



MetroWest+

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

**6.25, Environmental Statement, Volume 4, Appendix 17.1, Flood Risk Assessment,
Part 3 of 17**

**Appendix B Part 2 of 2, Environment Agency flood maps and modelled flood levels
information (Pill to Parson Street Junction)**

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)

Regulations 2009, regulation 5(2)(a)

Planning Act 2008

Author: CH2M



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ENTERPRISE
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WEST OF
ENGLAND
Combined Authority



HM Government

Bath & North East
Somerset Council



North
Somerset
council



travelwest+

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Document history

Project	Portishead Branch Line (MetroWest Phase 1) Development Consent Order Scheme
Planning Inspectorate Scheme Reference	TR040011
Volume and Application Document Reference	6, 6.25
Document title	Environmental Statement, Volume 4, Appendix 17.1, Flood Risk Assessment, Part 3 of 17 Appendix B Part 2 of 2, Environment Agency flood maps and modelled flood levels information (Pill to Parson Street Junction)
Regulation Number	Regulation 5(2)(a)
Applicant	North Somerset District Council
Lead Author	RB at CH2M

Version	Date	Status of Version
Rev: 01	12/11/19	Application Issue



Robert Bird
CH2M HILL
robert.bird@ch2m.com

Our ref: SW/8936 [SW6012]
Your ref:
Date: 08 December 2014

Dear Mr Bird

Provision of – Product 4: for

Pill to Ashgate (Bedminster) rail link extension

Thank you for your request of 11 November 2014 to use Environment Agency data, Product 4 Detailed FRA map, in the development of the Pill to Ashgate (Bedminster) rail link extension FRA. Please find the information attached. We have previously provided data from Pill to Portishead under your previous request SW/6012.

Flood Map for Planning (Rivers and the Sea)

In particular, a Flood Map for Planning (Rivers and the Sea) is attached for spatial planning purposes. This map contains Flood Zones that show the areas of natural floodplain that would flood if there were no raised flood defences.

If you have requested this information to help inform a development proposal, then you should also note the detail in the attached advisory text on the use of Environment Agency Information for Flood Risk Assessments.

Risk of Flooding from Rivers and the Sea

The Risk of Flooding from Rivers and the Sea map, also attached, describes the actual chance of flooding. It shows the areas at risk of flooding from rivers and the sea whilst taking into account the presence of any flood defences, their condition and water level information.

Flood Levels

We also attach 4 maps and data tables, which contains a set of in-channel modelled flood level node locations identifiers for the River Avon, Colliters Brook and Malago River, taken from the Bristol Central Area Flood Risk Assessment (CAFRA) 2012 1D-2D Isis-Tuflow model. We have recently completed a review of this model data and advise that the data is suitable for the purpose of your Flood Risk Assessment. As the data is taken from a different model it may not necessarily fit with what our mapping shows. We will be updating our flood mapping for Bristol in due course.

Please note this data is the property of Bristol City Council and is provided with their permission for the purpose of the flood risk assessment for the above named site. The data is subject to the terms and conditions within the enclosed Standard Notice below which we advise you read and note the conditions therein.

The Environment Agency

South West Region, Manley House, Kestrel Way, Exeter, Devon EX2 7LQ
Direct Dial: 01392 352400
Email: southwestenquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

2D Maximum Depth and Level data

Please see the table below for maximum 2D depth and level information for your site for a range of return periods. Please note that the maximum flood depths include all low points within your site of interest, which include watercourses, and low ground spots. This information is taken from the Bristol CAFRA model. We have recently completed a review of this model data and advise that the data is suitable for the purpose of your Flood Risk Assessment. As the data is taken from a different model it may not necessarily fit with what our flood mapping shows. We will be updating our flood mapping for Bristol in due course.

[Please note that the labels annotated to the Flood Map are unique node identifiers and not the associated flood levels.]

Please see the table below for maximum 2D depth and level information for your site for a range of return periods. Please note that the maximum flood depths include all low points within your site of interest, which include watercourses and low ground spots.

FLUVIAL DEFENDED

1% (1 in 100) AEP Fluvial Depth	4.34 m
0.1% (1 in 1000) AEP Fluvial Depth	4.35 m
1% (1 in 100) AEP Fluvial Level	7.53 mAOD
0.1% (1 in 1000) AEP Tidal Level	7.82 mAOD

FLUVIAL UNDEFENDED

1% (1 in 100) AEP Fluvial Depth	4.34 m
0.1% (1 in 1000) AEP Fluvial Depth	4.35 m
1% (1 in 100) AEP Fluvial Level	7.53 mAOD
0.1% (1 in 1000) AEP Tidal Level	7.82 mAOD

TIDAL DEFENDED

1% (1 in 100) AEP Tidal Depth	5.92 m
0.5% (1 in 200) AEP Tidal Depth	6.03 m
0.1% (1 in 1000) AEP Tidal Depth	6.26 m
0.1% (1 in 1000) AEP Tidal Level	9.52 mAOD

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TIDAL UNDEFENDED

1% (1 in 100) AEP Tidal Depth	5.92 m
0.5% (1 in 200) AEP Tidal Depth	6.03 m
0.1% (1 in 1000) AEP Tidal Depth	6.26 m
0.5% (1 in 200) AEP Tidal Level	9.28 mAOD
0.1% (1 in 1000) AEP Tidal Level	9.52 mAOD

Please find attached maps for both Defended and Undefended Tidal Level and Depth to show the 0.5% and 0.1% data.

Historic Flood Events

The historic records indicate that the area was previously flooded in 1703, 1896, 1937, 1954, 1958, 1960, 1965, 1968, 1971, 1974, 1981, 1989, 1990, 1999. Please find attached PDF maps showing the approximate flood outlines, and an additional table giving further information on these events.

Please note we cannot guarantee that it is an exhaustive list of all past flood events in this location. The extents of the flooded areas are mapped and validated from the best available on-the-ground evidence collated by the authorities at the time of these events. All reasonable care has been taken to ensure the historical flood event outlines are as accurate as possible, but the Environment Agency will update the outlines if new evidence emerges.

Flood Defences

Please find enclosed details of Flood Defences within the vicinity of the site boundary. This information has been taken from our Asset Information Management System database (AIMS).

Main River and Flood Defence Consents

The “bank top ePlanning tool” shown on the Main River Location Map indicates a band of 20m adjacent to each bank of a designated Main River, shown by the red line.

Under the terms of the Water Resources Act 1991 and the Land Drainage Byelaws, the prior written consent of the Agency is required for any proposed works or structures in, under, over or within 8 metres of the top of the bank of the River the main river line for the River Avon., designated a 'main river'. **The need for Flood Defence Consent is over and above the need for planning permission.** A Flood Defence consent form is available on our Environment Agency website at: <https://www.gov.uk/government/publications/flood-defence-consent-england-and-wales>

To discuss the scope of our controls please contact Nigel Smith in our Partnership & Strategic Overview team on 01278 484826.

Further Information

We advise that you also contact the drainage engineer, Patrick Goodey, on 01179 223206 at Bristol City Council, Brunel House, St Georges Road, Bristol, BS1 5UY.

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Email: patrick.goodey@bristol.gov.uk as he may be able to provide further advice with respect to localised flooding and drainage issues.

Further details about the Environment Agency information supplied can be found on our website:
<https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

Water Maps: <http://watermaps.environment-agency.gov.uk>

NaFRA: <http://publications.environment-agency.gov.uk/pdf/GEHO0609BQDS-E-E.pdf>

We hope you find this information helpful and it is provided subject to the notice overleaf, which we strongly recommend you read.

We would be really grateful if you could spare five minutes to help us improve our service. Please click on the link below and fill in our survey – we use every piece of feedback we receive. Thankyou

<https://feedback1.environmentagency.uk.com/s3/4e7ffdec7bfc>

Yours sincerely

Maggie Summerfield

Customer & Engagement, Wessex
Environment Agency
Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS

Direct Dial Bridgwater: 01278 484813

Direct Dial Blandford: 01258 483396

Email: wessexenquiries@environment-agency.gov.uk



From December 2014, please send ALL requests for information and enquiries for:

- Wessex Area to: wessexenquiries@environment-agency.gov.uk
- Devon & Cornwall Area to: devoncornwallenquiries@environment-agency.gov.uk

Please note our new telephone number and email address

Enc:

Standard Notice (below)

SW/8936 a Flood Map for Planning (Rivers and the Sea) x 5

SW/8936 a Risk of Flooding from Rivers and the Sea map x 5

SW/8936 a Modelled Node Location Map with Main river line x 4

SW/8936 Node Data table

SW/8936 Historic Data table

SW/8936 Historic Maps x 3

SW/8936 Defence Maps

SW/8936 Defence Data table

SW/8936 Location map showing e-bank tool and main river line

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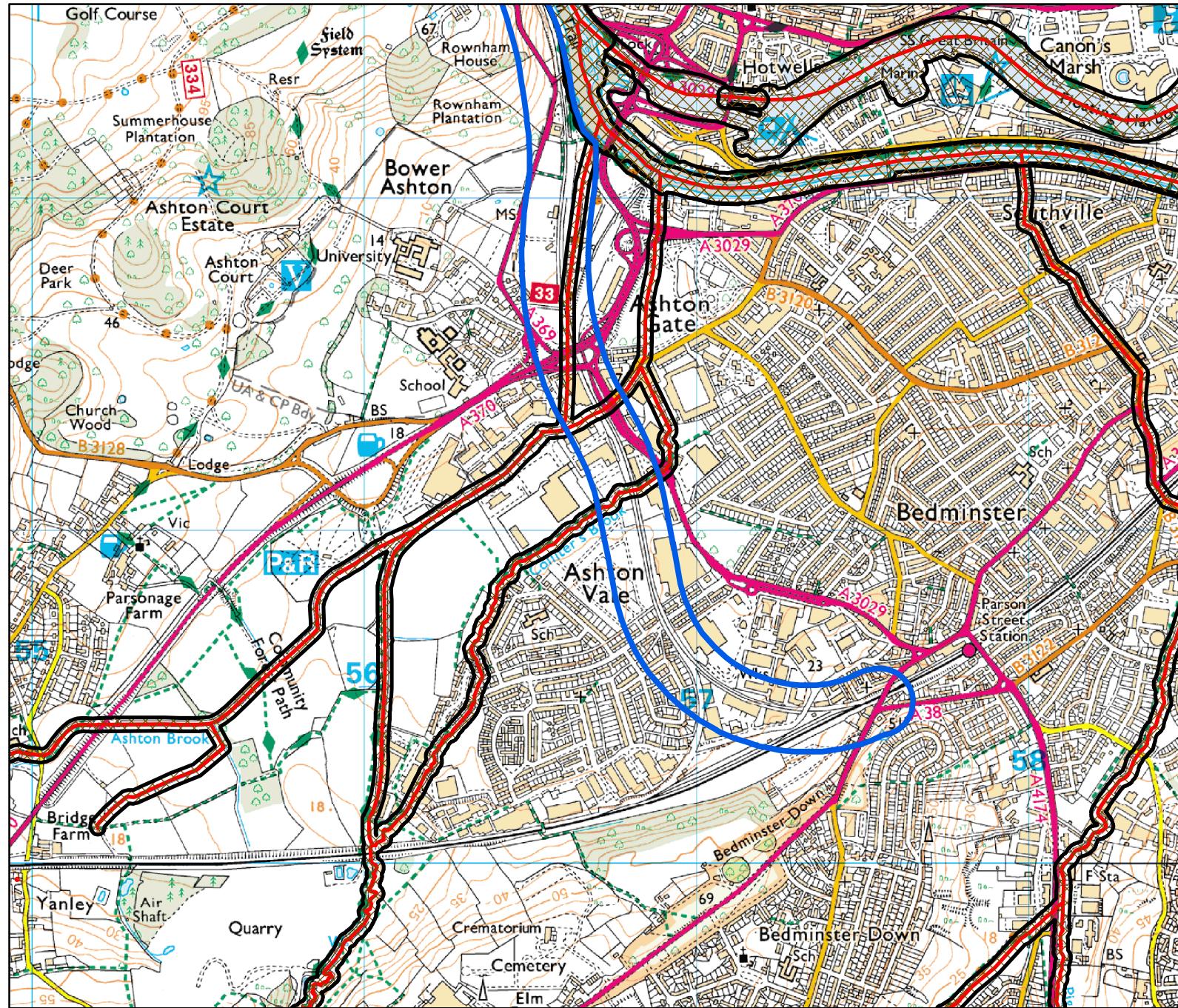
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Scale: 1:16,838



Legend

- Radius_100m
- e_bank_tool
- Main River Line

Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.



Scale: 1:26,309



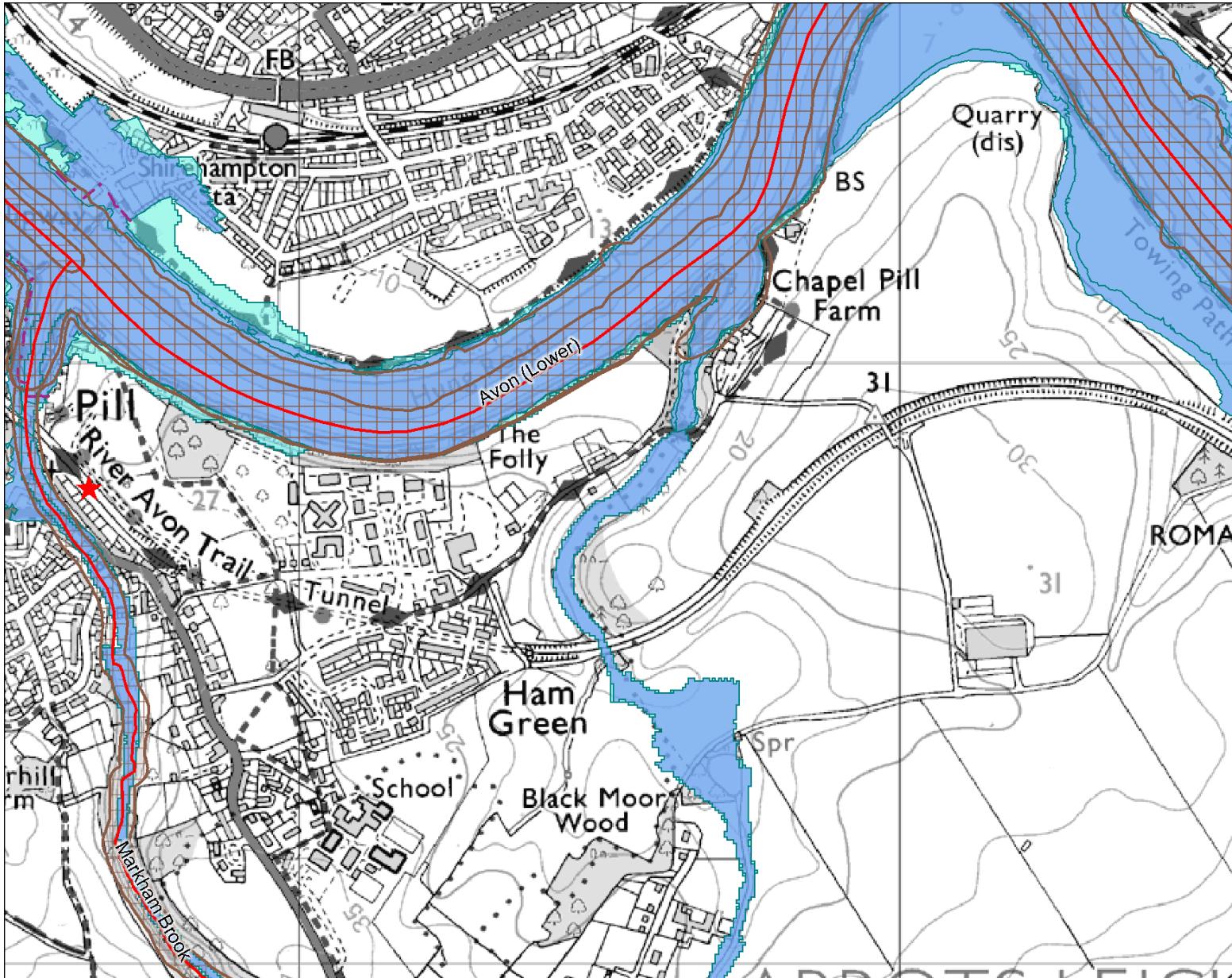
Legend

- Radius_100m
- e_bank_tool
- Main River Line

Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.

