

Appendix C Development Proposals

- CSA Environmental, Concept Masterplan, Land at Colney Heath, Drawing reference: CSA/3925/117, Rev: A (16 June 2022)



Site Boundary: 7.82ha

Developable Area

Proposed residential area: 3.75ha
(Up to 150 dwellings @ 40 dph)

Movement & Circulation

- Proposed primary vehicular access point
- Proposed spine street through the development
- Proposed secondary streets
- Proposed lanes and private drives
- Recreational routes and Trim-Trail Stations
- Mown paths
- Potential pedestrian links
- Public Rights of Way

Green & Blue Infrastructure

- Public open space to serve the new development
- Avenue street tree planting
- Proposed new boundary hedgerow planting
- Proposed play provision for children and young people
- Proposed sustainable drainage basins and swales (SuDS)
- Existing vegetation
- Potential seating/picnic area
- Proposed location for pumping station and 15m cordon sanitaire

Surrounding Context

- Existing waterbodies and water courses
- Listed Buildings
- Colney Heath Local Nature Reserve
- Existing bus route and bus stops

Rev	Date	By	Description
A	16/06/2022	KP	Pumping station added, landscaping within LWS amended

CSA environmental

Dixies Barns, High Street,
Ashwell, Hertfordshire SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Project Land at Tollgate Road
COLNEY HEATH

Title Concept Masterplan

Client Vistry Group

Scale 1:2500 @ A3 **Drawn** KP

Date June 2022 **Checked** JC

Drawing No. CSA/3925/117 **Rev** A

Appendix D Stakeholder Correspondence

- Environment Agency correspondence
- St Albans City and District Council correspondence
- Thames Water correspondence
- British Pipeline Agency correspondence

From: NET Enquiries [REDACTED]
Sent: 17 March 2022 14:01
To: Riley, Yvonne
Subject: RE: HNL 253613NR - 220218/DJ05. Land at Tollgate Road - EA Data Request
Attachments: HNL 253613NR P4.pdf

Dear Yvonne

Enquiry regarding Product 4, 5, 6 & 7 for Land at Tollgate Road, 520865, 205496

Thank you for your enquiry which was received on 17 February 2022.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please note that the Flood Map for Planning map and the Assets and Defences map and data is available for you to view or download yourself, see the links below.

Name	Product 4
Description	Basic Flood Risk Assessment Map for Land at Tollgate Road, 520865, 205496
Licence	Open Government Licence
Information Warnings	None.
Information Warning - OS background mapping	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.</i>
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P5, 6 & 7: <https://ea.sharefile.com/d-sb27cace13bc469db>

Name	Products 5, 6 and 7
Description	<i>Upper Colne Flood Risk Mapping Study (Halcrow, 2010)</i>
Licence	Environment Agency Conditional Licence
Conditions	1.0 You may use the Information for your internal or personal purposes and may only sublicense others to use it if you do so under a written licence which includes the terms of these conditions and the agreement and in particular may not allow any period of use longer than the period licensed to you.

2.0 Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of 5 years at the end of which it will terminate automatically without notice.

3.0 We have restricted use of the Information as a result of legal restrictions placed upon us to protect the rights or confidentiality of others. In this instance it is because of third party data. If you contact us in writing (this includes email) we will, as far as confidentiality rules allow, provide you with details including, if available, how you might seek permission from a third party to extend your use rights.

4.1 The Information may contain some data that we believe is within the definition of “personal data” under the Data Protection Act 1998 but we consider that we will not be in breach of the Act if we disclose it to you with conditions set out in this condition and the conditions above. This personal data comprises names of individuals or commentary relating to property that may be owned by an individual or commentary relating to the activities of an individual.

4.2 Under the Act a person who holds and uses or passes to others personal data is responsible for any compliance with the Act and so we have no option but to warn you that this means you have responsibility to check that you are compliant with the Act in respect of this personal data.

5.0 The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km². Information about the operation of flood assets should not be published..

6.1 Where we have supplied model data which may include model inputs or outputs you agree to supply to the Environment Agency copies of any assessments/studies and related outputs, modifications or derivatives created pursuant to the supply to you of the Information, all of which are hereinafter referred to as “the Data”.

