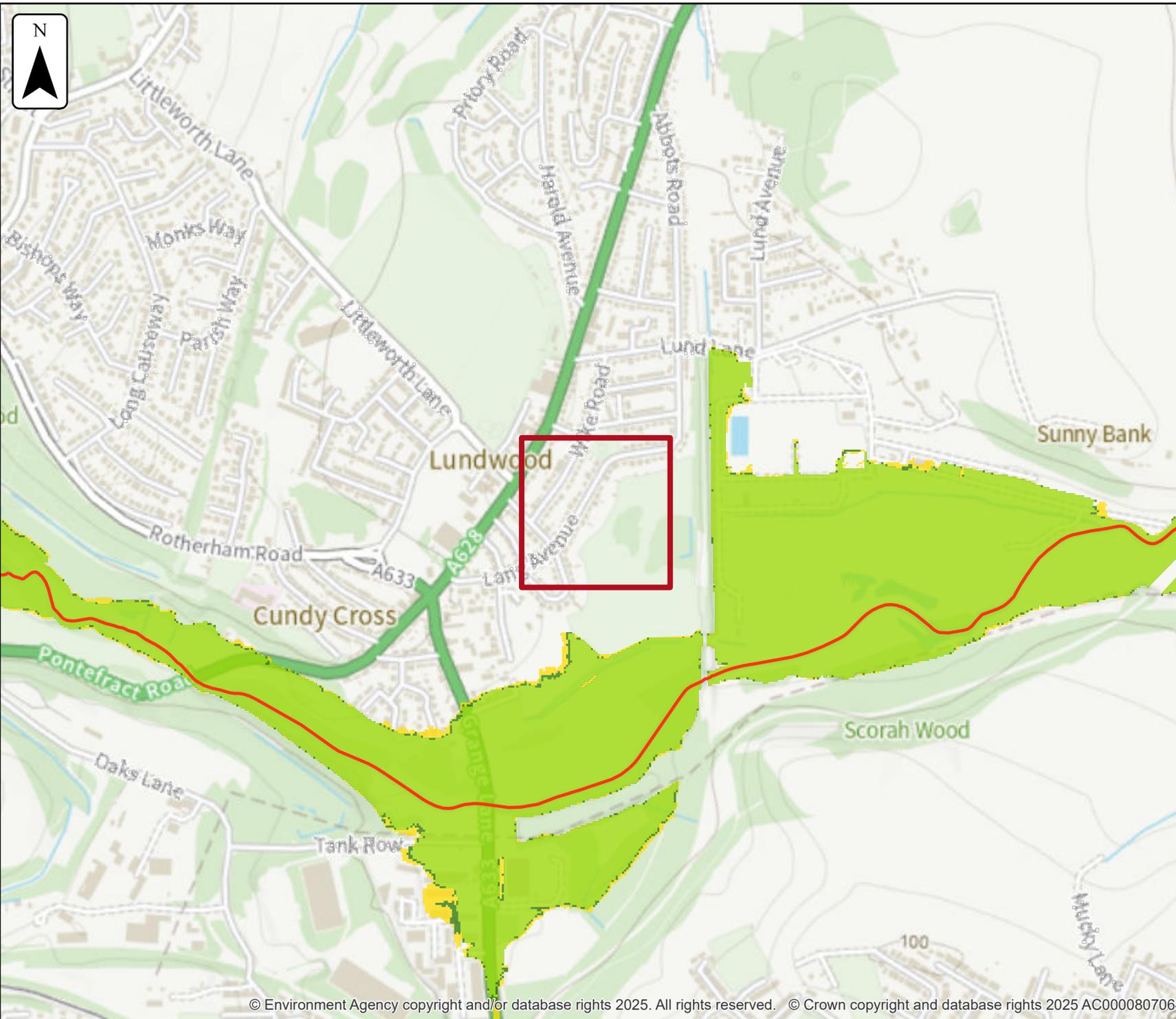
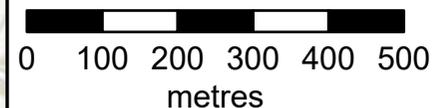
Location (easting/northing)
437428/406808

Scale Created
1:10,000 22 Sep 2025

Model name
River Don - Don Dearne. 2024 Middle

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+28%)
 -  1% AEP (+38%)
 -  1% AEP (+60%)

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





Defended modelled fluvial extent

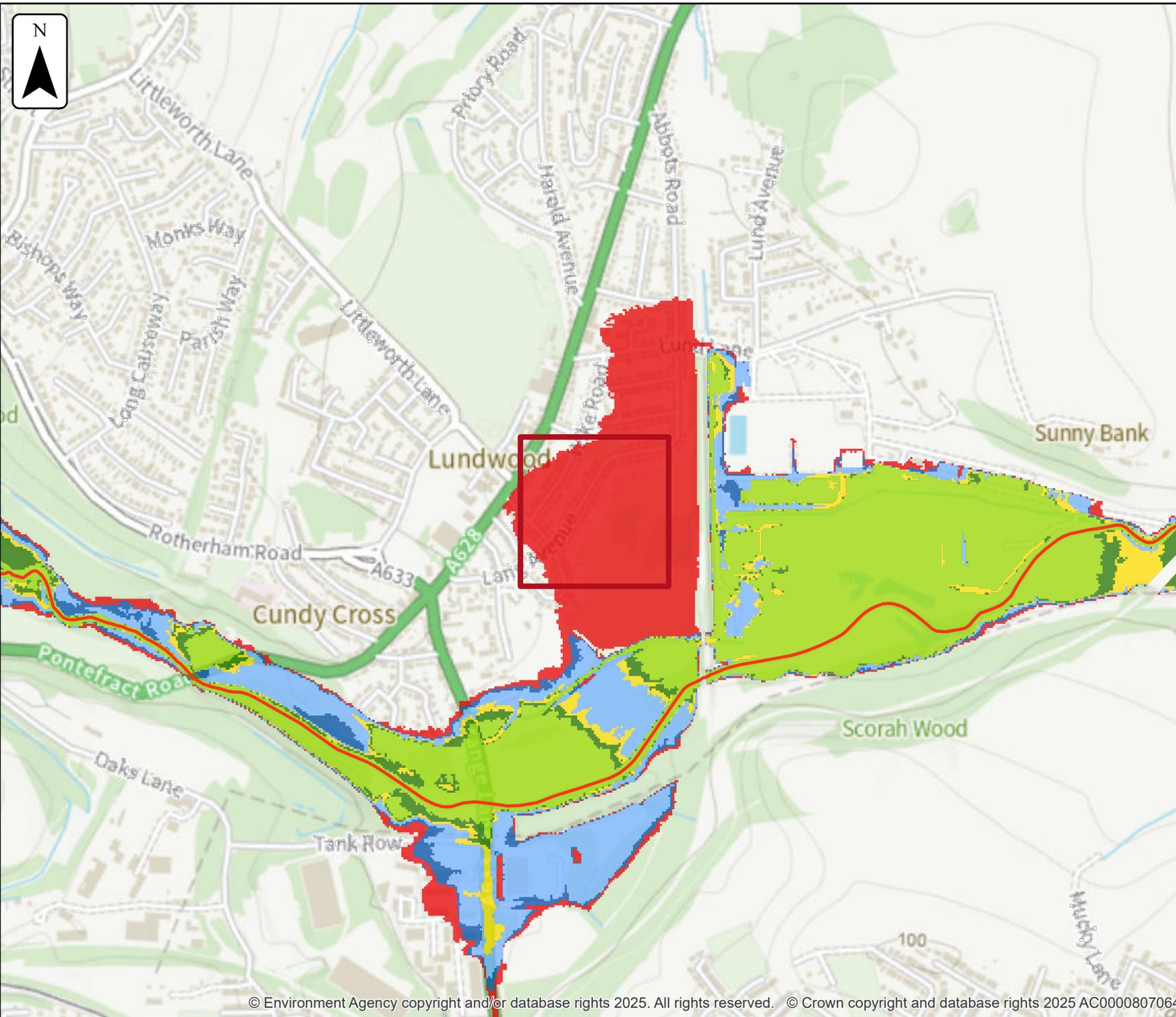
Location (easting/northing)
437428/406808