Flood map for planning - starting at ST 52652 75790 - created 21 November 2014 [Ref: SW/8936]



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Scale 1:10,001



Flood Map for Planning (Rivers and Sea)

- Sealed Main Rivers
- Bank Top ePlanning Tool
- Flood Map - Defences
- Areas Benefiting from Flood Defences
- Flood Map - Flood Storage Areas
- Flood Map - Flood Zone 3
- Flood Map - Flood Zone 2

Flood Map for Planning (Rivers and Sea) (assuming no defences)

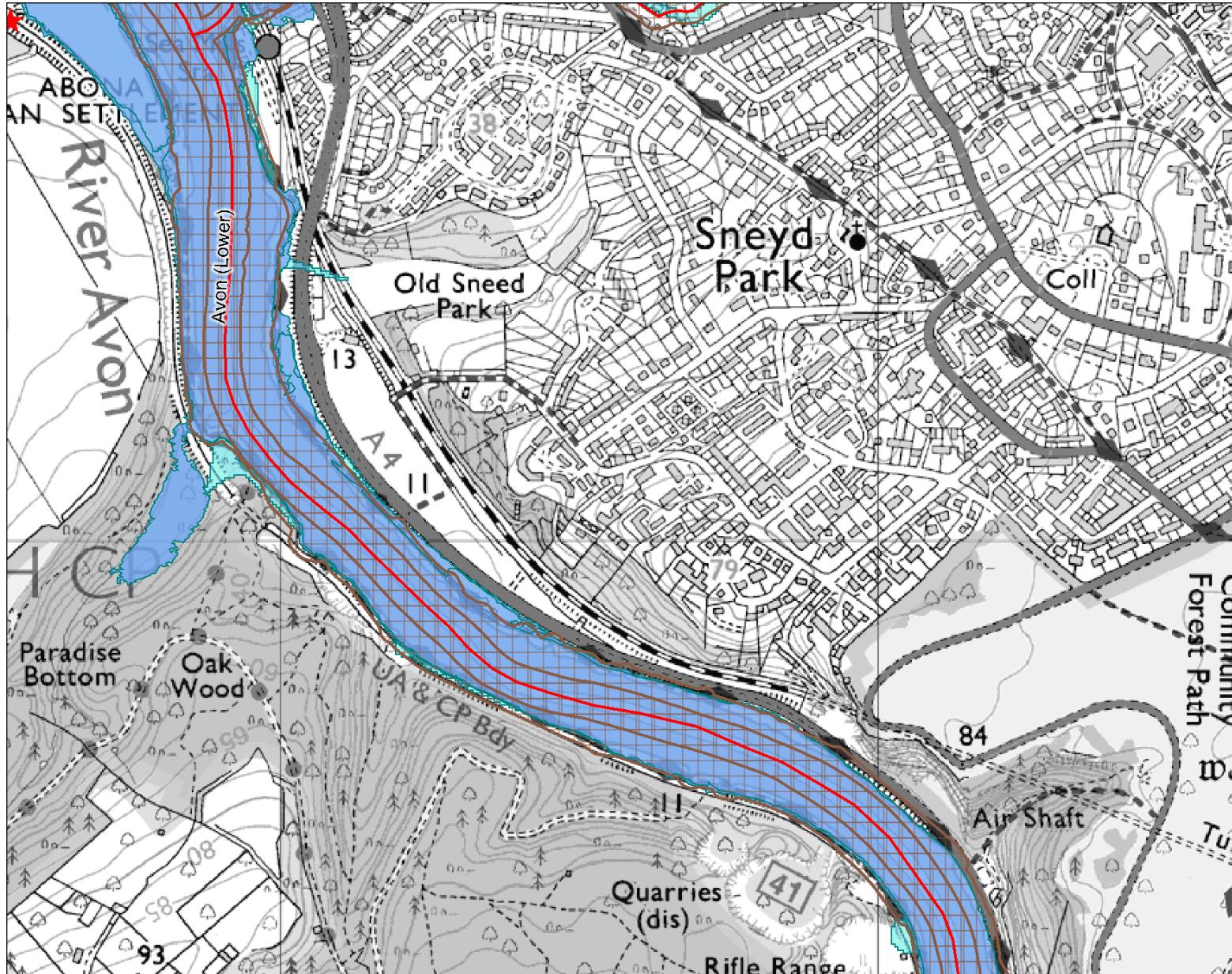
Flood Zone 3 shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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Flood map for planning - starting at ST 54551 75868 - created 21 November 2014 [Ref: SW/8936]



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Flood Map for Planning (Rivers and Sea)

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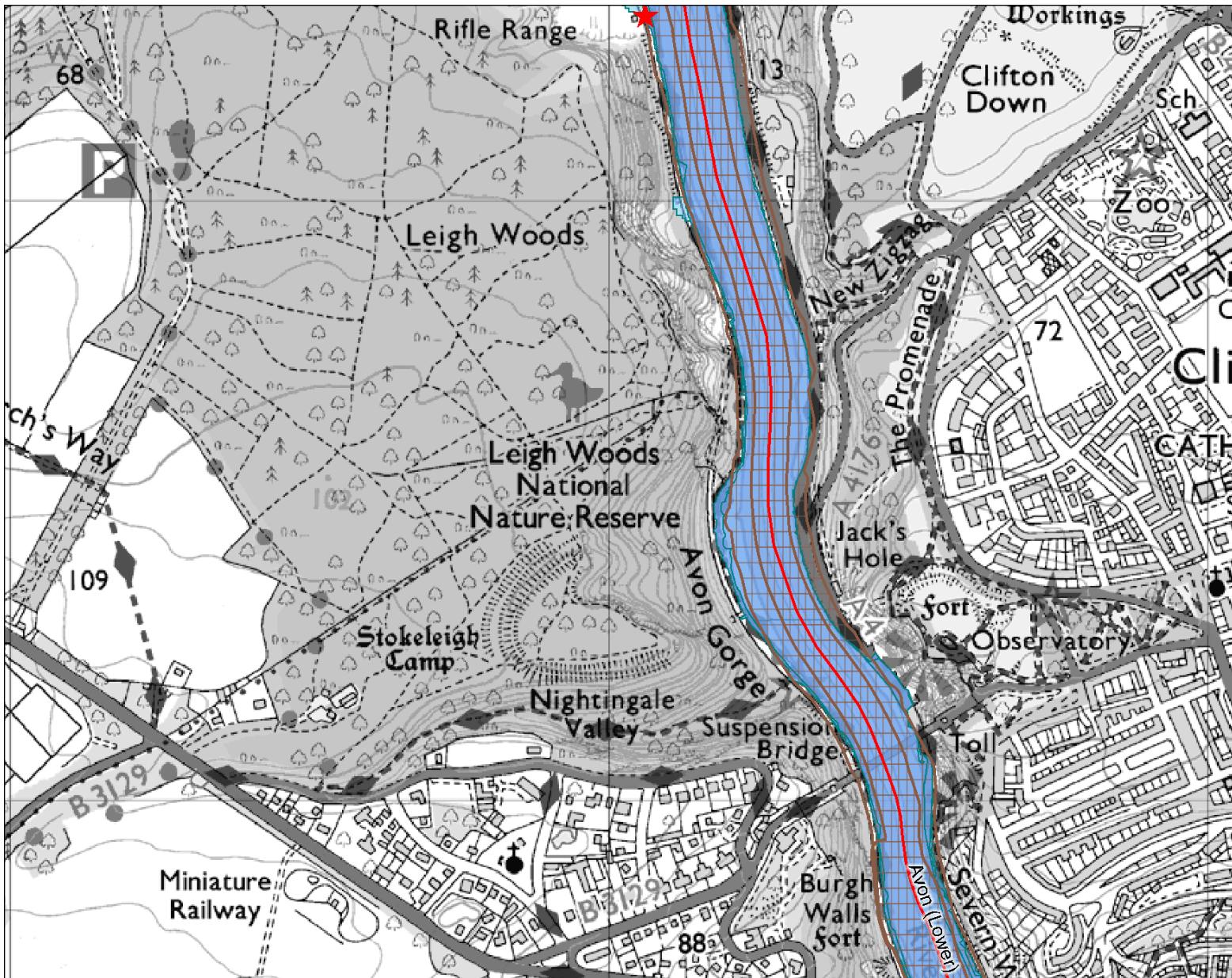
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Flood map for planning - starting at ST 56063 74307 - created 21 November 2014 [Ref: SW/8936]



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Flood Map for Planning (Rivers and Sea)

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- Bank Top ePlanning Tool
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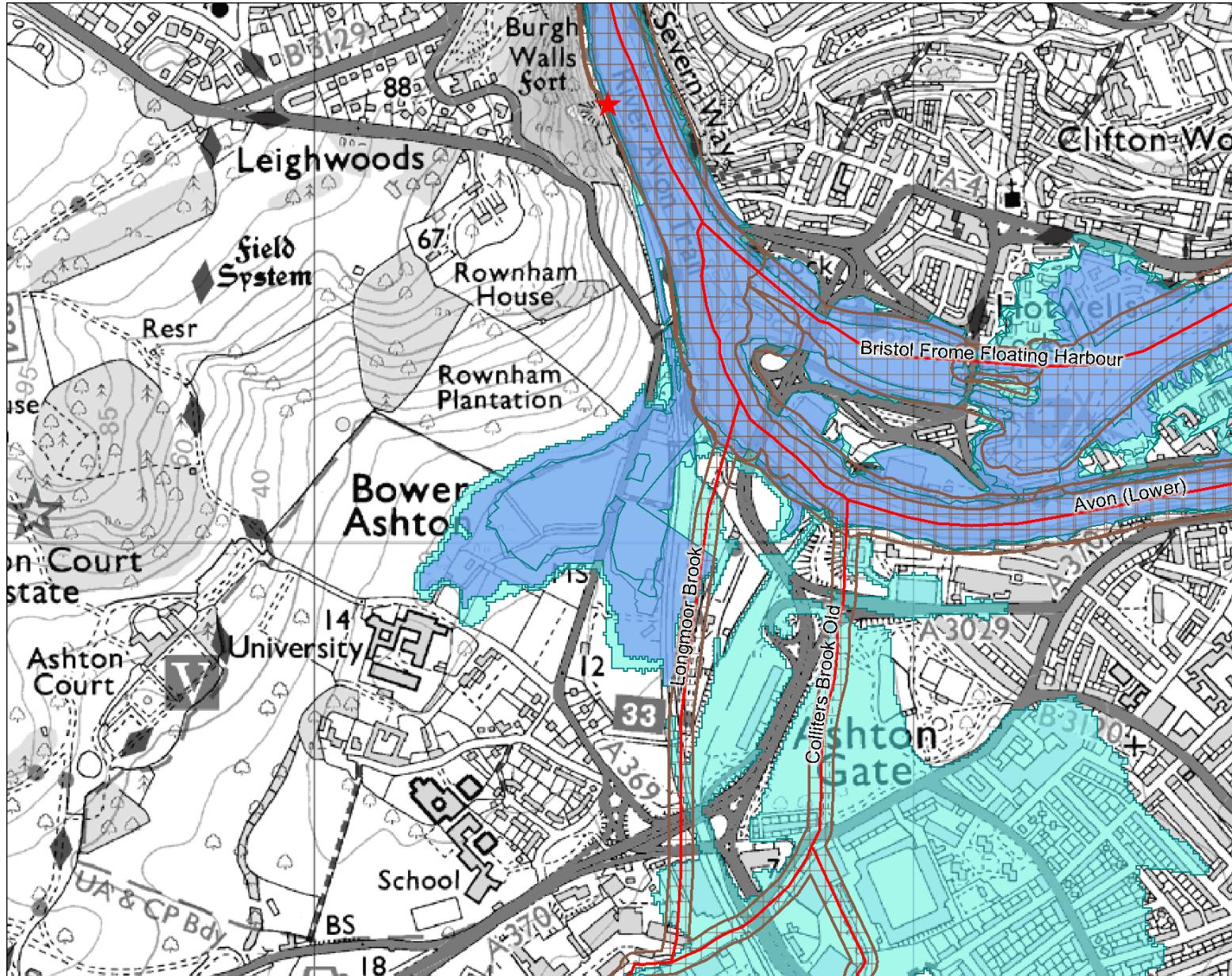
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Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

Flood map for planning - starting at ST 56493 72730 - created 21 November 2014 [Ref: SW/8936]



Scale 1:10,001



Flood Map for Planning (Rivers and Sea)

- Sealed Main Rivers
- Bank Top ePlanning Tool
- Flood Map - Defences
- Areas Benefiting from Flood Defences
- Flood Map - Flood Storage Areas
- Flood Map - Flood Zone 3
- Flood Map - Flood Zone 2

Flood Map for Planning (Rivers and Sea) (assuming no defences)

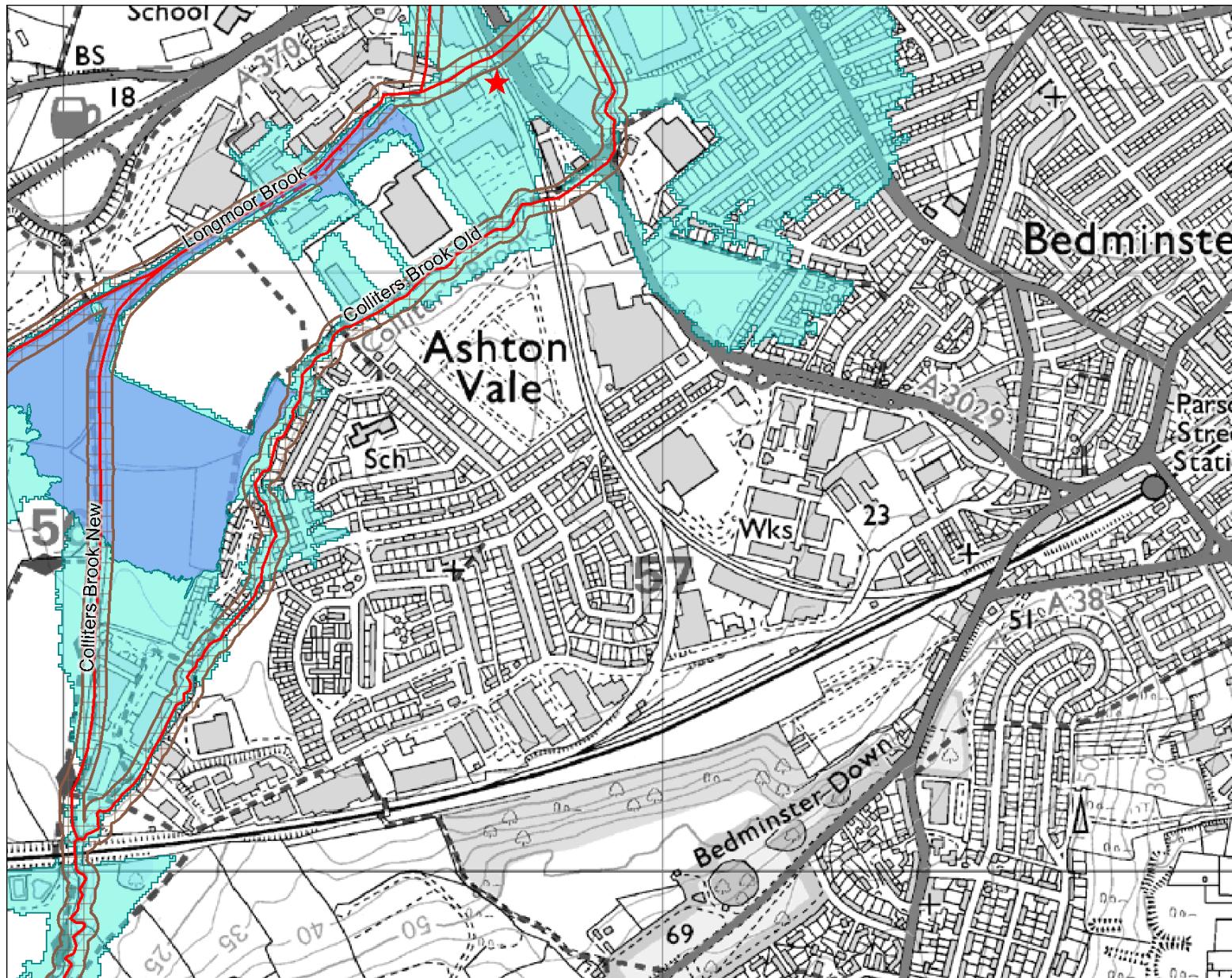
Flood Zone 3 shows the area that could be affected by flooding:

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Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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Flood map for planning - starting at ST 56726 71315 - created 21 November 2014 [Ref: SW/8936]



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Flood Map for Planning (Rivers and Sea)

- Sealed Main Rivers
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- Flood Map - Flood Storage Areas
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Flood Map for Planning (Rivers and Sea) (assuming no defences)

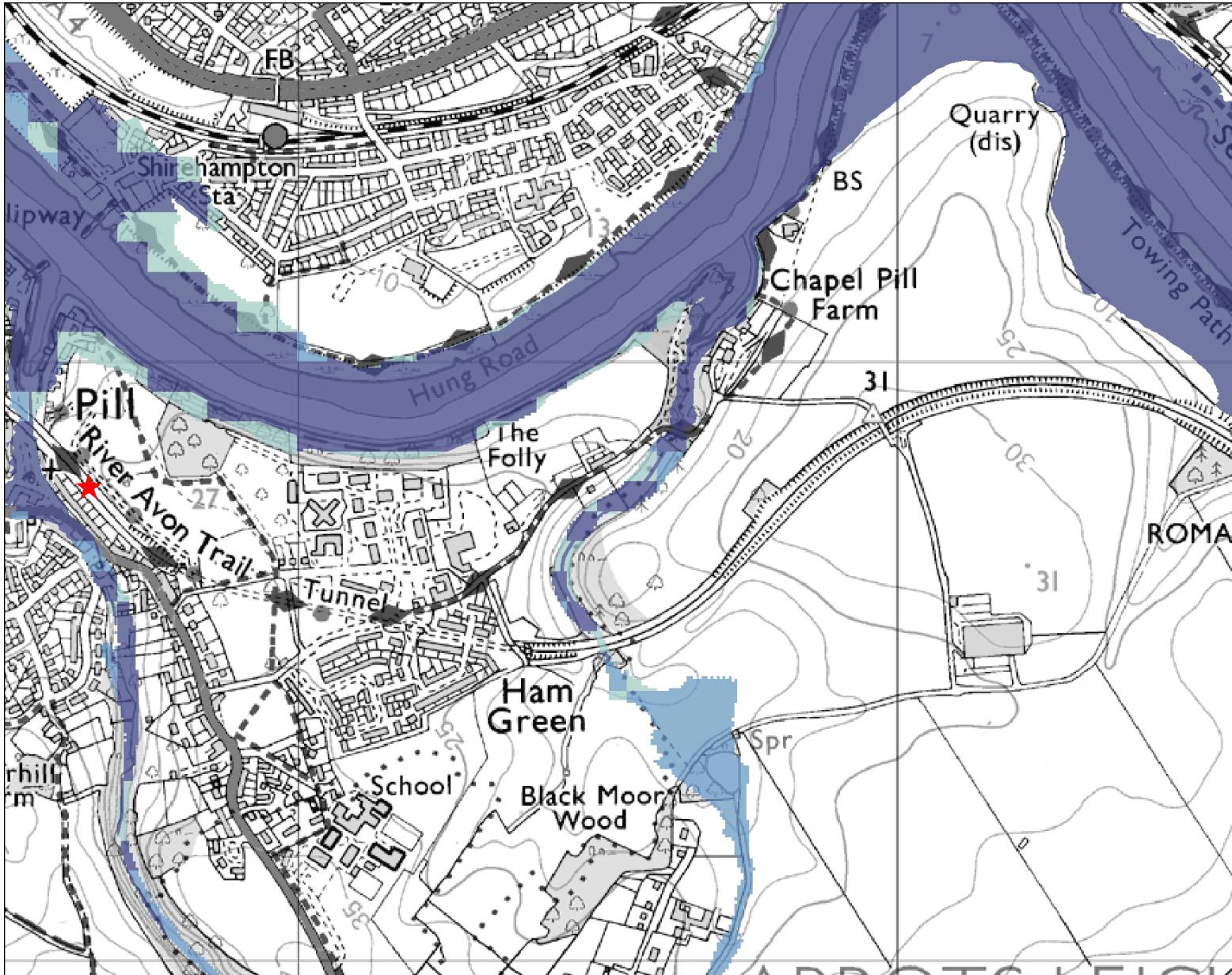
Flood Zone 3 shows the area that could be affected by flooding:

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Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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Risk of flooding - rivers & sea - starting at ST 52652 75790 - created 21 Nov 2014 [Ref: SW/8936]



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Likelihood of Flooding from Rivers and the Sea

National Flood Risk Assessment (NaFRA)

- Very Low
- Low
- Medium
- High

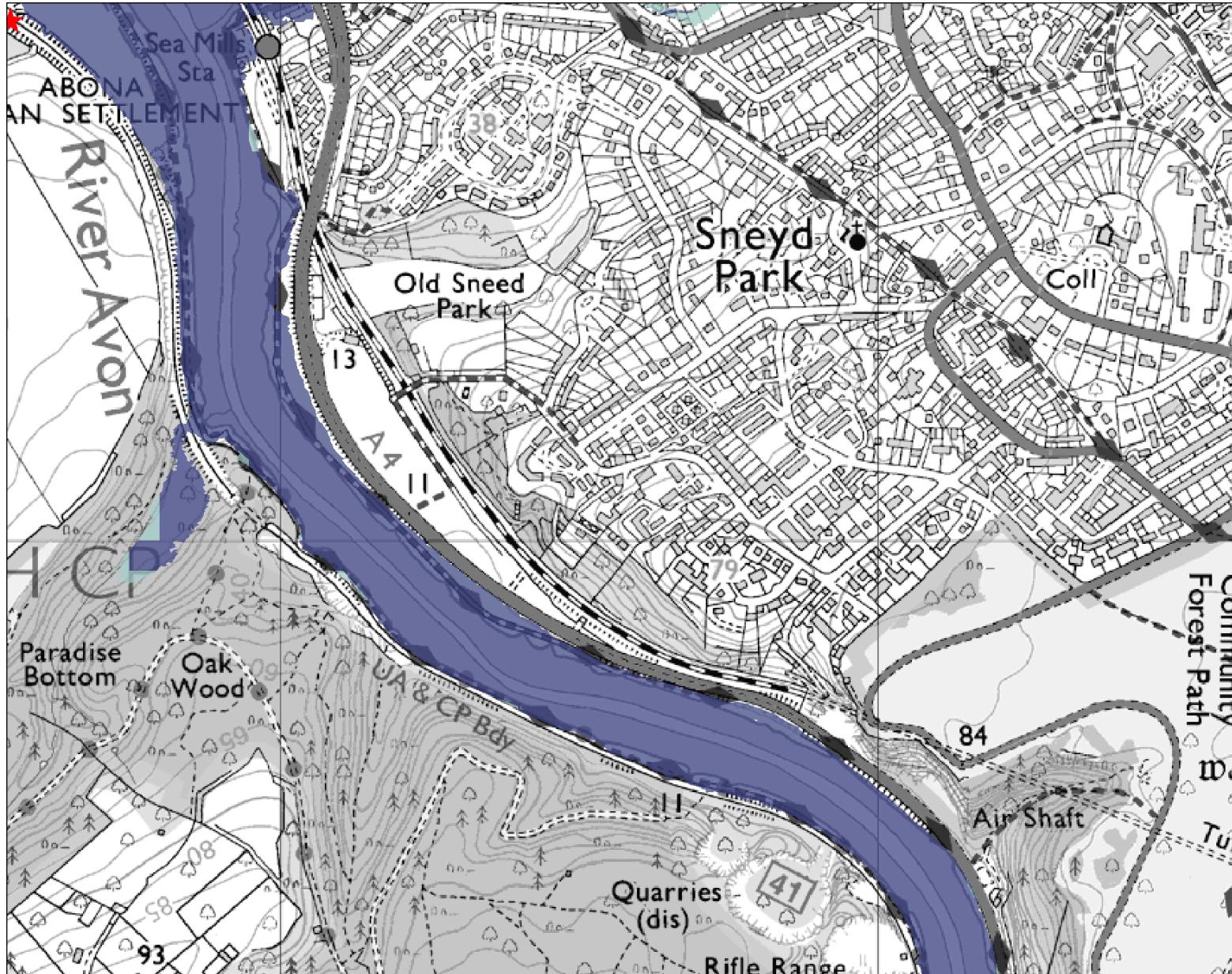
Likelihood of Flooding from Rivers and the Sea (taking into account defences)

- | | |
|-----------|---|
| High: | Greater than or equal to 1 in 30 (3.3%) chance in any given year |
| Medium: | Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance in any given year. |
| Low: | Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) chance in any given year |
| Very Low: | Less than 1 in 1,000 (0.1%) chance in any given year |

This information is shown on the Risk of Flooding from Rivers & the Sea map on our website.

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Likelihood of Flooding from Rivers and the Sea

National Flood Risk Assessment (NaFRA)

Very Low
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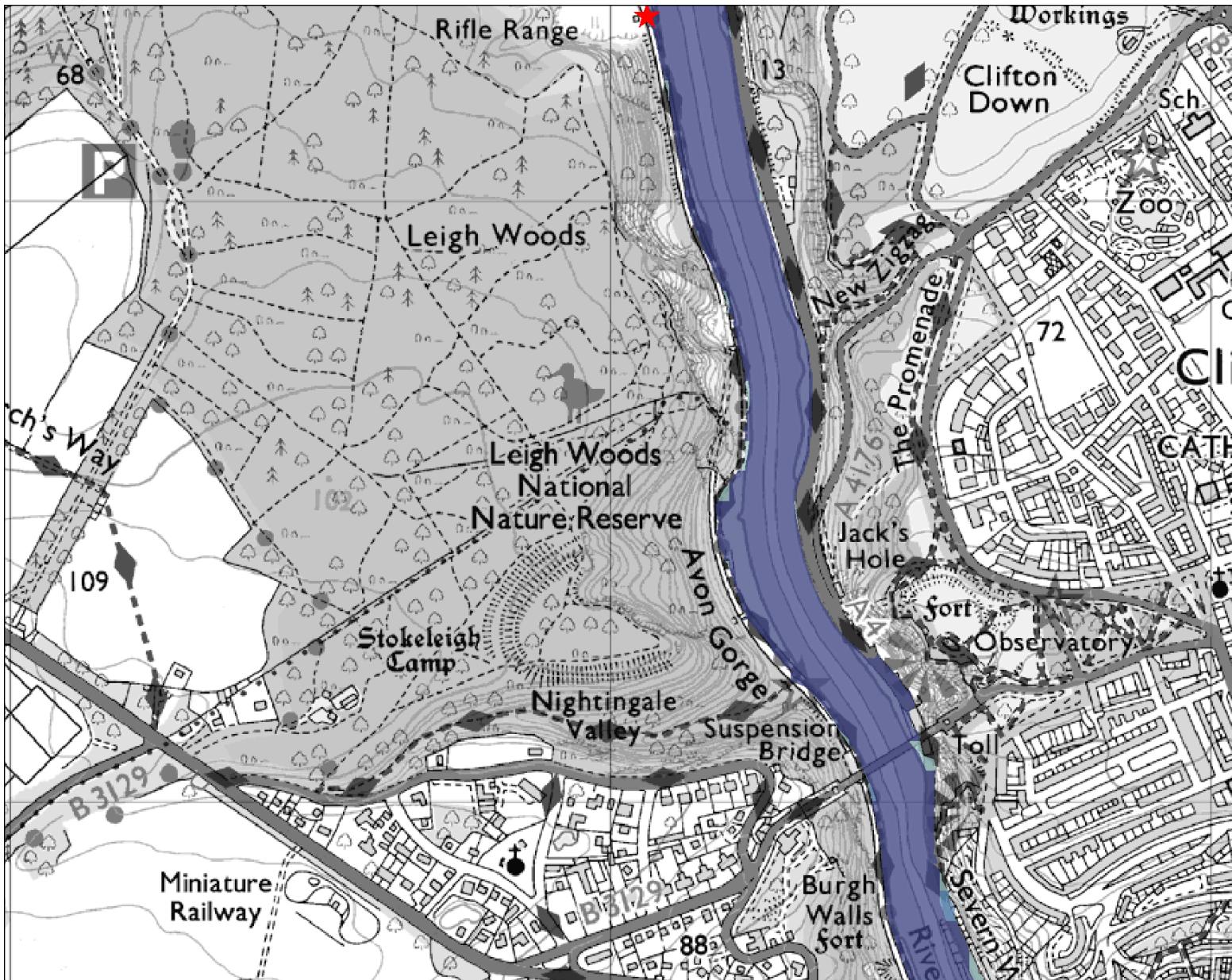
Likelihood of Flooding from Rivers and the Sea (taking into account defences)

High:	Greater than or equal to 1 in 30 (3.3%) chance in any given year
Medium:	Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance in any given year.
Low:	Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) chance in any given year
Very Low:	Less than 1 in 1,000 (0.1%) chance in any given year

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Likelihood of Flooding from Rivers and the Sea

National Flood Risk Assessment (NaFRA)

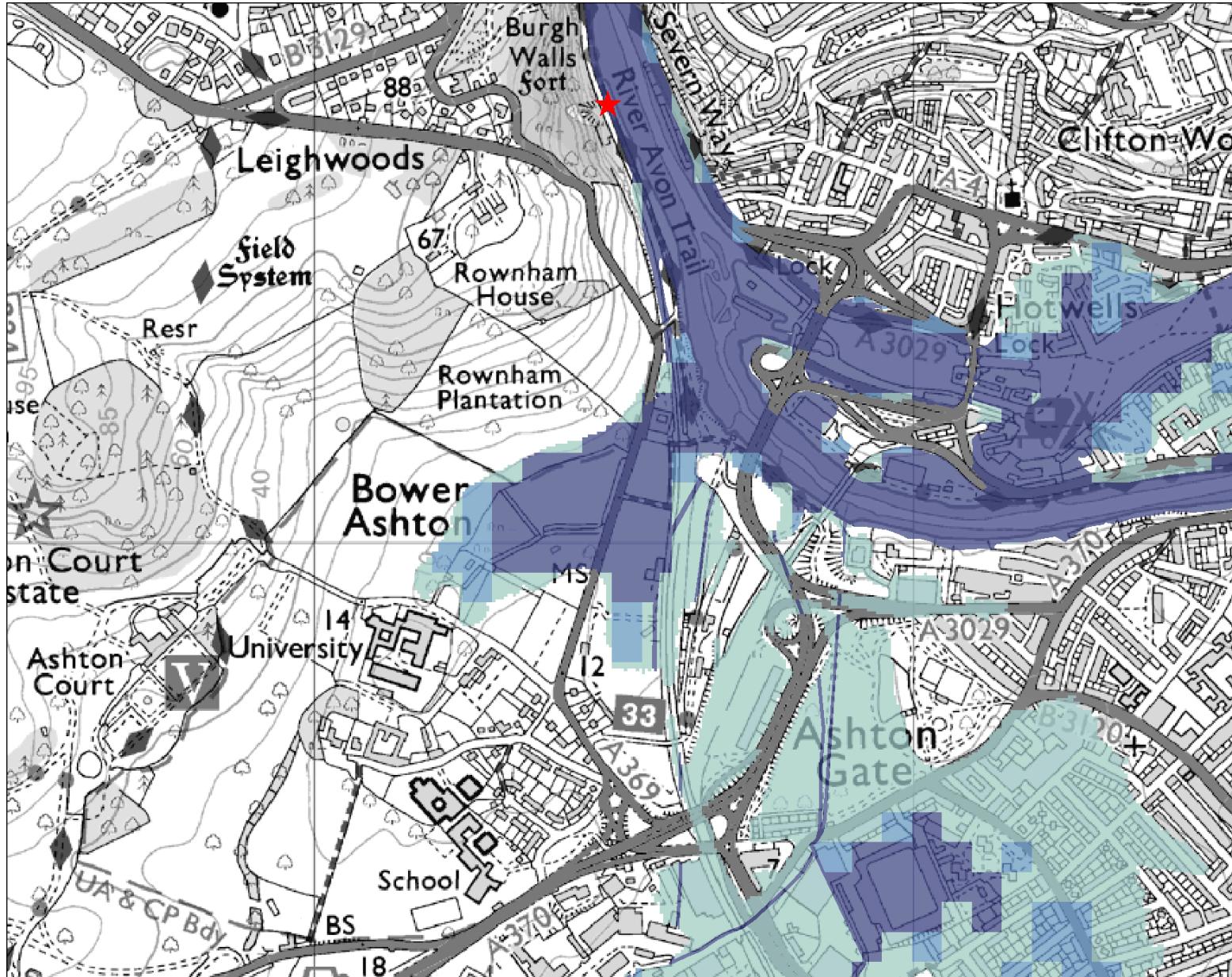
- Very Low
- Low
- Medium
- High

Likelihood of Flooding from Rivers and the Sea (taking into account defences)