6.2 You agree, in the public interest to grant to the Environment Agency a perpetual royalty free non-exclusive licence to use the Data or any part thereof for its internal purposes or to use it in any way as part of Environment Agency derivative products which it supplies free of charge to others such as incorporation into the Environment Agency's Open Data mapping products.

Information Warnings	Please be aware that model data is not raw, factual or measured but comprises of estimations or modelled results based on the data available to us. This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences.
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However, you MUST first check the supporting information and the above link to determine if the conditions on use are suitable for your purposes. If they aren't, this information is not provided with a licence for use, and the data is provided for read right only.

For critical drainage you will need to speak to the Local Authority.

There are no projects for the local area. You can see the state and conditions for the defences in the links below. The details of the modelling will be in the P5, 6 & 7.

Here is the link to the climate change allowances: <https://www.gov.uk/government/publications/peak-river-flow-climate-change-allowances-by-management-catchment>

Further details about the Environment Agency information supplied can be found on the GOV.UK website:

<https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments

<https://www.gov.uk/planning-applications-assessing-flood-risk>

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Data Available Online

Many of our flood datasets are available online:

- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Assets and Defences](#)
- [Current Flood Warnings](#)

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Kind regards,

Naoimh Richardson
Customers and Engagement Officer

Environment Agency, Hertfordshire and North London
Alchemy, Bessemer Road, Welwyn Garden City, Hertfordshire, AL7 1HE

Working days: Monday to Friday 7am – 3pm

Pronouns: she/her ([why is this here?](#))



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From: [Planning Policy \(SADC\)](#)
To: [Riley, Yvonne](#)
Cc: [Soderberg, Asa](#); [Bakopoulou, Christina](#)
Subject: RE: Land at Tollgate Road - SACDC Data Request
Date: 17 February 2022 16:08:15
Attachments: [image008.png](#)
[image015.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.jpg](#)

Dear Yvonne,

Thank you for your email.

You can view the current adopted Local Plan, The District Local Plan Review 1994 (saved policies) at the link below:

<https://www.stalbans.gov.uk/current-local-plan>

The Council is preparing a new draft Local Plan and supporting evidence base. You can view the environment section of the draft evidence base (which includes the South West Hertfordshire Level 1 Strategic Flood Risk Assessment) at the links below:

<https://www.stalbans.gov.uk/environment-documents>

<https://www.stalbans.gov.uk/evidence-base>

Hertfordshire County Council are the Lead Local Flood Authority covering St Albans District, please see links below for further information:

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/flooding-in-hertfordshire.aspx>

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/managing-flood-risks.aspx>

I hope this helps to answer your queries.

Best wishes,

David

David Mosco
Spatial Planning Assistant
Planning and Building Control

St Albans City and District Council

01727 866100
Ext: 9331

Council general home page: www.stalbans.gov.uk

Council contact details and address: www.stalbans.gov.uk/contact-us

Working pattern: Monday, Wednesday, Thursday and Friday

From: Riley, Yvonne [REDACTED]
Sent: 17 February 2022 15:32
To: Planning Policy (SADC) [REDACTED] >
Cc: Soderberg, Asa [REDACTED]; Bakopoulou, Christina [REDACTED]
Subject: Land at Tollgate Road - SACDC Data Request

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To whom it may concern,

Hopefully you can be of assistance. Stantec has been commissioned to undertake a Flood Risk Assessment and Drainage Strategy (both Surface Water and Foul) to support an outline planning application for the site of Land at Tollgate Road, Colney Heath, shown in the attached location plan. The site will comprise of a residential development and has an approximate grid reference of 520865E, 205496N.

The online Flood Map for Planning shows that the majority of the site is located within Flood Zone 1. However, a route along the western part of the site falls within Flood Zone 3. The majority of the site is located within areas of very low risk of surface water flooding, with some pockets of medium and high risk of surface water flooding. A route along the western boundary of the site, is showing to be at high risk of surface water flooding.