Scale Created
1:10,000 22 Sep 2025

Model name
**River Don - Don
Dearne. 2024 Middle**

-  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





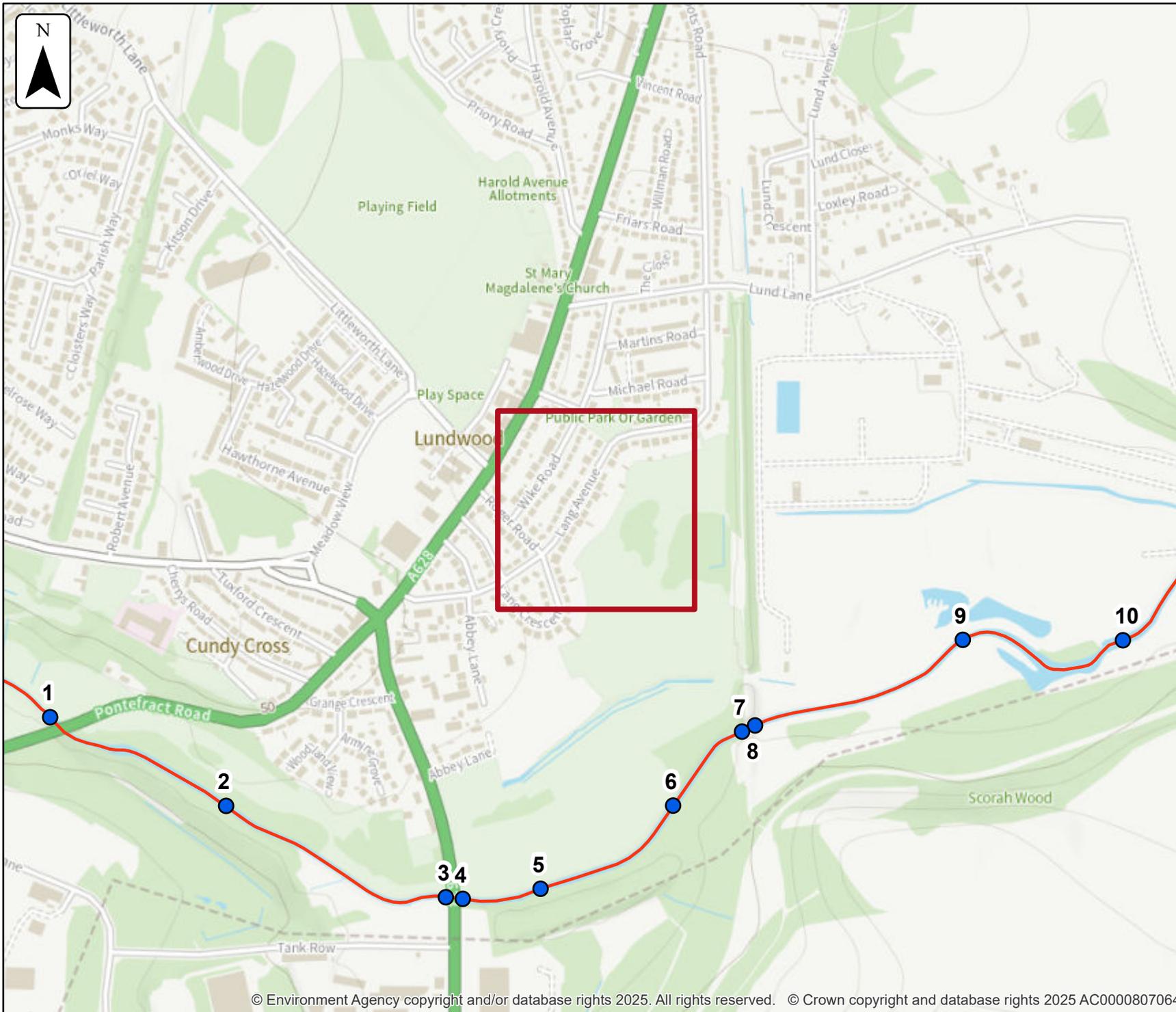
Defences removed modelled fluvial node locations

Location (easting/northing)
437428/406808

Scale Created
1:7,500 22 Sep 2025

Model name
River Don - Don Dearne. 2024 Middle

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	1% AEP	0.1% AEP	1% AEP	0.1% AEP
				Level	Level	Flow	Flow
1	1589033	436634	406509	38.94	40.03	197.28	307.70
2	1589048	436890	406381	38.21	39.31	196.66	307.10
3	1589269	437210	406249	37.99	39.12	194.95	305.85
4	1588939	437234	406247	37.97	39.10	194.95	305.85
5	1588940	437347	406261	37.94	39.08	194.25	305.32
6	1589111	437540	406381	37.75	38.97	193.40	304.57
7	1589067	437640	406488	37.03	37.91	193.21	304.46
8	1588942	437659	406497	36.97	37.71	193.21	304.46
9	1589143	437962	406620	36.62	37.26	15.99	14.27
10	1589162	438194	406620	36.66	37.31	35.71	34.84

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.