- High: Greater than or equal to 1 in 30 (3.3%) chance in any given year
- Medium: Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance in any given year.
- Low: Less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%) chance in any given year
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Risk of flooding - rivers & sea - starting at ST 56493 72730 - created 21 Nov 2014 [Ref: SW/8936]



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Likelihood of Flooding from Rivers and the Sea

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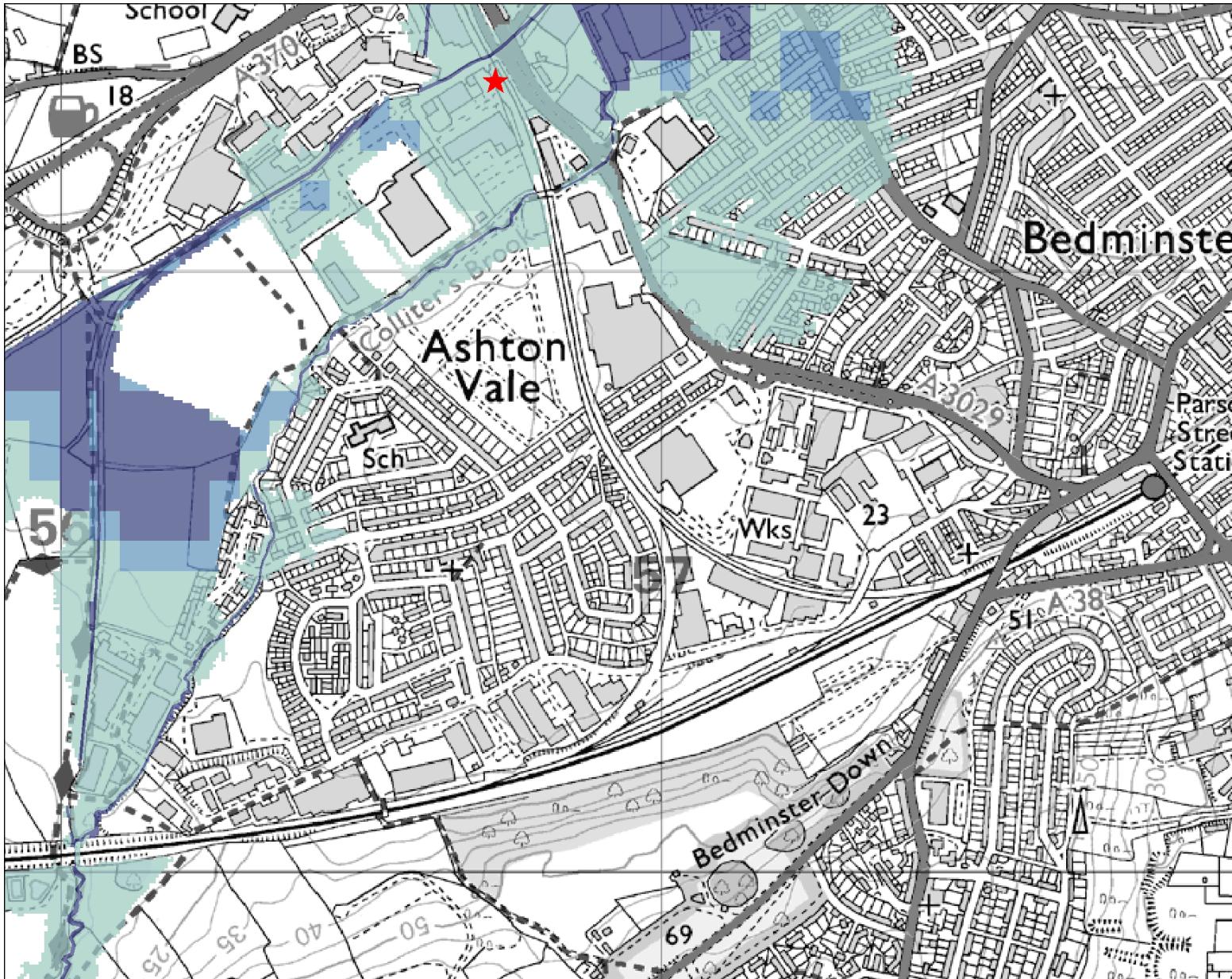
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| Very Low: | Less than 1 in 1,000 (0.1%) chance in any given year |

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Risk of flooding - rivers & sea - starting at ST 56726 71315 - created 21 Nov 2014 [Ref: SW/8936]



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Likelihood of Flooding from Rivers and the Sea

National Flood Risk Assessment (NaFRA)

- Very Low
- Low
- Medium
- High

Likelihood of Flooding from Rivers and the Sea (taking into account defences)

- | | |
|-----------|---|
| High: | Greater than or equal to 1 in 30 (3.3%) chance in any given year |
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SW8936 - historic data

Start Date	End Date	Flood Event Code	Name	Comments	Source of Flooding	Cause of Flooding
13/11/1703	14/11/1703	16091	EA112_Bristol - November 1703	"Half Bristol under water". 6ft @ St Stephen church, 2 ft @ Baldwin Street. BURTCHAELL (2002). Ref Bristol Evening Post, 26/11/1953	main river	channel capacity exceeded (no raised defences)
07/10/1896	07/10/1896	16017	EA112_Bristol _ Bedminster_St Philips_1896	Heavy Rain + high tide and surges. Sea level + river Avon = 39ft / 12m. Flooded properties @ StPhilip Marsh + Braodmead + Eastville and North Street. Flooding level around 3/4ft (1.2m). BURTCHAELL (2002)	main river	channel capacity exceeded (no raised defences)
15/07/1937	15/07/1937	16186	EA112_SW_Bristol, Ashton Gate 1937	Level @Ashton Gate, Sidney Street: 3ft BURTCHAELL (2002)	drainage	unknown
11/06/1954	11/06/1954	22390	EA112_CollitersBrook_AshtonVale_Bristol	Visual map ST57SE shows extent of flooding from Ashton Vale to Cala Trading Estate, Bristol. No details of properties affected. Ashton Vale improvement scheme 1978.	main river	channel capacity exceeded (no raised defences)
01/01/1958	01/01/1958	22377	EA112_CollitersBrook_AshtonVale_Bristol	Visual map ST57SE shows extent of flooding of land at Ashton Gate, around Bristol City FC. No record of actual date or duration or any properties flooded.	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	22444	EA112_Clifton_Suspension_Bristol	Historic flood map ST57SE shows Avon just out of bank from Clifton Suspension Bridge to M5 road bridge. No record of Properties affected.	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	22287	EA112_Avon_M5_Avonmouth	Visual Historic Map ST57NW shows minor flooding from from around M5 to Avonmouth, no record of flooding to Industrial and or Residential properties.	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	27476	EA112_Colliters Brook_Ashton Vale_1960	HFM ST57SE indicates land and industrial works units as being flooded (some areas have since been redeveloped)	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	15387	EA112_1960_AvonFootbr_BathBr (BTM)_Bristol	Historic map ST57SE shows the Lower Avon just out of bank from Bedminster Bridge to Goal Ferry	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	22440	EA112_Avon_Foot_Br_Ashton_Ave_Br_Bristol	Historic map ST57SE shows flooding from lower Avon from Avon foot bridge to Ashton Ave Bridge	main river	channel capacity exceeded (no raised defences)
04/12/1960	05/12/1960	22277	EA112_Avon_Clifton_to Ashton Avenue Bridge	Visual map ST 57NW River Avon out of bank no properties affected from Clifton Bridge to Ashton Avenue Bridge.	main river	channel capacity exceeded (no raised defences)
18/12/1965	19/12/1965	21947	EA112_CollitersBrook_Ashton_Vale_Bristol	Historic flood map ST57SE shows flooding in the area of Ashton Gate, Ashton Vale - agricultural land off Bilbury Road, Langley Road , Gores Marsh and Winterstoke road Ashton Vale, Bristol. Ref BARA Engineer flooding report.	main river	channel capacity exceeded (no raised defences)
10/07/1968	10/07/1968	22371	EA112_CollitersBrook_Ashton_Vale_Bristol	Historic Flood Map ST57SE shows flooding of land at Greville Smythe Park, Ashton Road as far as the Coopers Arms. Ashton Gate works, the football ground, Winterstoke Road and Ashton Drive properties were flooded. Actual number not reported.	main river	channel capacity exceeded (no raised defences)
10/06/1971	11/06/1971	21907	EA112_Bristol_AshtonVale_Colliters Brook	Historic Flood Map ST57SE shows extent of flooding of Ashton Vale - former works and factories, Winterstoke Road and previously undeveloped land at what is now at Brookgate. Actual number not reported	main river	channel capacity exceeded (no raised defences)
27/09/1974	27/09/1974	22228	EA112_Sep1974	No properties recorded as flooded ref report by CR Coleman 30/9/1974 - file ref HFM/1974	main river	channel capacity exceeded (no raised defences)

Historic flood events - Portishead to Pill - created 24 November 2014 [Ref: SW/8936]



Environment
Agency

Scale: 1:50,000



Legend

Recorded flood outlines

START_DATE

07/10/1896

13/11/1703

Historic Flood Events

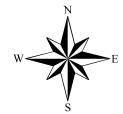
Please see the attached sheet for more information on the individual flood events, such as: dates, source and cause of flooding.

These events and outlines are taken from our Historic Flood Records. We cannot guarantee that it is an exhaustive list of all past flood events in this location.

Historic flood events - Portishead to Pill - created 24 November 2014 [Ref: SW/8936]



Scale: 1:50,000



Legend

Recorded flood outlines

START_DATE

- 04/12/1960
- 01/01/1958
- 15/07/1937
- 11/06/1954

Historic Flood Events

Please see the attached sheet for more information on the individual flood events, such as: dates, source and cause of flooding.

These events and outlines are taken from our Historic Flood Records. We cannot guarantee that it is an exhaustive list of all past flood events in this location.



Historic flood events - Portishead to Pill - created 24 November 2014 [Ref: SW/8936]



Scale: 1:50,000



Legend

Recorded flood outlines

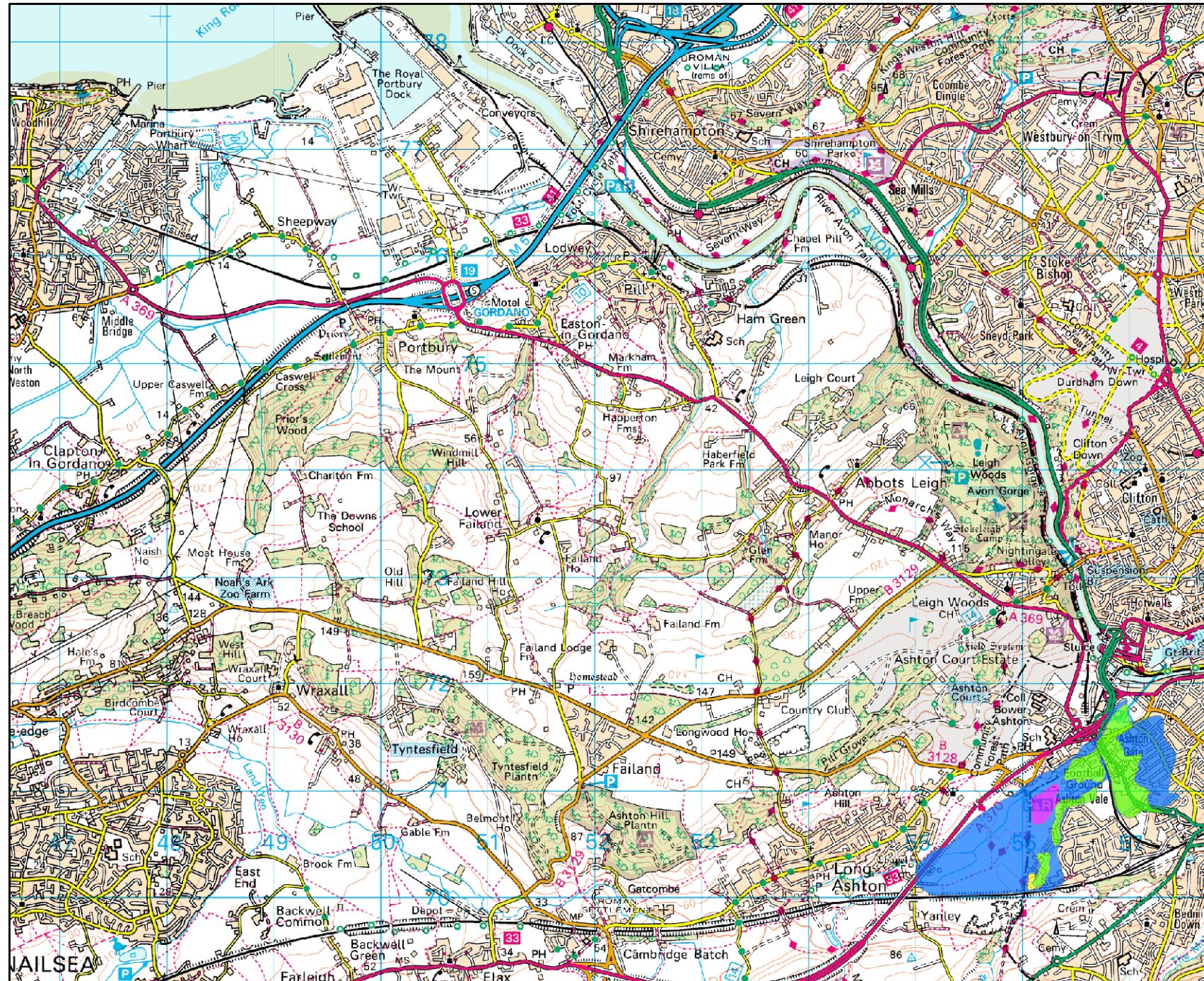
START_DATE

- 27/09/1974
- 10/06/1971
- 18/12/1965
- 10/07/1968

Historic Flood Events

Please see the attached sheet for more information on the individual flood events, such as: dates, source and cause of flooding.

These events and outlines are taken from our Historic Flood Records. We cannot guarantee that it is an exhaustive list of all past flood events in this location.