We have also requested information from the Environment Agency, Hertfordshire County Council, and Thames Water but we would be very grateful for the following information where available:

- Any records of flooding in the vicinity of the site.
- Any maps or information on surface water flood risk other than those held by the Environment Agency.
- As above for groundwater flood risk.
- Maps or information regarding local land drainage systems.
- As above for highway drainage systems.
- Information on the local strategy for dealing with surface water.
- Any information on infiltration drainage potential at the site.
- Types of SuDS likely to be acceptable for adoption.
- Any runoff restrictions that may apply at this location (over and above requirements set out in NPPF) e.g. Critical Drainage Areas.
- Anything else you feel is relevant that an FRA would need to consider.

We would also be interested in your current policy with regards to the new EA climate change guidance.

We look forward to your reply at your earliest convenience. Meanwhile, if you have any queries, please do not hesitate to get in touch using the contact details below.

Kind regards,


Yvonne

Yvonne Riley
BSc(Hons) MSc

Graduate Engineer

Waterloo House, Victoria Square, Birmingham, B2 5TB



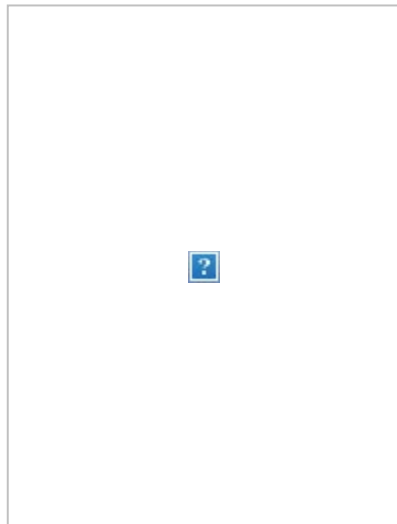
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Mrs Emma Thornes

STANTEC

11 Prospect Court,
Courteenhall Road,
Blisworth,
Northamptonshire,
NN7 3DG

**Wastewater
pre-planning**



Our ref **DS6093339, DTS-72409**

30 March 2022

Pre-planning enquiry: Confirmation of sufficient capacity

Site: Land South of Tollgate Road, Colney Heath, Hertfordshire - AL4 0PY

Dear Emma,

Thank you for providing information on your proposed development.

Existing site: Greenfield site.

Proposed site: Housing (150 units).

Proposed foul water discharge by gravity (75 units) and remaining by pumped discharge at 3.8 l/s into manhole TL20058601.

Proposed surface water discharge to nearby watercourse.

We're pleased to confirm that there will be sufficient foul water capacity in our sewerage network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s.

If you've any further questions, please contact me on 07747 647 155.

Kind Regards

Zaid Kazi

Developer Services – Major Projects, Project Engineer

Get advice on making your sewer connection correctly at connectright.org.uk

Clearwater Court, Vastern Road, Reading, RG1 8DB

Find us online at developers.thameswater.co.uk

From: Thornes, Emma
Sent: 24 February 2022 10:34
To: Soderberg, Asa; Truslove, Lawrence; Chapman, Jo
Subject: FW: BPA Affected Consultation 2022-4030 ~ New Development - Tollgate Road ~ 3925-105 CRM:0039300
Attachments: 3925_109_A Red Line Location Plan.pdf; Map_2022-4030.pdf
Importance: High

[A bit more detail on the oil pipeline below.](#)

Kind regards,

Emma Thornes TMIET

Principal Technician
11 Prospect Court
Courteenhall Road
Blisworth
Northampton
NN7 3DG
United Kingdom



[My working days are Tuesday to Thursday](#)



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From: Lands 
Sent: 24 February 2022 10:22
To: Thornes, Emma 
Cc: Kevin Padley-Knight ; Adam Cruickshank 
Subject: FW: BPA Affected Consultation 2022-4030 ~ New Development - Tollgate Road ~ 3925-105 CRM:0039300
Importance: High

To Emma.
Thank you for your enquiry, please see blow for details requested.

The pipeline on the is site is a UKOP - Thames Mersey Pipeline - Epping to Hemel Junction Section.
Diameter - 14" NB 350mm
Approx. Depth - 0.9m 3ft
Appropriating Pressure - 1200 psi
Capacity - 9181 m3
Nominal Wall - 7.14mm
Material – Steel API 5L X52
Contents – Multiproduct – Diesel; Petrol; Kerosine and Jet A1.

The easement of these pipelines is 6m, 3 metres each side of the pipeline.

No buildings can be located within the pipeline easement and Heavy vehicle crossing points to be approved before use across the easement.