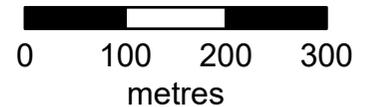
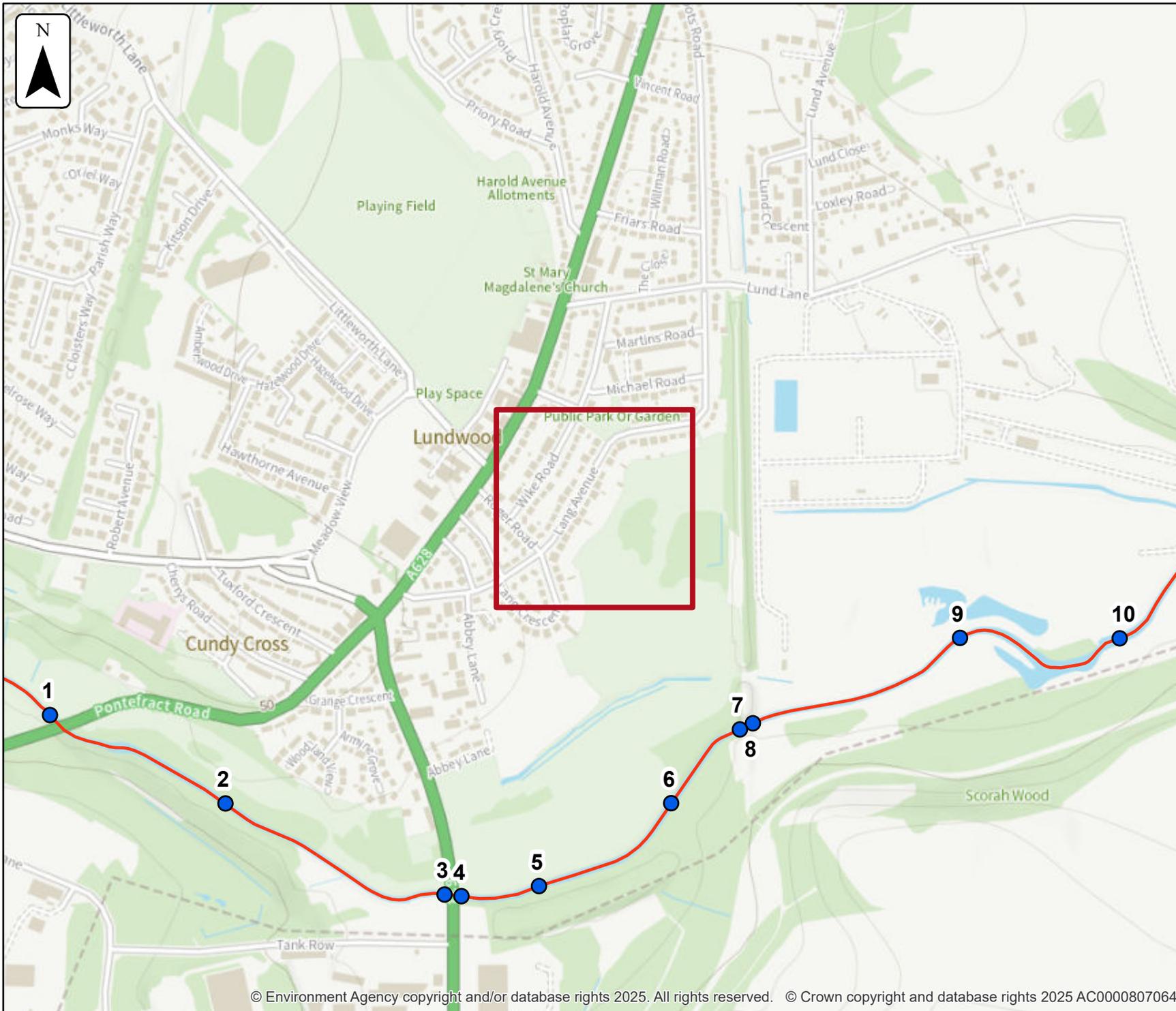
Defended climate change modelled fluvial node locations

Location (easting/northing)
437428/406808

Scale Created
1:7,500 22 Sep 2025

Model name
River Don - Don Dearne. 2024 Middle

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)
				Level	Level	Level	Flow	Flow	Flow
1	1589033	436634	406509	39.70	39.82	40.08	253.64	272.98	316.34
2	1589048	436890	406381	38.80	38.98	39.38	279.97	282.81	315.55
3	1589269	437210	406249	38.59	38.78	39.20	258.74	270.97	314.09
4	1588939	437234	406247	38.57	38.76	39.18	258.74	270.97	314.09
5	1588940	437347	406261	38.55	38.74	39.16	254.07	270.45	313.50
6	1589111	437540	406381	38.41	38.62	39.05	249.81	269.77	312.79
7	1589067	437640	406488	37.51	37.66	37.96	249.64	269.61	312.64
8	1588942	437659	406497	37.39	37.51	37.75	249.64	269.61	312.64
9	1589143	437962	406620	36.99	37.09	37.29	35.19	35.48	36.05
10	1589162	438194	406620	37.03	37.14	37.35	35.14	35.23	35.55

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.