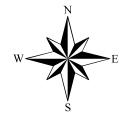


Historic flood events - Portishead to Pill - created 24 November 2014 [Ref: SW/8936]



Environment
Agency

Scale: 1:50,000



Legend

Recorded flood outlines

START_DATE

- 10/02/1989
- 13/12/1981
- 24/12/1999
- 26/02/1990

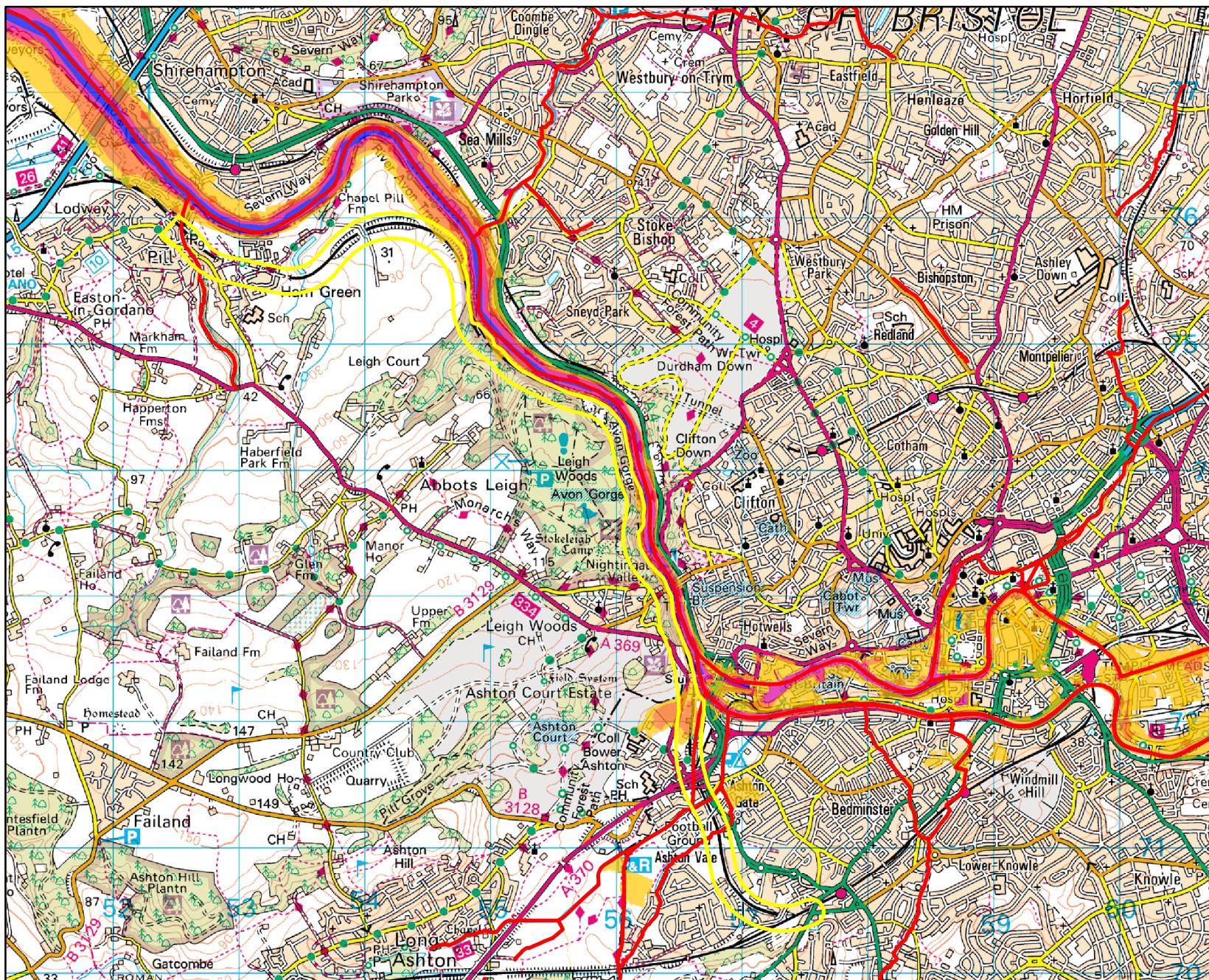
Historic Flood Events

Please see the attached sheet for more information on the individual flood events, such as: dates, source and cause of flooding.

These events and outlines are taken from our Historic Flood Records. We cannot guarantee that it is an exhaustive list of all past flood events in this location.



Start Date	End Date	Flood Event Code	Name	Comments	Source of Flooding	Cause of Flooding
13/12/1981	15/12/1981	25427	EA112_Coastal_Portbury_1981	Extent of flooding of land and Paper Mill/paper bag factory is based on engineers site visit report and flood event outline of the 1981 Flood Event at the time.	unknown	overtopping of defences
10/02/1989	11/02/1989	26368	EA112_Avon_Pill_1989	Drawing 2011/11/004 located in BARA Flood Event File 010 and CDView, shows the extent of the flooding. Note that only 3 properties were confirmed as flooded but numerous others indicated as vulnerable	main river	overtopping of defences
26/02/1990	27/02/1990	26380	EA112_Feb_Avon_Pill_1990	Drawing 2011/11/043 identifies the areas of Pill - Avon Road, Mariners Parade, Pump Square, Bank Place and Watchouse Road identified as flooded.	main river	overtopping of defences
24/12/1999	24/12/1999	15945	EA112_Bristol, Cumberland 1999	Tide + urban Runoff. River Avon level = 8.55m AOD. BURTCHELL (2002). Halcrow UK survey report (2000)	main river	overtopping of defences



Scale: 1:44,275

Legend

Radius_100m

rivers_main_010k

BRISTOL_CAFRA_0.1% Undef Tidal_D.asc

<VALUE>

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11.35027431 - 16.44499969

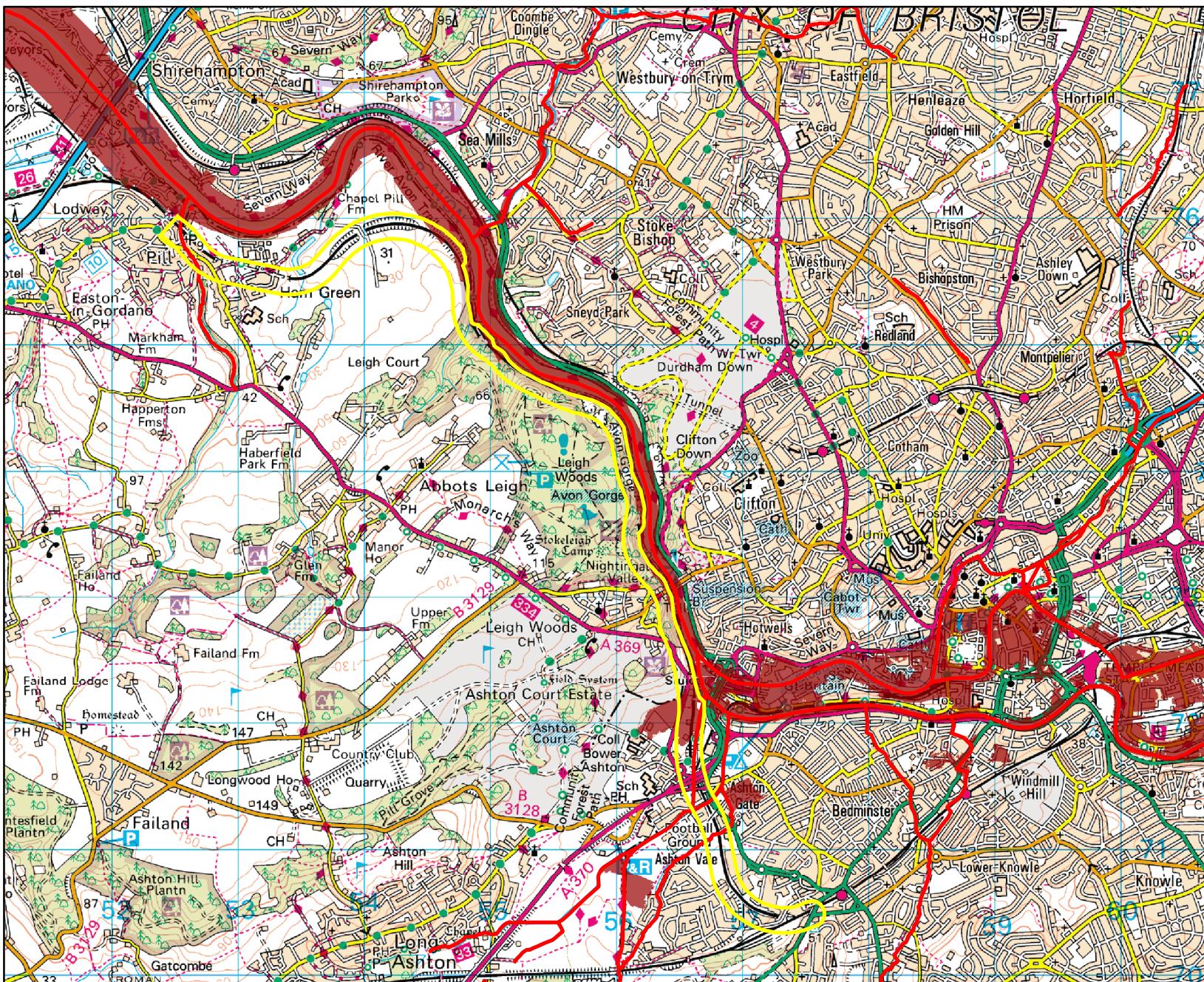
0.1% AEP Tidal Levels/Depths

These depths are taken from our Tidal Flood Zone Mapping study 2012 and are based on 2008 tidal extreme water levels which have now been superceded by "Coastal Flood Boundary Conditions for UK Mainland and Islands", 2011.

The modelling is based on a 50m grid and is fit for purpose for Flood Zone mapping, however it should only be used as an indicative guide to flood depth inundation for site specific FRAs.

AEP = Annual Exceedance Probability

- e.g. 1% AEP has a 1% chance of occurring in any one year (1:100 chance)



Scale: 1:44,391



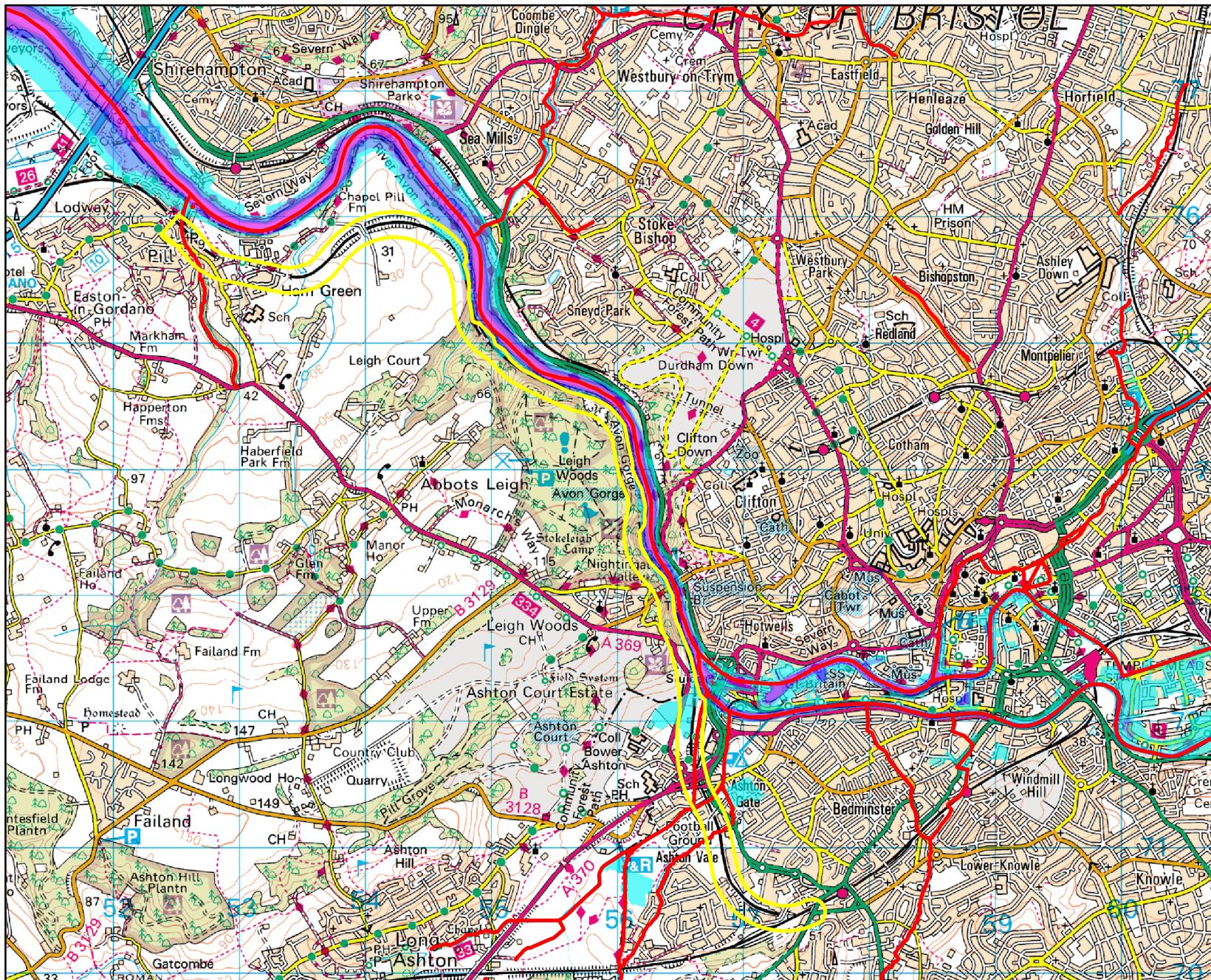
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—	rivers_main_010k
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■	10.17686891 - 14.6190455
■	14.61904551 - 21.43038294
■	21.43038295 - 29.27822826
■	29.27822827 - 44.52970123

0.1% AEP Tidal Levels/Depths

These levels are taken from our Tidal Flood Zone Mapping study 2012 and are based on 2008 tidal extreme water levels which have now been superceded by "Coastal Flood Boundary Conditions for UK Mainland and Islands" 20011. The modelling is based on a 50m grid and is fit for purpose for Flood Zone mapping, however it should only be used as an indicative guide to flood depth inundation for site specific FRAs.

AEP = Annual Exceedance Probability
- e.g. 1% AEP has a 1% chance of occurring in any one year (1:100 chance)



Scale: 1:44,275

Legend

Radius_100m
rivers_main_010k
BRISTOL_CAFRA_0.5% Tidal_UNDEF_D.asc

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3.794117648 - 7.145588235
7.145588236 - 11.06617647
11.06617648 - 16.125

0.5% AEP Tidal Levels/Depths

These depths are taken from our Tidal Flood Zone Mapping study 2012 and are based on 2008 tidal extreme water levels which have now been superceded by "Coastal Flood Boundary Conditions for UK Mainland and Islands" 2011.

The modelling is based on a 50m grid and is fit for purpose for Flood Zone mapping, however it should only be used as an indicative guide to flood depth inundation for site specific FRAs.