All development proposal must be agreed prior to commencement with BPA.
Below are the basic guidelines to safe working with the pipelines . This guidance can also be found on the PLX letter you were sent and in the special requirements booklet provided.

- Before any work (including hand trial holes) starts in the vicinity, a BPA Technician must locate and mark the pipeline(s) on site.
- All works within 6m of the pipeline require prior approval by BPA and a BPA Technician must supervise all works within 6m of the pipeline(s). The technician will determine whether a written method statement is necessary before any works proceed.
- Heavy vehicle crossing points to be approved before use across the easement.
- Any works involving the exposure of the pipeline/s requires a continuous site presence until backfilled (this may mean a security arrangement out of hours).
- BPA may require proof of liability insurance depending on the proposed works.
- Utility crossings may require a formal crossing consent
- No buildings can be located within the pipeline easement.

When planning works which involve crossing or working within the easement of the pipeline, the following will be requested before works can start:

- A confirmed or proposed programmed start date for the works
- A detailed description of the proposed works
- A plan of the work area
- Drawings and a method statement for the written approval of BPA.

I hope the information provided has helped with your request.

Regards
Nicki

From: Thornes, Emma [REDACTED]
Sent: 23 February 2022 15:08
To: Lands [REDACTED]
Cc: Nicki Farenden [REDACTED]
Subject: RE: BPA Affected Consultation 2022-4030 ~ New Development - Tollgate Road ~ 3925-105 CRM:0039300

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Hello

Please could you give me the pipeline details, size, material, contents, and the building restrictions associated with the it at the proposed site location.

Thanks, Emma

Kind regards,

Emma Thornes TMIET

Principal Technician
11 Prospect Court
Courteenhall Road
Blisworth
Northampton
NN7 3DG
United Kingdom

[REDACTED]
[REDACTED]

My working days are Tuesday to Thursday



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From: Lands [REDACTED]
Sent: 21 February 2022 08:57
To: Thornes, Emma [REDACTED]
Subject: FW: BPA Affected Consultation 2022-4030 ~ New Development - Tollgate Road ~ 3925-105 CRM:0039300

Dear Emma Thornes

BPA Pipelines - Affected Consultation

Our Ref	2022-4030
Your Ref	3925-105
Linesearch Ref	
Location	520904 205463 Tollgate Road Colney Heath
Work Description	Proposed Development site
Technician Area	Mid-South

Thank you for your enquiry regarding the work at the above location.

Your proposed works are in close proximity to a high pressure pipeline system operated by BPA. Please find attached our GIS map. Before any work (including hand trial holes) starts on site you must consult with BPA. Email **Nicki Farenden at [REDACTED]** to arrange a free site meeting with one of our Technicians.

Your safety is paramount to BPA. In order to protect you from potential injury or death we ask that this safety information is passed to the person that will be carrying out the work.

BPA regularly monitor the pipelines and we ask that the following procedures are observed:

- Before any work (including hand trial holes) starts in the vicinity, a BPA Technician must locate and mark the pipeline(s) on site.
- All works within 6m of the pipeline require prior approval by BPA and a BPA Technician must supervise all works within 6m of the pipeline(s). The technician will determine whether a written method statement is necessary before any works proceed.
- BPA require a minimum of 7 days' notice to arrange supervision (under normal circumstances).
- Heavy vehicle crossing points to be approved before use across the easement.
- Any works involving the exposure of the pipeline/s requires a continuous site presence until backfilled (this may mean a security arrangement out of hours).
- BPA may require proof of liability insurance depending on the proposed works.
- Utility crossings may require a formal crossing consent
- No buildings can be located within the pipeline easement.
- BPA do not charge for the first three days of supervision (this includes site meetings). After that, BPA will charge for any future supervision.

When planning works which involve crossing or working within the easement of the pipeline, the following will be requested before works can start:

- **A confirmed or proposed programmed start date for the works**
- **A detailed description of the proposed works**
- **A plan of the work area**

- Drawings and a method statement for the written approval of BPA.

For more information about working in close proximity to pipelines please visit <http://www.linewatch.co.uk/downloads.php>.

Please quote BPA Reference number **2022-4030** in all correspondence.