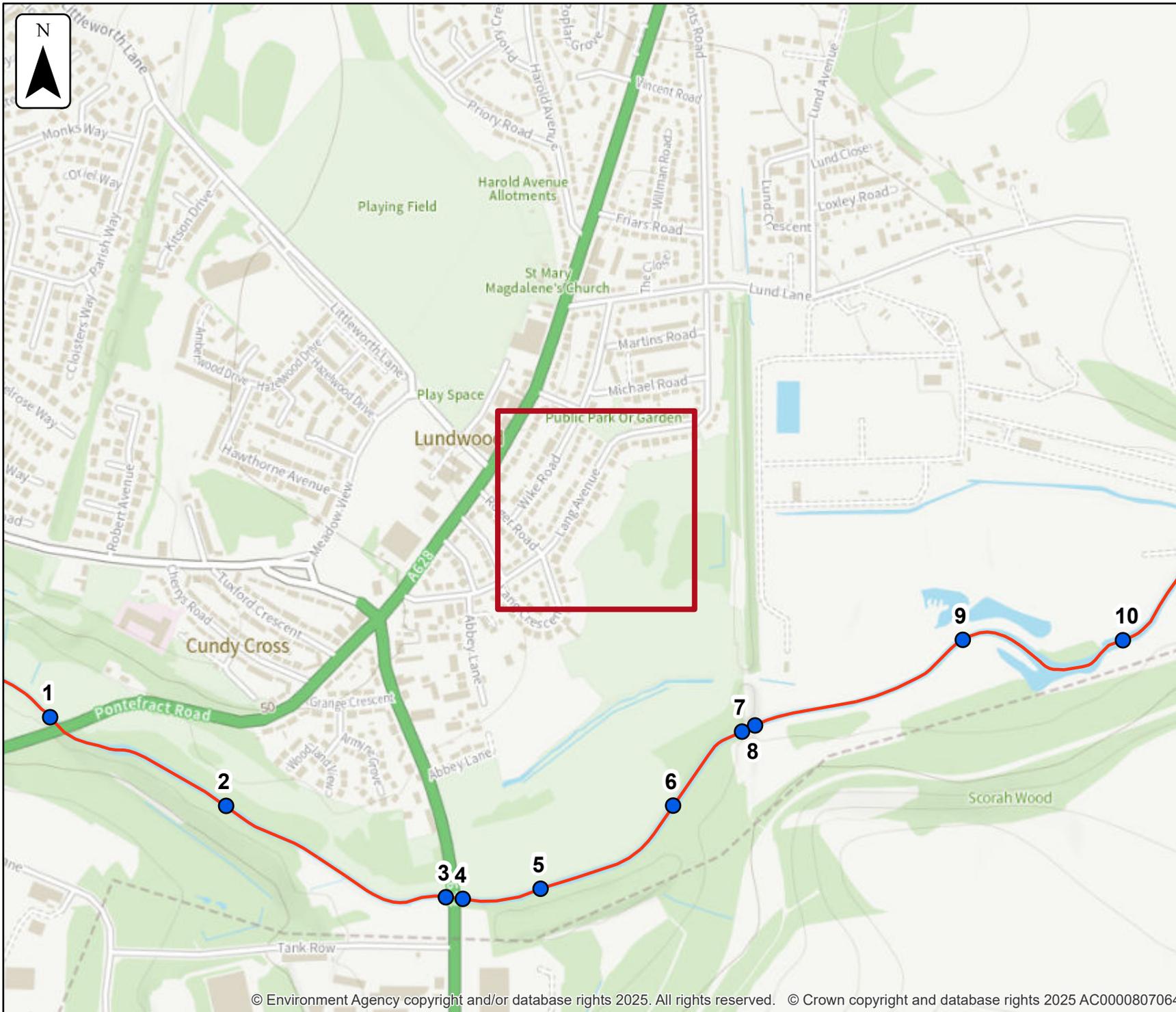
Defended modelled fluvial node locations

Location (easting/northing)
437428/406808

Scale Created
1:7,500 22 Sep 2025

Model name
River Don - Don Dearne. 2024 Middle

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	10% AEP	5% 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
1	1589033	436634	406509	35.84	37.24	37.58	37.85	37.94	38.20	38.96	39.32	40.03
2	1589048	436890	406381	34.94	36.38	36.70	36.96	37.02	37.36	38.23	38.67	39.31
3	1589269	437210	406249	34.40	36.03	36.48	36.79	36.85	37.14	38.01	38.45	39.12
4	1588939	437234	406247	34.40	35.77	36.43	36.76	36.82	37.12	37.99	38.43	39.10
5	1588940	437347	406261	34.25	35.74	36.40	36.65	36.69	37.08	37.96	38.40	39.08
6	1589111	437540	406381	34.02	35.44	36.19	36.45	36.52	36.72	37.78	38.26	38.97
7	1589067	437640	406488	33.80	35.23	36.04	36.21	36.23	36.41	37.05	37.41	37.91
8	1588942	437659	406497	33.80	35.23	36.03	36.19	36.22	36.39	36.98	37.31	37.71
9	1589143	437962	406620	33.55	35.06	35.91	36.07	36.10	36.15	36.63	36.92	37.26
10	1589162	438194	406620	33.51	35.06	35.91	36.02	36.05	36.17	36.67	36.97	37.31

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	10% AEP	5% 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	
1	1589033	436634	406509	24.59	64.13	81.43	93.48	99.90	124.13	197.95	238.82	308.03
2	1589048	436890	406381	24.58	64.03	81.49	96.39	102.22	123.86	197.44	238.21	307.37
3	1589269	437210	406249	24.57	63.34	80.81	95.73	100.89	123.22	196.47	236.78	306.02
4	1588939	437234	406247	24.57	63.34	80.81	95.73	100.89	123.22	196.47	236.78	306.02
5	1588940	437347	406261	24.57	63.01	81.53	105.38	112.19	125.94	196.01	236.22	305.44
6	1589111	437540	406381	24.57	62.41	79.93	104.86	109.32	122.78	195.44	235.58	304.76
7	1589067	437640	406488	24.56	62.33	79.46	110.17	113.56	122.92	195.30	235.47	304.62
8	1588942	437659	406497	24.56	62.33	79.46	110.17	113.56	122.92	195.30	235.47	304.62
9	1589143	437962	406620	24.16	33.76	35.53	35.29	32.66	34.16	39.50	42.34	38.25
10	1589162	438194	406620	22.76	34.06	34.12	34.08	33.85	34.10	35.14	34.66	34.60

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.