AEP = Annual Exceedance Probability
- e.g. 1% AEP has a 1% chance of occurring in any one year (1:100 chance)



Scale: 1:44,275



Legend

- Radius_100m
- rivers_main_010k

BRISTOL_CAFRA_0.5%_Undef_Tidal_H.asc

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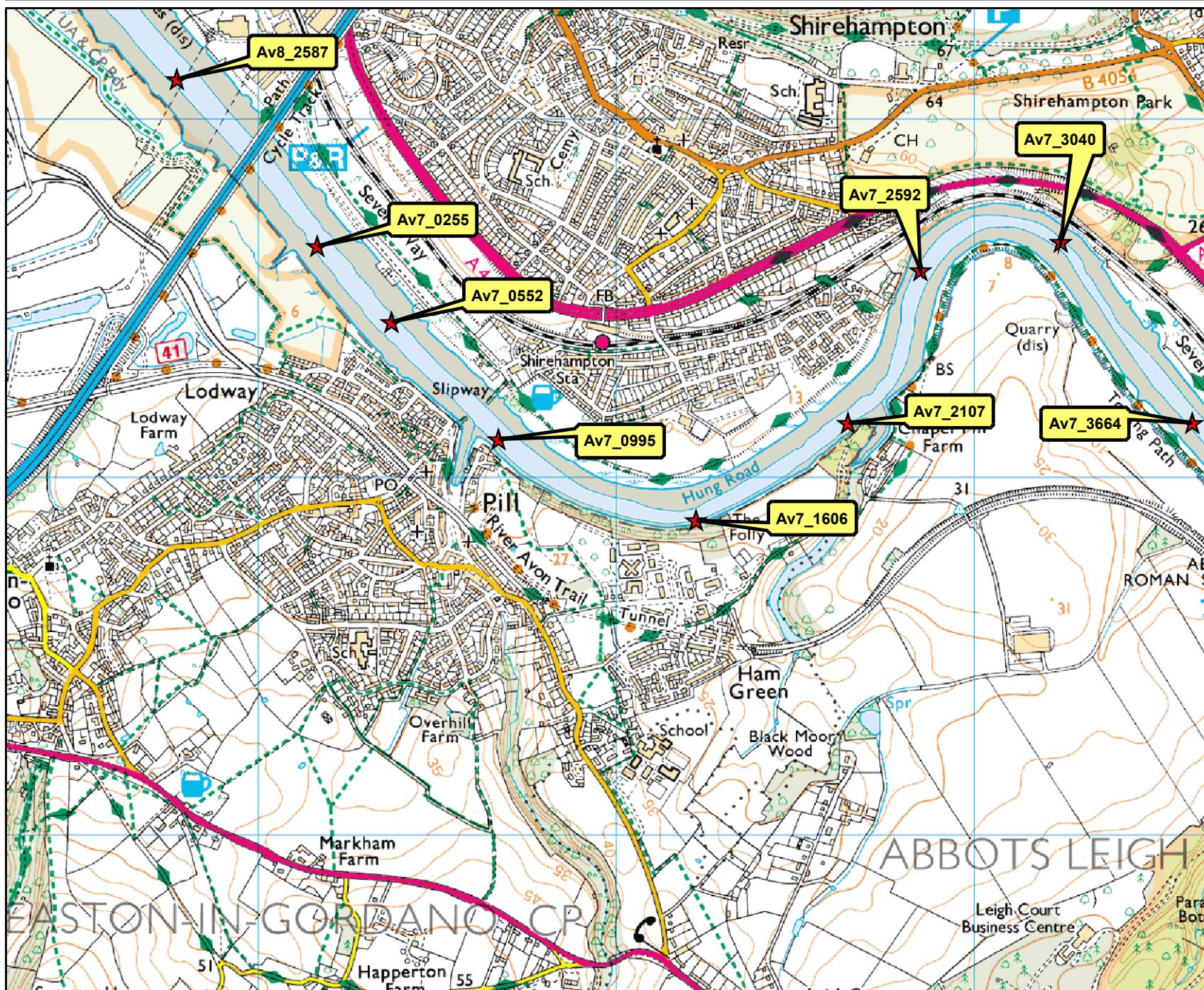
6.23759985 - 10.14189254
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14.64684565 - 21.40427533
21.40427531 - 29.36302578
29.36302579 - 44.52970123

0.5% AEP Tidal Levels/Depths

These levels are taken from our Tidal Flood Zone Mapping study 2012 and are based on 2008 tidal extreme water levels which have now been superceded by "Coastal Flood Boundary Conditions for UK Mainland and Islands" 2011. The modelling is based on a 50m grid and is fit for purpose for Flood Zone mapping, however it should only be used as an indicative guide to flood depth inundation for site specific FRAs.

AEP = Annual Exceedance Probability
- e.g. 1% AEP has a 1% chance of occurring in any one year (1:100 chance)

Node location map 1 - created 08 December 2014 [Ref: SW/8936]



Scale: 1:15,000



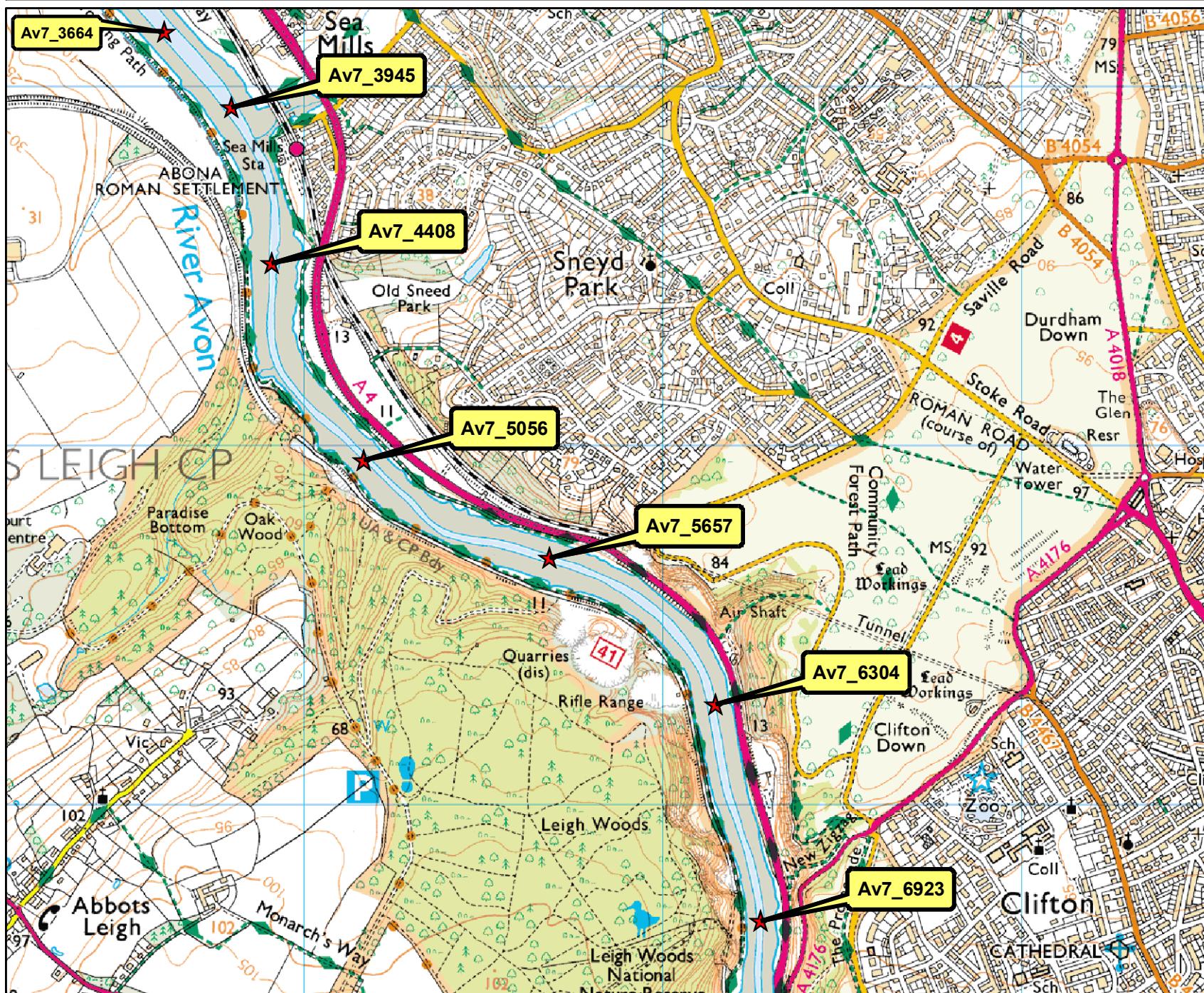
Legend

- Selected CAFRA nodes1

Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.

Node location map 2 - created 08 December 2014 [Ref: SW/8936]



Scale: 1:15,000



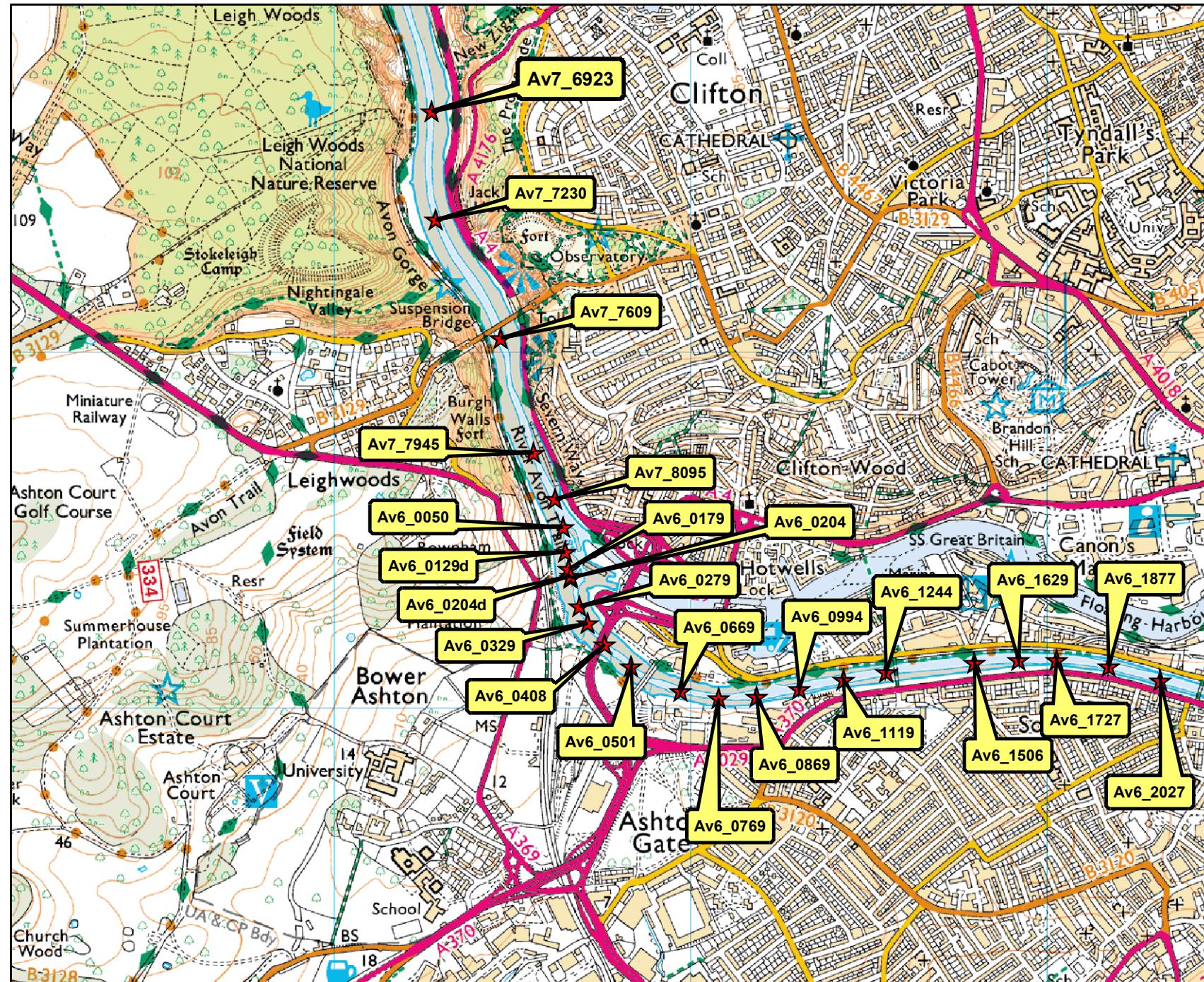
Legend

★ Selected CAFRA nodes2

Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.

Node location map 3 - created 08 December 2014 [Ref: SW/8936]



Scale: 1:15,000



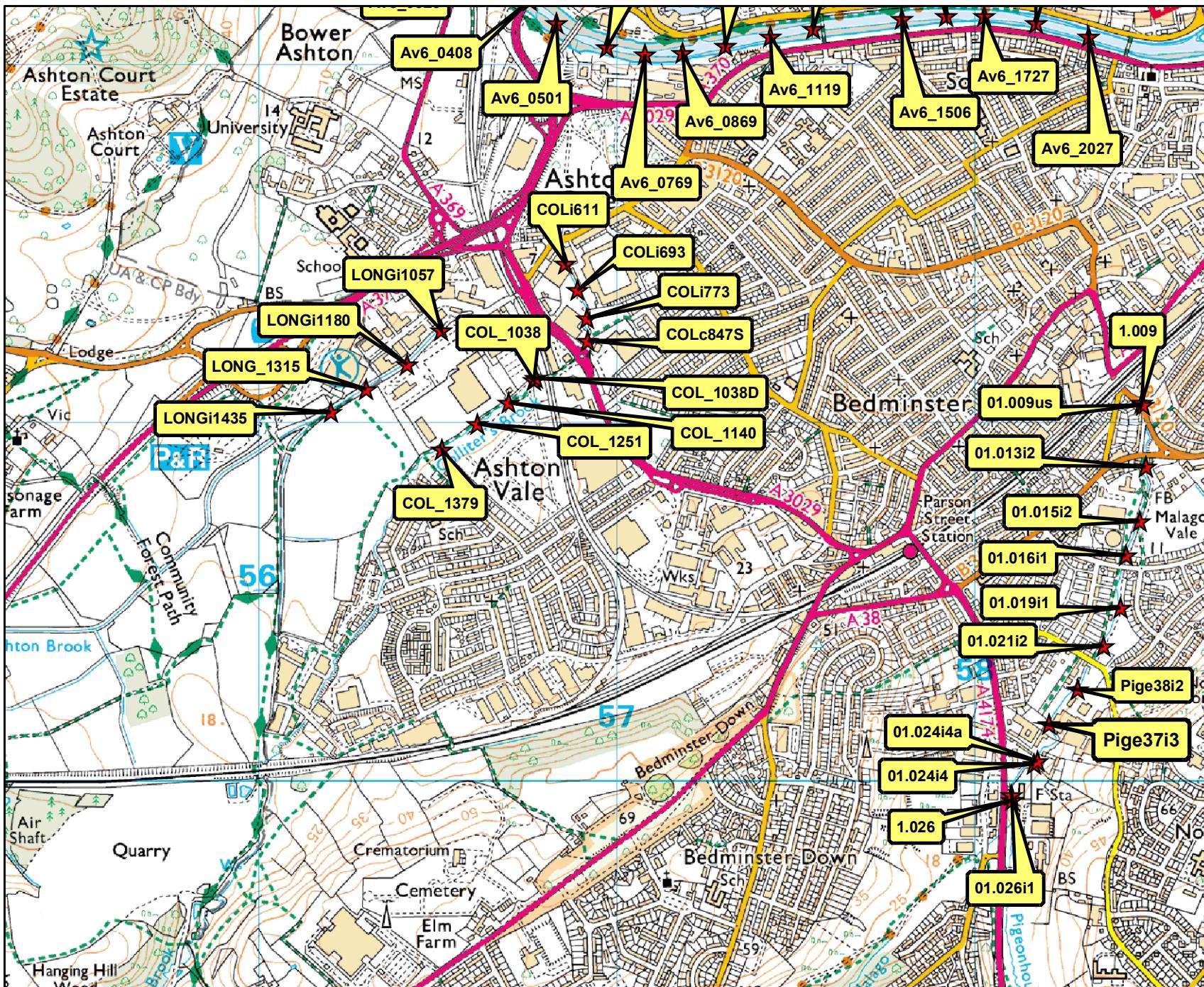
Legend

★ Selected CAFRA nodes3

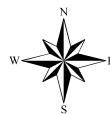
Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.

Node location map 4 - created 08 December 2014 [Ref: SW/8936]



Scale: 1:15,000



Legend

- Selected CAFRA nodes4

Modelled Flood Level Nodes

A table that references the node locations/unique identifiers is also attached, giving associated flood levels, NGRs and further information for the river channel and model.

LEVELS of CONFIDENCE

HIGH confidence

MODERATE confidence

LOW confidence

The model was produced to assess our flood risk management assets and the results are fit for this purpose. The model has since been developed to provide flood levels that can be used for design purposes, and we have HIGH confidence in its input data and subsequently its results. The reason that we have HIGH confidence in the model and its results is because the model has been calibrated and verified against a known flood event.

The model was produced to assess our flood risk management assets and the results are fit for this purpose. We have MODERATE confidence in its input data, and subsequently its results. The reason that we have MODERATE confidence in the model and its results is because the model requires verification against a known flood event. You will need to contact our Partnership and Strategic Overview Team to discuss whether the flood levels from this model are suitable for your FRA or whether they require you to carry out further work to update the modelling.

purpose. This model was not developed to provide accurate flood levels that can be used for design purposes and as such we have LOW confidence in its input data and subsequently its results. The reason that we have LOW confidence in the model and its results is because the hydrology needs to be updated and the input data has not been calibrated against a known flood event. You will need to contact our and Partnership and Strategic Overview Team to discuss whether the flood levels from this model are suitable for your FRA or whether they require you to carry out further work to update the modelling.