Defended modelled fluvial extent and height

Location (easting/northing)
437428/406808

Scale Created
1:2,500 22 Sep 2025

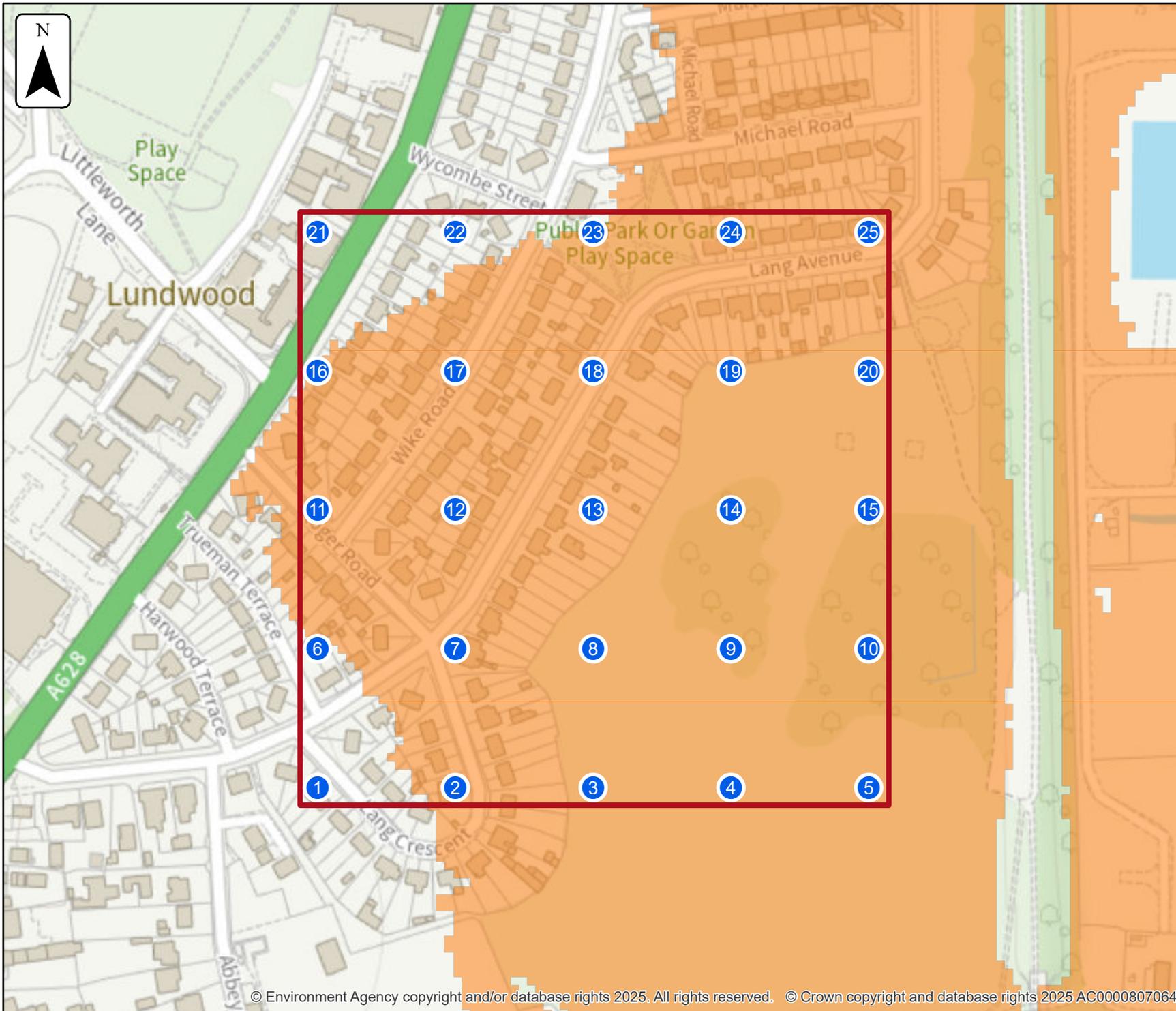
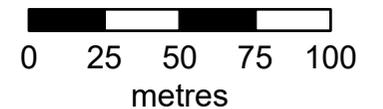
Model name
**River Don - Don
Dearne. 2024 Middle**

- Selected area
- Main river

Modelled 2D grid
Water level in mAOD

- 0 - 4.875
- 4.875 - 9.75
- 9.75 - 14.625
- 14.625 - 19.5
- 19.5 - 24.375
- 24.375 - 29.25
- 29.25 - 34.125
- 34.125 - 39.0
- 39.0 - 43.875

This map shows the
0.1% AEP height data



Sample point data

Defended

Label	Easting	Northing	50% AEP	10% AEP	5% 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
1	437294	406673	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	437361	406673	NoData	NoData	NoData	NoData	NoData	NoData	37.47	37.87	38.43
3	437428	406673	NoData	35.38	36.13	36.34	36.38	36.58	37.32	37.70	38.23
4	437495	406673	NoData	35.30	36.08	36.27	36.31	36.49	37.18	37.55	38.04
5	437562	406673	NoData	35.23	36.04	36.21	36.24	36.40	37.05	37.40	37.86
6	437294	406740	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	437361	406740	NoData	NoData	36.14	36.35	36.39	36.59	37.33	37.72	38.25
8	437428	406740	33.85	35.29	36.08	36.27	36.30	36.48	37.18	37.55	38.05
9	437495	406740	33.81	35.25	36.05	36.23	36.26	36.43	37.10	37.46	37.94
10	437562	406740	33.77	35.22	36.02	36.20	36.23	36.38	37.02	37.36	37.82
11	437294	406807	NoData	NoData	NoData	NoData	NoData	NoData	37.33	37.71	38.25
12	437361	406807	NoData	35.26	36.06	36.25	36.28	36.45	37.15	37.52	38.01

Label	Easting	Northing	50% AEP	10% AEP	5% 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
13	437428	406807	NoData	35.24	36.04	36.23	36.26	36.42	37.09	37.45	37.93
14	437495	406807	33.79	35.23	36.03	36.21	36.24	36.40	37.06	37.41	37.88
15	437562	406807	33.75	35.20	36.02	36.19	36.22	36.37	37.00	37.34	37.79
16	437294	406874	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	38.08
17	437361	406874	NoData	NoData	NoData	NoData	NoData	36.42	37.09	37.45	37.92
18	437428	406874	NoData	NoData	36.03	36.20	36.23	36.39	37.03	37.38	37.83
19	437495	406874	NoData	NoData	36.02	36.19	36.22	36.37	36.99	37.33	37.78
20	437562	406874	NoData	35.19	36.01	36.18	36.20	36.35	36.96	37.29	37.72
21	437294	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	437361	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
23	437428	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	37.79
24	437495	406941	NoData	NoData	NoData	NoData	NoData	36.35	36.95	37.28	37.71

Label	Easting	Northing	50% AEP	10% AEP	5% 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
25	437562	406941	NoData	35.17	35.99	36.16	36.18	36.32	36.89	37.22	37.62
Max value in selected area:			33.90	35.44	36.18	36.41	36.45	36.67	37.48	37.91	38.53

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.