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR
Av7_0255	River Avon	BCC - CAFRA 2011	Defended	7.11	1007.16	8.13	1177.34	7.12	1056.91
Av7_0552	River Avon	BCC - CAFRA 2011	Defended	7.12	976.66	8.14	1143.36	7.12	1026.77
Av7_0995	River Avon	BCC - CAFRA 2011	Defended	7.13	934.90	8.15	1096.44	7.13	984.63
Av7_1606	River Avon	BCC - CAFRA 2011	Defended	7.14	892.90	8.18	1048.89	7.14	941.99
Av7_2107	River Avon	BCC - CAFRA 2011	Defended	7.16	856.68	8.20	1006.57	7.16	905.37
Av7_2592	River Avon	BCC - CAFRA 2011	Defended	7.17	817.05	8.22	961.22	7.18	865.41
Av7_3040	River Avon	BCC - CAFRA 2011	Defended	7.19	788.55	8.24	928.09	7.19	837.00
Av7_0255	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_0552	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_0995	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_1606	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_2107	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_2592	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_3040	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_3664	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av8_2587	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_3664	River Avon	BCC - CAFRA 2011	Defended	7.20	745.28	8.25	879.67	7.20	795.57
Av8_2587	River Avon	BCC - CAFRA 2011	Defended	7.09	1075.67	8.10	1252.63	7.10	1124.45

SW8936

NODE	LEV_100YR	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
Av7_0255	7.12	1091.45	8.12	1230.04	No modelled data	No modelled data	No modelled data	No modelled data	352164.84	176644.62
Av7_0552	7.13	1059.11	8.13	1197.70	No modelled data	No modelled data	No modelled data	No modelled data	352373.99	176433.82
Av7_0995	7.14	1014.00	8.15	1151.18	No modelled data	No modelled data	No modelled data	No modelled data	352671.66	176105.56
Av7_1606	7.15	971.08	8.16	1105.30	No modelled data	No modelled data	No modelled data	No modelled data	353225.27	175879.95
Av7_2107	7.17	933.17	8.18	1065.45	No modelled data	No modelled data	No modelled data	No modelled data	353649.06	176152.23
Av7_2592	7.19	891.80	8.20	1022.67	No modelled data	No modelled data	No modelled data	No modelled data	353851.34	176578.27
Av7_3040	7.20	861.66	8.21	992.54	No modelled data	No modelled data	No modelled data	No modelled data	354243.18	176656.74
Av7_0255	7.12	1091.51	No modelled data	No modelled data	7.11	1197.91	9.15	9.47	352164.84	176644.62
Av7_0552	7.13	1059.22	No modelled data	No modelled data	7.12	1168.83	9.15	9.47	352373.99	176433.82
Av7_0995	7.14	1014.04	No modelled data	No modelled data	7.13	1125.62	9.15	9.47	352671.66	176105.56
Av7_1606	7.15	971.10	No modelled data	No modelled data	7.15	1086.12	9.17	9.47	353225.27	175879.95
Av7_2107	7.17	933.24	No modelled data	No modelled data	7.17	1052.05	9.18	9.48	353649.06	176152.23
Av7_2592	7.19	891.88	No modelled data	No modelled data	7.19	1014.91	9.19	9.49	353851.34	176578.27
Av7_3040	7.20	861.72	No modelled data	No modelled data	7.20	987.45	9.20	9.49	354243.18	176656.74
Av7_3664	7.22	818.37	No modelled data	No modelled data	7.22	948.24	9.21	9.50	354610.53	176151.10
Av8_2587	7.10	1160.62	No modelled data	No modelled data	7.09	1263.48	9.14	9.46	351773.28	177112.19
Av7_3664	7.22	818.38	8.23	951.48	No modelled data	No modelled data	No modelled data	No modelled data	354610.53	176151.10
Av8_2587	7.10	1160.54	8.10	1301.91	No modelled data	No modelled data	No modelled data	No modelled data	351773.28	177112.19

SW8936

NODE	LEV_100YR	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
Av7_3945	7.23	798.16	8.24	931.11	No modelled data	No modelled data	No modelled data	No modelled data	354797.50	175941.13
Av7_4408	7.24	754.06	8.25	874.49	No modelled data	No modelled data	No modelled data	No modelled data	354910.42	175506.83
Av7_5056	7.25	709.96	8.27	822.42	No modelled data	No modelled data	No modelled data	No modelled data	355167.56	174958.61
Av7_5657	7.27	672.81	8.28	783.95	No modelled data	No modelled data	No modelled data	No modelled data	355684.79	174686.06
Av7_6304	7.29	591.36	8.30	703.05	No modelled data	No modelled data	No modelled data	No modelled data	356148.54	174278.74
Av7_6923	7.30	560.32	8.31	662.80	No modelled data	No modelled data	No modelled data	No modelled data	356273.76	173674.93
Av7_3945	7.22	798.18	No modelled data	No modelled data	7.22	929.95	9.22	9.50	354797.50	175941.13
Av7_4408	7.24	754.19	No modelled data	No modelled data	7.23	881.36	9.22	9.50	354910.42	175506.83
Av7_5056	7.25	710.02	No modelled data	No modelled data	7.25	842.11	9.23	9.50	355167.56	174958.61
Av7_5657	7.27	672.89	No modelled data	No modelled data	7.27	812.82	9.24	9.50	355684.79	174686.06
Av7_6304	7.29	591.14	No modelled data	No modelled data	7.29	736.35	9.24	9.50	356148.54	174278.74
Av7_6923	7.30	560.07	No modelled data	No modelled data	7.31	712.89	9.24	9.48	356273.76	173674.93

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR
Av6_0050	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0129d	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0179	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0204	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0204d	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0279	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0329	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0408	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0501	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0669	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0769	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0869	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0994	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1119	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1244	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1506	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1629	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1727	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_1877	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_2027	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_7230	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_7609	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_7945	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av7_8095	River Avon	BCC - CAFRA 2011	Undefended	No modelled data					
Av6_0050	River Avon	BCC - CAFRA 2011	Defended	7.28	440.77	8.36	527.78	7.30	491.51
Av6_0129d	River Avon	BCC - CAFRA 2011	Defended	7.29	426.92	8.36	513.23	7.31	480.54
Av6_0179	River Avon	BCC - CAFRA 2011	Defended	7.29	424.06	8.37	510.14	7.31	478.15
Av6_0204	River Avon	BCC - CAFRA 2011	Defended	7.29	421.98	8.37	507.85	7.31	476.37
Av6_0204d	River Avon	BCC - CAFRA 2011	Defended	7.29	421.98	8.37	507.85	7.31	476.37
Av6_0279	River Avon	BCC - CAFRA 2011	Defended	7.28	418.13	8.36	502.81	7.30	472.80
Av6_0329	River Avon	BCC - CAFRA 2011	Defended	7.28	416.13	8.36	500.37	7.30	470.92
Av6_0408	River Avon	BCC - CAFRA 2011	Defended	7.28	404.75	8.36	488.20	7.30	457.52
Av6_0501	River Avon	BCC - CAFRA 2011	Defended	7.29	401.38	8.37	484.14	7.30	454.31
Av6_0669	River Avon	BCC - CAFRA 2011	Defended	7.30	394.46	8.39	476.84	7.33	447.67
Av6_0769	River Avon	BCC - CAFRA 2011	Defended	7.31	391.47	8.39	472.92	7.33	444.60
Av6_0869	River Avon	BCC - CAFRA 2011	Defended	7.31	388.67	8.39	469.17	7.34	441.62
Av6_0994	River Avon	BCC - CAFRA 2011	Defended	7.31	368.37	8.39	464.64	7.34	422.23
Av6_1119	River Avon	BCC - CAFRA 2011	Defended	7.32	364.74	8.40	460.34	7.34	419.10
Av6_1244	River Avon	BCC - CAFRA 2011	Defended	7.32	361.39	8.40	456.29	7.34	416.23
Av6_1506	River Avon	BCC - CAFRA 2011	Defended	7.34	355.43	8.41	449.04	7.38	411.08
Av6_1629	River Avon	BCC - CAFRA 2011	Defended	7.35	352.92	8.41	446.01	7.38	408.91

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR
Av6_1727	River Avon	BCC - CAFRA 2011	Defended	7.35	349.71	8.41	441.96	7.39	405.53
Av6_1877	River Avon	BCC - CAFRA 2011	Defended	7.37	337.64	8.42	427.06	7.42	387.19
Av6_2027	River Avon	BCC - CAFRA 2011	Defended	7.38	334.92	8.43	424.02	7.44	384.50
Av7_7230	River Avon	BCC - CAFRA 2011	Defended	7.27	480.87	8.35	579.86	7.29	531.39
Av7_7609	River Avon	BCC - CAFRA 2011	Defended	7.28	463.87	8.35	558.16	7.29	513.70
Av7_7945	River Avon	BCC - CAFRA 2011	Defended	7.28	449.72	8.35	539.88	7.30	500.03
Av7_8095	River Avon	BCC - CAFRA 2011	Defended	7.28	443.75	8.35	531.76	7.30	494.34

NODE	LEV_100YR	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
Av6_0050	7.32	507.89	No modelled data	No modelled data	7.35	672.29	9.25	9.48	356643.64	172508.16
Av6_0129d	7.33	493.62	No modelled data	No modelled data	7.37	658.76	9.27	9.47	356650.38	172437.55
Av6_0179	7.33	491.10	No modelled data	No modelled data	7.38	657.09	9.26	9.49	356658.90	172390.17
Av6_0204	7.33	489.21	No modelled data	No modelled data	7.38	655.79	9.25	9.50	356665.67	172365.62
Av6_0204d	7.33	489.21	No modelled data	No modelled data	7.38	655.79	9.25	9.50	356664.41	172370.72
Av6_0279	7.33	485.72	No modelled data	No modelled data	7.36	653.20	9.25	9.49	356689.01	172284.86
Av6_0329	7.33	484.03	No modelled data	No modelled data	7.36	651.85	9.25	9.49	356712.51	172238.87
Av6_0408	7.33	470.34	No modelled data	No modelled data	7.36	634.24	9.25	9.48	356759.81	172178.80
Av6_0501	7.33	467.37	No modelled data	No modelled data	7.37	631.84	9.26	9.48	356833.76	172116.87
Av6_0669	7.36	460.96	No modelled data	No modelled data	7.44	626.64	9.25	9.43	356973.79	172047.99
Av6_0769	7.36	458.03	No modelled data	No modelled data	7.44	624.46	9.24	9.42	357080.51	172028.45
Av6_0869	7.36	455.18	No modelled data	No modelled data	7.45	613.49	9.25	9.43	357186.22	172032.46
Av6_0994	7.36	438.25	No modelled data	No modelled data	7.45	586.62	9.25	9.44	357306.33	172054.12
Av6_1119	7.37	435.01	No modelled data	No modelled data	7.46	584.09	9.25	9.44	357431.14	172079.00
Av6_1244	7.37	432.01	No modelled data	No modelled data	7.46	581.70	9.25	9.44	357551.40	172100.65
Av6_1506	7.40	426.86	No modelled data	No modelled data	7.54	577.52	9.26	9.44	357798.03	172127.49
Av6_1629	7.41	424.74	No modelled data	No modelled data	7.55	575.87	9.26	9.44	357921.87	172135.11
Av6_1727	7.43	421.18	No modelled data	No modelled data	7.57	557.63	9.26	9.44	358029.28	172135.30
Av6_1877	7.45	400.08	No modelled data	No modelled data	7.61	515.72	9.26	9.44	358174.61	172115.80
Av6_2027	7.47	397.32	No modelled data	No modelled data	7.65	513.89	9.27	9.44	358320.24	172077.76
Av7_7230	7.31	546.59	No modelled data	No modelled data	7.32	702.34	9.24	9.48	356285.12	173368.57
Av7_7609	7.32	529.79	No modelled data	No modelled data	7.34	688.98	9.25	9.48	356469.22	173037.25
Av7_7945	7.32	516.23	No modelled data	No modelled data	7.34	678.37	9.25	9.48	356559.95	172715.56
Av7_8095	7.32	510.63	No modelled data	No modelled data	7.34	674.33	9.26	9.47	356621.69	172586.43
Av6_0050	7.32	508.04	8.34	602.74	No modelled data	No modelled data	No modelled data	No modelled data	356643.64	172508.16
Av6_0129d	7.33	493.71	8.34	587.81	No modelled data	No modelled data	No modelled data	No modelled data	356650.38	172437.55
Av6_0179	7.33	491.17	8.35	584.59	No modelled data	No modelled data	No modelled data	No modelled data	356658.90	172390.17
Av6_0204	7.34	489.29	8.35	582.19	No modelled data	No modelled data	No modelled data	No modelled data	356665.67	172365.62
Av6_0204d	7.34	489.29	8.35	582.19	No modelled data	No modelled data	No modelled data	No modelled data	356664.41	172370.72
Av6_0279	7.33	486.00	8.34	577.03	No modelled data	No modelled data	No modelled data	No modelled data	356689.01	172284.86
Av6_0329	7.33	484.28	8.34	575.20	No modelled data	No modelled data	No modelled data	No modelled data	356712.51	172238.87
Av6_0408	7.33	470.55	8.34	561.18	No modelled data	No modelled data	No modelled data	No modelled data	356759.81	172178.80
Av6_0501	7.33	467.52	8.34	557.00	No modelled data	No modelled data	No modelled data	No modelled data	356833.76	172116.87
Av6_0669	7.36	461.00	8.37	549.64	No modelled data	No modelled data	No modelled data	No modelled data	356973.79	172047.99
Av6_0769	7.36	458.11	8.37	545.79	No modelled data	No modelled data	No modelled data	No modelled data	357080.51	172028.45
Av6_0869	7.36	455.46	8.37	542.36	No modelled data	No modelled data	No modelled data	No modelled data	357186.22	172032.46
Av6_0994	7.36	438.31	8.37	538.01	No modelled data	No modelled data	No modelled data	No modelled data	357306.33	172054.12
Av6_1119	7.37	435.06	8.38	533.95	No modelled data	No modelled data	No modelled data	No modelled data	357431.14	172079.00
Av6_1244	7.37	432.07	8.38	530.12	No modelled data	No modelled data	No modelled data	No modelled data	357551.40	172100.65
Av6_1506	7.40	426.84	8.40	523.41	No modelled data	No modelled data	No modelled data	No modelled data	357798.03	172127.49
Av6_1629	7.41	424.72	8.40	520.79	No modelled data	No modelled data	No modelled data	No modelled data	357921.87	172135.11

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NODE	LEV_100YR	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
Av6_1727	7.43	421.15	8.41	516.75	No modelled data	No modelled data	No modelled data	No modelled data	358029.28	172135.30
Av6_1877	7.45	400.08	8.43	491.69	No modelled data	No modelled data	No modelled data	No modelled data	358174.61	172115.80
Av6_2027	7.48	397.31	8.44	488.69	No modelled data	No modelled data	No modelled data	No modelled data	358320.24	172077.76
Av7_7230	7.31	546.75	8.32	646.55	No modelled data	No modelled data	No modelled data	No modelled data	356285.12	173368.57
Av7_7609	7.32	529.97	8.33	628.18	No modelled data	No modelled data	No modelled data	No modelled data	356469.22	173037.25
Av7_7945	7.32	516.43	8.33	612.91	No modelled data	No modelled data	No modelled data	No modelled data	356559.95	172715.56
Av7_8095	7.32	510.79	8.33	606.12	No modelled data	No modelled data	No modelled data	No modelled data	356621.69	172586.43