'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	10% AEP	5% 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
1	437294	406673	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	437361	406673	NoData	NoData	NoData	NoData	NoData	NoData	0.02	0.42	0.99
3	437428	406673	NoData	0.91	1.66	1.87	1.91	2.11	2.84	3.23	3.75
4	437495	406673	0.04	1.49	2.27	2.46	2.49	2.67	3.37	3.73	4.23
5	437562	406673	NoData	1.14	1.94	2.12	2.15	2.31	2.95	3.30	3.76
6	437294	406740	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	437361	406740	NoData	NoData	0.48	0.70	0.73	0.94	1.68	2.07	2.60
8	437428	406740	0.16	1.61	2.39	2.58	2.62	2.80	3.50	3.87	4.36
9	437495	406740	0.44	1.88	2.68	2.86	2.89	3.06	3.73	4.09	4.56
10	437562	406740	0.46	1.91	2.72	2.89	2.92	3.08	3.71	4.06	4.51
11	437294	406807	NoData	NoData	NoData	NoData	NoData	NoData	0.17	0.56	1.10
12	437361	406807	NoData	0.06	0.86	1.04	1.08	1.25	1.95	2.32	2.81

Label	Easting	Northing	50% AEP	10% AEP	5% 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
13	437428	406807	NoData	1.12	1.92	2.10	2.13	2.29	2.97	3.33	3.81
14	437495	406807	0.30	1.74	2.55	2.73	2.76	2.92	3.58	3.93	4.40
15	437562	406807	0.40	1.85	2.66	2.84	2.87	3.01	3.65	3.99	4.44
16	437294	406874	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.24
17	437361	406874	NoData	NoData	NoData	NoData	NoData	0.11	0.78	1.14	1.62
18	437428	406874	NoData	NoData	0.46	0.64	0.67	0.82	1.47	1.81	2.27
19	437495	406874	NoData	NoData	0.53	0.71	0.74	0.88	1.51	1.85	2.29
20	437562	406874	NoData	1.00	1.81	1.98	2.01	2.15	2.76	3.10	3.53
21	437294	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	437361	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
23	437428	406941	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.17
24	437495	406941	NoData	NoData	NoData	NoData	NoData	0.03	0.63	0.97	1.39

Label	Easting	Northing	50% AEP	10% AEP	5% 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
25	437562	406941	NoData	0.18	1.00	1.16	1.19	1.32	1.90	2.22	2.63
Max value in selected area:			0.75	2.20	3.01	3.18	3.21	3.36	3.99	4.34	4.79

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Defences removed modelled fluvial extent and height

Location (easting/northing)
437428/406808

Scale Created
1:2,500 22 Sep 2025

Model name
**River Don - Don
Dearne. 2024 Middle**

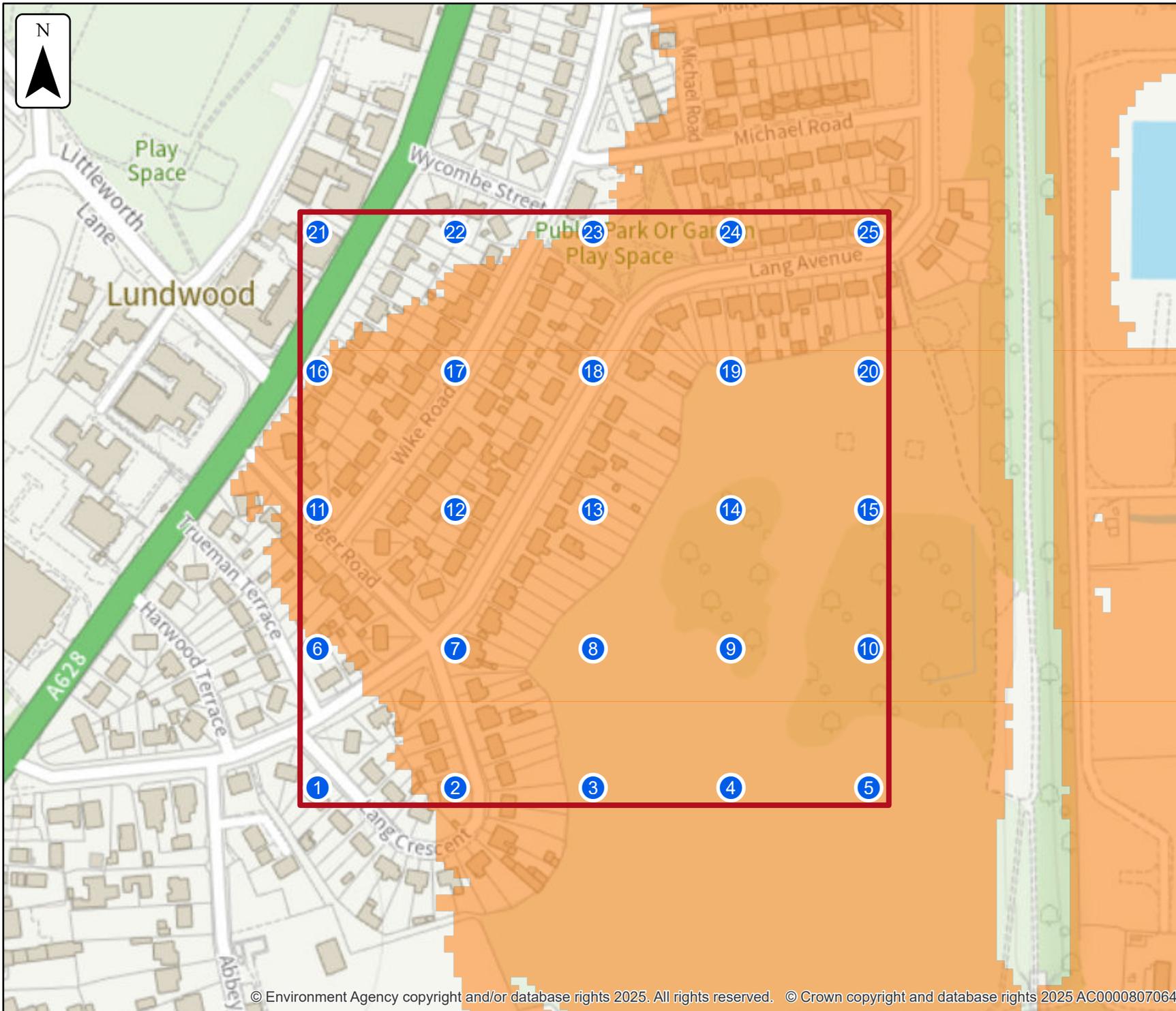
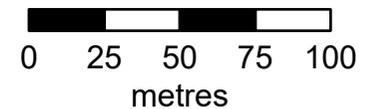
 Selected area