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR
01.009us	Malago	BCC - CAFRA 2011	Defended	9.65	0.97	9.81	1.14	9.94	1.32
1.009	Malago	BCC - CAFRA 2011	Defended	9.64	1.88	9.81	2.05	9.93	2.16
1.026	Malago	BCC - CAFRA 2011	Defended	13.06	0.76	13.08	0.83	13.10	0.92
01.009us	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.013i2	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.015i2	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.016i1	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.019i1	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.021i2	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.024i4	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.024i4a	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.026i1	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
1.009	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
1.026	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
Pige37i3	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
Pige38i2	Malago	BCC - CAFRA 2011	Undefended	No modelled data					
01.013i2	Malago	BCC - CAFRA 2011	Defended	9.65	0.89	9.82	1.05	9.94	1.21
01.015i2	Malago	BCC - CAFRA 2011	Defended	9.66	0.80	9.82	0.92	9.94	1.06
01.016i1	Malago	BCC - CAFRA 2011	Defended	9.68	0.77	9.83	0.86	9.95	0.99
01.019i1	Malago	BCC - CAFRA 2011	Defended	9.77	0.76	9.88	0.83	9.98	0.93
01.021i2	Malago	BCC - CAFRA 2011	Defended	10.08	0.76	10.11	0.83	10.14	0.92
01.024i4	Malago	BCC - CAFRA 2011	Defended	12.40	0.76	12.43	0.83	12.46	0.92
01.024i4a	Malago	BCC - CAFRA 2011	Defended	12.40	0.77	12.43	0.83	12.46	0.92
01.026i1	Malago	BCC - CAFRA 2011	Defended	13.01	0.77	13.03	0.83	13.05	0.92
Pige37i3	Malago	BCC - CAFRA 2011	Defended	11.98	0.76	12.00	0.83	12.03	0.92
Pige38i2	Malago	BCC - CAFRA 2011	Defended	10.90	0.76	10.92	0.83	10.94	0.92

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NODE	LEV_100YR	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
01.009us	10.00	1.41	10.23	1.66	No modelled data	No modelled data	No modelled data	No modelled data	358473.07	171050.13
1.009	9.99	2.23	10.22	2.43	No modelled data	No modelled data	No modelled data	No modelled data	358469.32	171054.95
1.026	13.11	0.96	13.15	1.15	No modelled data	No modelled data	No modelled data	No modelled data	358108.03	169944.17
01.009us	10.00	1.41	No modelled data	No modelled data	11.91	12.82	9.26	9.44	358473.07	171050.13
01.013i2	10.01	1.30	No modelled data	No modelled data	11.87	28.93	9.27	9.45	358480.38	170877.25
01.015i2	10.01	1.13	No modelled data	No modelled data	11.99	15.77	9.33	9.46	358463.24	170724.59
01.016i1	10.02	1.04	No modelled data	No modelled data	12.00	9.83	9.45	9.51	358426.07	170628.90
01.019i1	10.04	0.97	No modelled data	No modelled data	12.01	17.39	9.65	9.66	358409.75	170482.38
01.021i2	10.16	0.96	No modelled data	No modelled data	12.02	17.89	9.99	9.99	358362.47	170376.05
01.024i4	12.48	0.96	No modelled data	No modelled data	15.15	34.62	12.30	12.30	358167.52	170046.59
01.024i4a	12.47	0.96	No modelled data	No modelled data	14.99	43.52	12.29	12.29	358177.48	170053.97
01.026i1	13.06	0.96	No modelled data	No modelled data	15.11	50.79	12.94	12.94	358104.87	169959.11
1.009	10.00	1.41	No modelled data	No modelled data	11.89	13.53	9.26	9.44	358469.32	171054.95
1.026	13.11	0.96	No modelled data	No modelled data	15.52	36.60	12.99	12.99	358108.03	169944.17
Pige37i3	12.05	0.96	No modelled data	No modelled data	13.32	37.05	11.89	11.89	358211.18	170155.72
Pige38i2	10.95	0.96	No modelled data	No modelled data	12.76	21.85	10.84	10.84	358289.69	170253.80
01.013i2	10.01	1.30	10.24	1.52	No modelled data	No modelled data	No modelled data	No modelled data	358480.38	170877.25
01.015i2	10.01	1.13	10.24	1.32	No modelled data	No modelled data	No modelled data	No modelled data	358463.24	170724.59
01.016i1	10.02	1.04	10.24	1.22	No modelled data	No modelled data	No modelled data	No modelled data	358426.07	170628.90
01.019i1	10.04	0.97	10.26	1.15	No modelled data	No modelled data	No modelled data	No modelled data	358409.75	170482.38
01.021i2	10.16	0.96	10.30	1.13	No modelled data	No modelled data	No modelled data	No modelled data	358362.47	170376.05
01.024i4	12.48	0.96	12.54	1.14	No modelled data	No modelled data	No modelled data	No modelled data	358167.52	170046.59
01.024i4a	12.47	0.96	12.54	1.14	No modelled data	No modelled data	No modelled data	No modelled data	358177.48	170053.97
01.026i1	13.06	0.96	13.11	1.15	No modelled data	No modelled data	No modelled data	No modelled data	358104.87	169959.11
Pige37i3	12.05	0.96	12.11	1.13	No modelled data	No modelled data	No modelled data	No modelled data	358211.18	170155.72
Pige38i2	10.95	0.96	10.99	1.13	No modelled data	No modelled data	No modelled data	No modelled data	358289.69	170253.80

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR	LEV_100YR
COL_1038	Colliters Brook	BCC - CAFRA 2011	Defended	7.40	0.97	7.50	1.22	7.50	1.27	7.53
COL_1038D	Colliters Brook	BCC - CAFRA 2011	Defended	7.39	0.97	7.49	1.22	7.49	1.27	7.52
COL_1140	Colliters Brook	BCC - CAFRA 2011	Defended	7.41	1.02	7.51	1.22	7.51	1.30	7.54
COL_1038	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.53					
COL_1038D	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.52					
COL_1140	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.54					
COL_1251	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.61					
COL_1379	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.78					
COLc847S	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data						
COLi611	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.35					
COLi693	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.35					
COLi773	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.36					
LONG_1315	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.48					
LONGi1057	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.45					
LONGi1180	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.46					
LONGi1435	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.51					
COL_1251	Colliters Brook	BCC - CAFRA 2011	Defended	7.47	1.06	7.58	1.26	7.58	1.34	7.61
COL_1379	Colliters Brook	BCC - CAFRA 2011	Defended	7.64	1.08	7.73	1.29	7.75	1.36	7.78
COLc847S	Colliters Brook	BCC - CAFRA 2011	Defended	No modelled data						
COLi611	Colliters Brook	BCC - CAFRA 2011	Defended	7.30	1.73	7.39	2.49	7.33	2.35	7.35
COLi693	Colliters Brook	BCC - CAFRA 2011	Defended	7.30	1.37	7.39	1.90	7.33	1.79	7.35
COLi773	Colliters Brook	BCC - CAFRA 2011	Defended	7.31	1.02	7.39	1.22	7.35	1.27	7.36
LONG_1315	Longmoor Brook	BCC - CAFRA 2011	Defended	7.37	7.47	7.83	12.06	7.43	9.72	7.48
LONGi1057	Longmoor Brook	BCC - CAFRA 2011	Defended	7.36	8.31	7.82	12.98	7.42	10.48	7.45
LONGi1180	Longmoor Brook	BCC - CAFRA 2011	Defended	7.37	7.85	7.83	12.54	7.42	10.06	7.46
LONGi1435	Longmoor Brook	BCC - CAFRA 2011	Defended	7.38	7.22	7.84	11.73	7.46	9.52	7.51

NODE	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
COL_1038	1.35	7.70	1.40	No modelled data	No modelled data	No modelled data	No modelled data	356770.51	171117.81
COL_1038D	1.35	7.70	1.40	No modelled data	No modelled data	No modelled data	No modelled data	356775.18	171123.89
COL_1140	1.37	7.71	1.45	No modelled data	No modelled data	No modelled data	No modelled data	356700.52	171055.45
COL_1038	1.35	No modelled data	No modelled data	7.81	1.47	7.34	7.35	356770.51	171117.81
COL_1038D	1.35	No modelled data	No modelled data	7.81	1.47	7.34	7.34	356775.18	171123.89
COL_1140	1.37	No modelled data	No modelled data	7.82	1.85	7.35	7.36	356700.52	171055.45
COL_1251	1.42	No modelled data	No modelled data	7.84	2.08	7.40	7.40	356611.70	170997.18
COL_1379	1.45	No modelled data	No modelled data	7.96	2.09	7.52	7.52	356513.42	170924.20
COLc847S	No modelled data	356919.99	171229.67						
COLi611	2.50	No modelled data	No modelled data	7.55	2.39	7.29	7.29	356857.21	171443.22
COLi693	1.92	No modelled data	No modelled data	7.55	1.52	7.29	7.29	356892.64	171369.16
COLi773	1.35	No modelled data	No modelled data	7.56	1.68	7.29	7.29	356919.43	171292.44
LONG_1315	10.33	No modelled data	No modelled data	8.02	16.91	7.54	7.56	356302.14	171094.11
LONGi1057	11.02	No modelled data	No modelled data	7.94	17.42	7.53	7.56	356511.43	171258.16
LONGi1180	10.69	No modelled data	No modelled data	7.98	17.16	7.53	7.56	356415.84	171162.56
LONGi1435	10.13	No modelled data	No modelled data	8.08	16.68	7.54	7.56	356202.02	171028.78
COL_1251	1.42	7.75	1.65	No modelled data	No modelled data	No modelled data	No modelled data	356611.70	170997.18
COL_1379	1.45	7.88	1.67	No modelled data	No modelled data	No modelled data	No modelled data	356513.42	170924.20
COLc847S	No modelled data	356919.99	171229.67						
COLi611	2.50	7.51	2.64	No modelled data	No modelled data	No modelled data	No modelled data	356857.21	171443.22
COLi693	1.92	7.51	1.96	No modelled data	No modelled data	No modelled data	No modelled data	356892.64	171369.16
COLi773	1.35	7.52	1.55	No modelled data	No modelled data	No modelled data	No modelled data	356919.43	171292.44
LONG_1315	10.34	8.09	15.27	No modelled data	No modelled data	No modelled data	No modelled data	356302.14	171094.11
LONGi1057	11.02	8.06	16.17	No modelled data	No modelled data	No modelled data	No modelled data	356511.43	171258.16
LONGi1180	10.69	8.07	15.69	No modelled data	No modelled data	No modelled data	No modelled data	356415.84	171162.56
LONGi1435	10.13	8.11	14.99	No modelled data	No modelled data	No modelled data	No modelled data	356202.02	171028.78

NODE	WATERCOURSE	TITLE	SCENARIO	LEV_20YR CC	FLO_20YR CC	LEV_20CC	FLO_20CC	LEV_75YR	FLO_75YR	LEV_100YR
COL_1038	Colliters Brook	BCC - CAFRA 2011	Defended	7.40	0.97	7.50	1.22	7.50	1.27	7.53
COL_1038D	Colliters Brook	BCC - CAFRA 2011	Defended	7.39	0.97	7.49	1.22	7.49	1.27	7.52
COL_1140	Colliters Brook	BCC - CAFRA 2011	Defended	7.41	1.02	7.51	1.22	7.51	1.30	7.54
COL_1038	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.53					
COL_1038D	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.52					
COL_1140	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.54					
COL_1251	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.61					
COL_1379	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.78					
COLc847S	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data						
COLi611	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.35					
COLi693	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.35					
COLi773	Colliters Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.36					
LONG_1315	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.48					
LONGi1057	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.45					
LONGi1180	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.46					
LONGi1435	Longmoor Brook	BCC - CAFRA 2011	Undefended	No modelled data	7.51					
COL_1251	Colliters Brook	BCC - CAFRA 2011	Defended	7.47	1.06	7.58	1.26	7.58	1.34	7.61
COL_1379	Colliters Brook	BCC - CAFRA 2011	Defended	7.64	1.08	7.73	1.29	7.75	1.36	7.78
COLc847S	Colliters Brook	BCC - CAFRA 2011	Defended	No modelled data						
COLi611	Colliters Brook	BCC - CAFRA 2011	Defended	7.30	1.73	7.39	2.49	7.33	2.35	7.35
COLi693	Colliters Brook	BCC - CAFRA 2011	Defended	7.30	1.37	7.39	1.90	7.33	1.79	7.35
COLi773	Colliters Brook	BCC - CAFRA 2011	Defended	7.31	1.02	7.39	1.22	7.35	1.27	7.36
LONG_1315	Longmoor Brook	BCC - CAFRA 2011	Defended	7.37	7.47	7.83	12.06	7.43	9.72	7.48
LONGi1057	Longmoor Brook	BCC - CAFRA 2011	Defended	7.36	8.31	7.82	12.98	7.42	10.48	7.45
LONGi1180	Longmoor Brook	BCC - CAFRA 2011	Defended	7.37	7.85	7.83	12.54	7.42	10.06	7.46
LONGi1435	Longmoor Brook	BCC - CAFRA 2011	Defended	7.38	7.22	7.84	11.73	7.46	9.52	7.51

NODE	FLO_100YR	LEV_100YR CC	FLO_100YR CC	LEV_1000YR	FLO_1000YR	TIDE200YR	TIDE1000YR	X	Y
COL_1038	1.35	7.70	1.40	No modelled data	No modelled data	No modelled data	No modelled data	356770.51	171117.81
COL_1038D	1.35	7.70	1.40	No modelled data	No modelled data	No modelled data	No modelled data	356775.18	171123.89
COL_1140	1.37	7.71	1.45	No modelled data	No modelled data	No modelled data	No modelled data	356700.52	171055.45
COL_1038	1.35	No modelled data	No modelled data	7.81	1.47	7.34	7.35	356770.51	171117.81
COL_1038D	1.35	No modelled data	No modelled data	7.81	1.47	7.34	7.34	356775.18	171123.89
COL_1140	1.37	No modelled data	No modelled data	7.82	1.85	7.35	7.36	356700.52	171055.45
COL_1251	1.42	No modelled data	No modelled data	7.84	2.08	7.40	7.40	356611.70	170997.18
COL_1379	1.45	No modelled data	No modelled data	7.96	2.09	7.52	7.52	356513.42	170924.20
COLc847S	No modelled data	356919.99	171229.67						
COLi611	2.50	No modelled data	No modelled data	7.55	2.39	7.29	7.29	356857.21	171443.22
COLi693	1.92	No modelled data	No modelled data	7.55	1.52	7.29	7.29	356892.64	171369.16
COLi773	1.35	No modelled data	No modelled data	7.56	1.68	7.29	7.29	356919.43	171292.44
LONG_1315	10.33	No modelled data	No modelled data	8.02	16.91	7.54	7.56	356302.14	171094.11
LONGi1057	11.02	No modelled data	No modelled data	7.94	17.42	7.53	7.56	356511.43	171258.16
LONGi1180	10.69	No modelled data	No modelled data	7.98	17.16	7.53	7.56	356415.84	171162.56
LONGi1435	10.13	No modelled data	No modelled data	8.08	16.68	7.54	7.56	356202.02	171028.78
COL_1251	1.42	7.75	1.65	No modelled data	No modelled data	No modelled data	No modelled data	356611.70	170997.18
COL_1379	1.45	7.88	1.67	No modelled data	No modelled data	No modelled data	No modelled data	356513.42	170924.20
COLc847S	No modelled data	356919.99	171229.67						
COLi611	2.50	7.51	2.64	No modelled data	No modelled data	No modelled data	No modelled data	356857.21	171443.22
COLi693	1.92	7.51	1.96	No modelled data	No modelled data	No modelled data	No modelled data	356892.64	171369.16
COLi773	1.35	7.52	1.55	No modelled data	No modelled data	No modelled data	No modelled data	356919.43	171292.44
LONG_1315	10.34	8.09	15.27	No modelled data	No modelled data	No modelled data	No modelled data	356302.14	171094.11
LONGi1057	11.02	8.06	16.17	No modelled data	No modelled data	No modelled data	No modelled data	356511.43	171258.16
LONGi1180	10.69	8.07	15.69	No modelled data	No modelled data	No modelled data	No modelled data	356415.84	171162.56
LONGi1435	10.13	8.11	14.99	No modelled data	No modelled data	No modelled data	No modelled data	356202.02	171028.78