 Main river

Modelled 2D grid
Water level in mAOD

-  0 - 4.875
-  4.875 - 9.75
-  9.75 - 14.625
-  14.625 - 19.5
-  19.5 - 24.375
-  24.375 - 29.25
-  29.25 - 34.125
-  34.125 - 39.0
-  39.0 - 43.875

This map shows the
0.1% AEP height data



Sample point data

Defences removed

Label	Easting	Northing	1% AEP	0.1% AEP	1% AEP	0.1% AEP
			Height	Height	Depth	Depth
1	437294	406673	NoData	NoData	NoData	NoData
2	437361	406673	NoData	38.43	0.00	0.99
3	437428	406673	37.30	38.23	2.82	3.75
4	437495	406673	37.16	38.04	3.35	4.23
5	437562	406673	37.03	37.86	2.94	3.76
6	437294	406740	NoData	NoData	NoData	NoData
7	437361	406740	37.31	38.25	1.66	2.60
8	437428	406740	37.16	38.05	3.48	4.36
9	437495	406740	37.08	37.94	3.71	4.57
10	437562	406740	37.00	37.82	3.70	4.51
11	437294	406807	37.31	38.25	0.15	1.10
12	437361	406807	37.13	38.01	1.93	2.81

Label	Easting	Northing	1% AEP	0.1% AEP	1% AEP	0.1% AEP
			Height	Height	Depth	Depth
13	437428	406807	37.08	37.93	2.95	3.81
14	437495	406807	37.04	37.88	3.56	4.40
15	437562	406807	36.98	37.79	3.63	4.44
16	437294	406874	NoData	38.08	NoData	0.25
17	437361	406874	37.07	37.92	0.77	1.62
18	437428	406874	37.01	37.83	1.45	2.27
19	437495	406874	36.97	37.78	1.49	2.29
20	437562	406874	36.94	37.73	2.74	3.53
21	437294	406941	NoData	NoData	NoData	NoData
22	437361	406941	NoData	NoData	NoData	NoData
23	437428	406941	NoData	37.79	NoData	0.17
24	437495	406941	36.93	37.71	0.62	1.40

Label	Easting	Northing	1% AEP	0.1% AEP	1% AEP	0.1% AEP
			Height	Height	Depth	Depth
25	437562	406941	36.87	37.63	1.88	2.63
Max value in selected area:			37.45	38.53	3.98	4.80

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Defended climate change modelled fluvial extent and height

Location (easting/northing)
437428/406808

Scale Created
1:2,500 22 Sep 2025

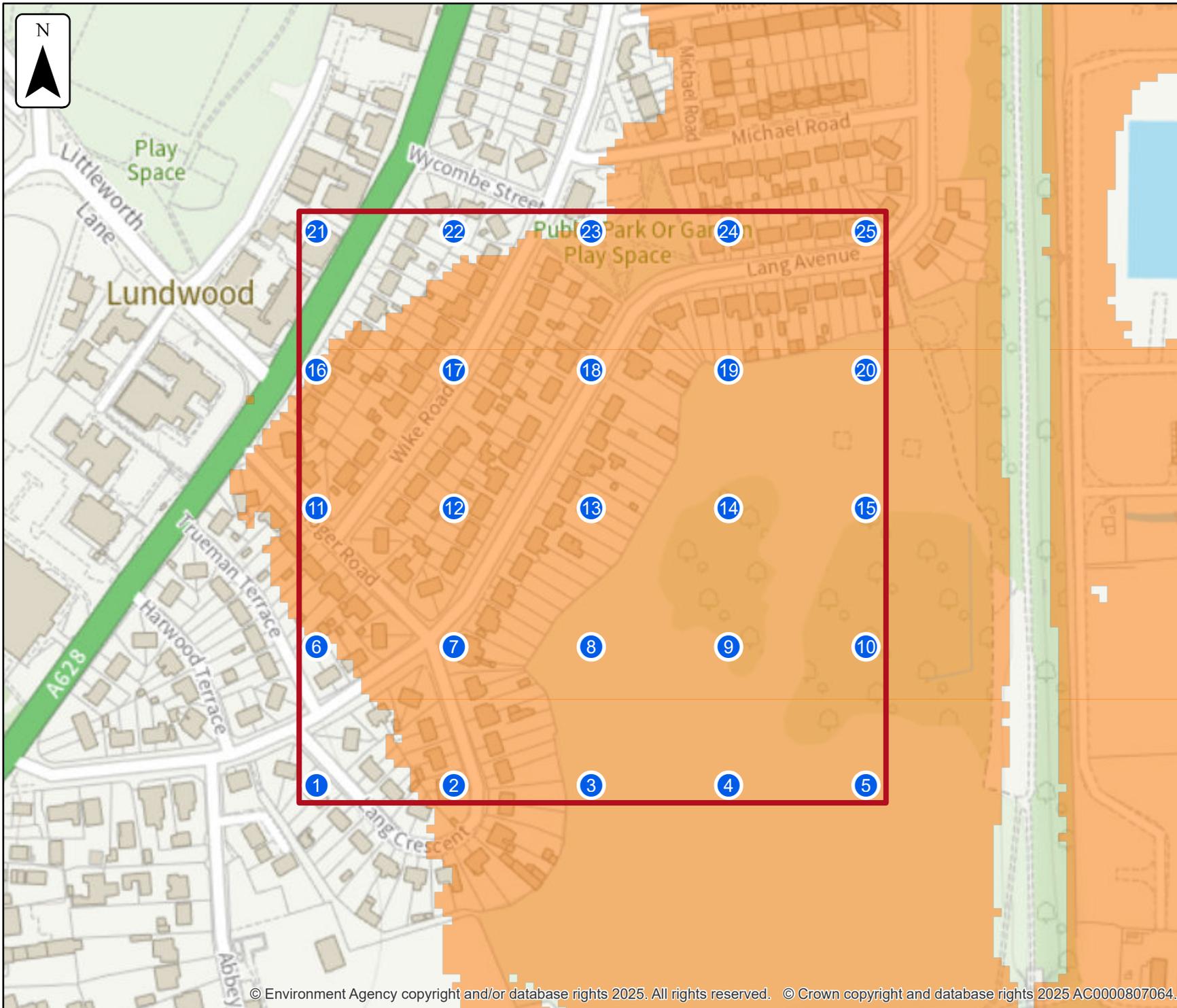
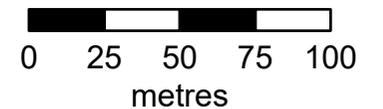
Model name
River Don - Don Dearne. 2024 Middle

- Selected area
- Main river

Modelled 2D grid
Water level in mAOD

- 0 - 4.875
- 4.875 - 9.75
- 9.75 - 14.625
- 14.625 - 19.5
- 19.5 - 24.375
- 24.375 - 29.25
- 29.25 - 34.125
- 34.125 - 39.0
- 39.0 - 43.875

This map shows the
1% AEP +60% height data



Sample point data

Defended climate change

Label	Easting	Northing	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)
			Height	Height	Height	Depth	Depth	Depth
1	437294	406673	NoData	NoData	NoData	NoData	NoData	NoData
2	437361	406673	37.98	38.15	38.49	0.54	0.70	1.05
3	437428	406673	37.81	37.96	38.29	3.33	3.49	3.81
4	437495	406673	37.65	37.79	38.10	3.84	3.98	4.28
5	437562	406673	37.49	37.62	37.91	3.40	3.53	3.81
6	437294	406740	NoData	NoData	NoData	NoData	NoData	NoData
7	437361	406740	37.83	37.98	38.31	2.18	2.33	2.66
8	437428	406740	37.65	37.80	38.10	3.97	4.11	4.42
9	437495	406740	37.56	37.70	37.99	4.18	4.32	4.62
10	437562	406740	37.46	37.59	37.87	4.15	4.28	4.56
11	437294	406807	37.82	37.98	38.31	0.67	0.83	1.16
12	437361	406807	37.62	37.77	38.07	2.42	2.56	2.87

Label	Easting	Northing	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)
			Height	Height	Height	Depth	Depth	Depth
13	437428	406807	37.55	37.69	37.98	3.43	3.57	3.86
14	437495	406807	37.51	37.64	37.93	4.02	4.16	4.45
15	437562	406807	37.43	37.57	37.84	4.08	4.21	4.49
16	437294	406874	NoData	NoData	38.13	NoData	NoData	0.30
17	437361	406874	37.54	37.68	37.97	1.24	1.38	1.67
18	437428	406874	37.47	37.60	37.88	1.91	2.04	2.32
19	437495	406874	37.42	37.55	37.82	1.94	2.07	2.34
20	437562	406874	37.38	37.51	37.77	3.19	3.31	3.58
21	437294	406941	NoData	NoData	NoData	NoData	NoData	NoData
22	437361	406941	NoData	NoData	NoData	NoData	NoData	NoData
23	437428	406941	NoData	NoData	37.84	NoData	NoData	0.22
24	437495	406941	37.37	37.49	37.75	1.05	1.18	1.44

Label	Easting	Northing	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)	1% AEP (+28%)	1% AEP (+38%)	1% AEP (+60%)
			Height	Height	Height	Depth	Depth	Depth
25	437562	406941	37.30	37.42	37.67	2.30	2.42	2.68
Max value in selected area:			38.02	38.20	38.59	4.43	4.56	4.85

Data in this table comes from the River Don - Don Dearne. 2024 Middle and Lower Don Recalibrated 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.

'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 Barnsley 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

Appendix C: Flood Warning and Evacuation Plan

1. Purpose

This appendix sets out the procedures for monitoring flood risks, issuing warnings, and coordinating safe evacuation. Its purpose is to ensure the safety of all staff, children, visitors, and property during flood events.

2. Flood Warning System

2.1 Monitoring Flood Risk

Flood conditions will be monitored through the following sources:

- National and local meteorological alerts
- Environment Agency river level monitoring
- Local authority emergency management updates
- On-site observations from staff on duty

2.2 Warning Stages

Stage 1 – Flood Watch

- Heavy rainfall forecast or rising water levels observed
- Staff notified through internal communication
- Preparedness checks carried out (drainage, access routes, equipment)

Stage 2 – Flood Warning

- Water levels indicate potential impact on the site
- Essential areas secured: equipment, important documents, electrical systems
- Evacuation team activated
- Vulnerable individuals identified and briefed

Stage 3 – Severe Flood / Evacuation Order

- Flooding is imminent or occurring
- Mandatory evacuation of all occupants
- Emergency services contacted if required
- Assistance provided for anyone needing help

3. Evacuation Plan

3.1 Evacuation Routes

Primary evacuation routes will follow the safest, highest-ground paths away from flood-risk areas.

Evacuation route maps should be displayed at:

- Main entrances
- Staff rooms and communal areas
- Safety noticeboards

3.2 Assembly Points

Assembly points must be:

- Located outside the flood-risk zone
- Accessible by foot and vehicle
- Clearly marked and communicated to staff and residents

3.3 Evacuation Procedure

- Stop all activity immediately when evacuation is ordered
- Move along designated routes to the nearest assembly point
- Assist visitors and vulnerable residents (children)
- Supervisors conduct roll call and confirm everyone is accounted for
- Remain at the assembly point until emergency services confirm safe return

4. Roles and Responsibilities

4.1 Flood Response Coordinator

- Monitors flood alerts and conditions
- Decides when to escalate warning levels
- Communicates with emergency services

4.2 Evacuation Team

- Guides residents and visitors during evacuation
- Ensures buildings are fully cleared
- Secures critical items where safe

4.3 All Staff

- Follow evacuation instructions promptly
- Report immediately to the designated assembly point
- Do not re-enter the building until formally cleared

5. Communication

Flood warnings and instructions will be communicated through:

- SMS alerts
- Email notifications
- Phone or PA announcements
- Two-way radios for on-site coordination

All messages must be clear, simple, and repeated until acknowledged.

6. Post-Flood Actions

Once authorities confirm the area is safe:

- Conduct a full site safety inspection
- Check electrical, structural, and mechanical systems before re-entry
- Record any damage and begin necessary repairs
- Review and update the Flood Plan based on lessons learned