Yours sincerely

Lands Department

+44 (0)7766 781297
lands@bpa.co.uk



British Pipeline Agency Limited
BPA Head Office • 5-7 Alexandra Road
Hemel Hempstead • Hertfordshire • HP2 5BS • UK
www.bpa.co.uk

----- Original Message -----

From: Emma Thornes [REDACTED]
Received: Thu Jan 20 2022 10:52:25 GMT+0000 (Greenwich Mean Time)
To: Lands [REDACTED]
Subject: Tollgate Road, Colney Heath - BPA

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Hello

Please could you send me the asset records for any apparatus within the vicinity of the proposed development site at Tollgate Road, Colney Heath.

OS X (Eastings) 520904
OS Y (Northings) 205463
Nat Grid TL209054 / TL2090405463
Nearest Post Code AL4 0PY

Thank you.

Kind regards,

Emma Thornes TMIET

Principal Technician
11 Prospect Court
Courteenhall Road
Blisworth
Northampton
NN7 3DG
United Kingdom

[REDACTED]
[REDACTED]

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BPA Reference Number: 2022-4030

Scale: 1:10,000

BPA Pipelines
— TK

5-7 Alexandra Road
 Hemel Hempstead
 Herts HP2 5BS
 United Kingdom

Tel: 44(0)1442 242200
 Fax: 44(0)1442 214077
 business@bpa.co.uk
 www.bpa.co.uk



From: [Kevin Padley-Knight](#)
To: [Bakopoulou, Christina](#)
Cc: [Thornes, Emma](#)
Subject: RE: Tollgate Road, Colney Heath surface water drainage proposals ~ 2022-4030
Date: 26 May 2022 15:17:36
Attachments: [image003.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image010.png](#)
[image011.png](#)

Hi Christina

Thanks for this – sometimes it’s easier to see something visual!

Any works within the pipeline easement will need supervising, and RAMS will need to be accepted by our Engineering department prior.

The new pipes will need at least 600mm clearance over our pipeline, and if they are 300mm or more in diameter then a crossing consent will also be required for them. Note that this is a legal process and will take at least 3 months to be processed, and all documentation (RAMS, cross sectional drawings etc) will need to be in place at the beginning of the process. Therefore the sooner you can confirm the diameters the quicker we can get on with processing this if it is required.

Hope that helps

Kind regards

Kevin Padley-Knight
Landowner Services Manager



British Pipeline Agency Limited
BPA Head Office • 5-7 Alexandra Road
Hemel Hempstead • Hertfordshire • HP2 5BS • UK
www.bpa.co.uk



From: Bakopoulou, Christina [REDACTED]
Sent: 26 May 2022 14:40
To: Kevin Padley-Knight [REDACTED]
Cc: Thornes, Emma [REDACTED]
Subject: Tollgate Road, Colney Heath surface water drainage proposals

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Hi Kevin,

Thank you for your time on the phone this morning.

I'm sending you a sketch of our drainage proposals for the site by Tollgate Road, in Colney Heath (Easting: 520872, Northing: 205521)
As you can see we'd need to proposed two new surface water pipes, which would have to cross the BPA pipeline, and will eventually discharge to the River Colne.

Please let me know if you've got any additional thoughts on it.

Kind regards,
Christina

Christina Bakopoulou MEng MSc PhD GMICE
Senior Engineer



Stantec
3rd Floor
50-60 Station Road
Cambridge
CB1 2JH
UNITED KINGDOM



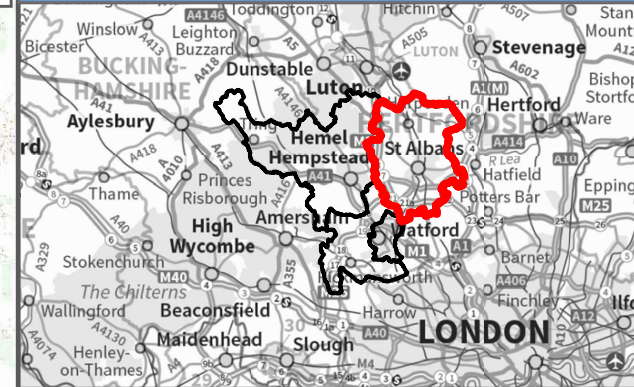
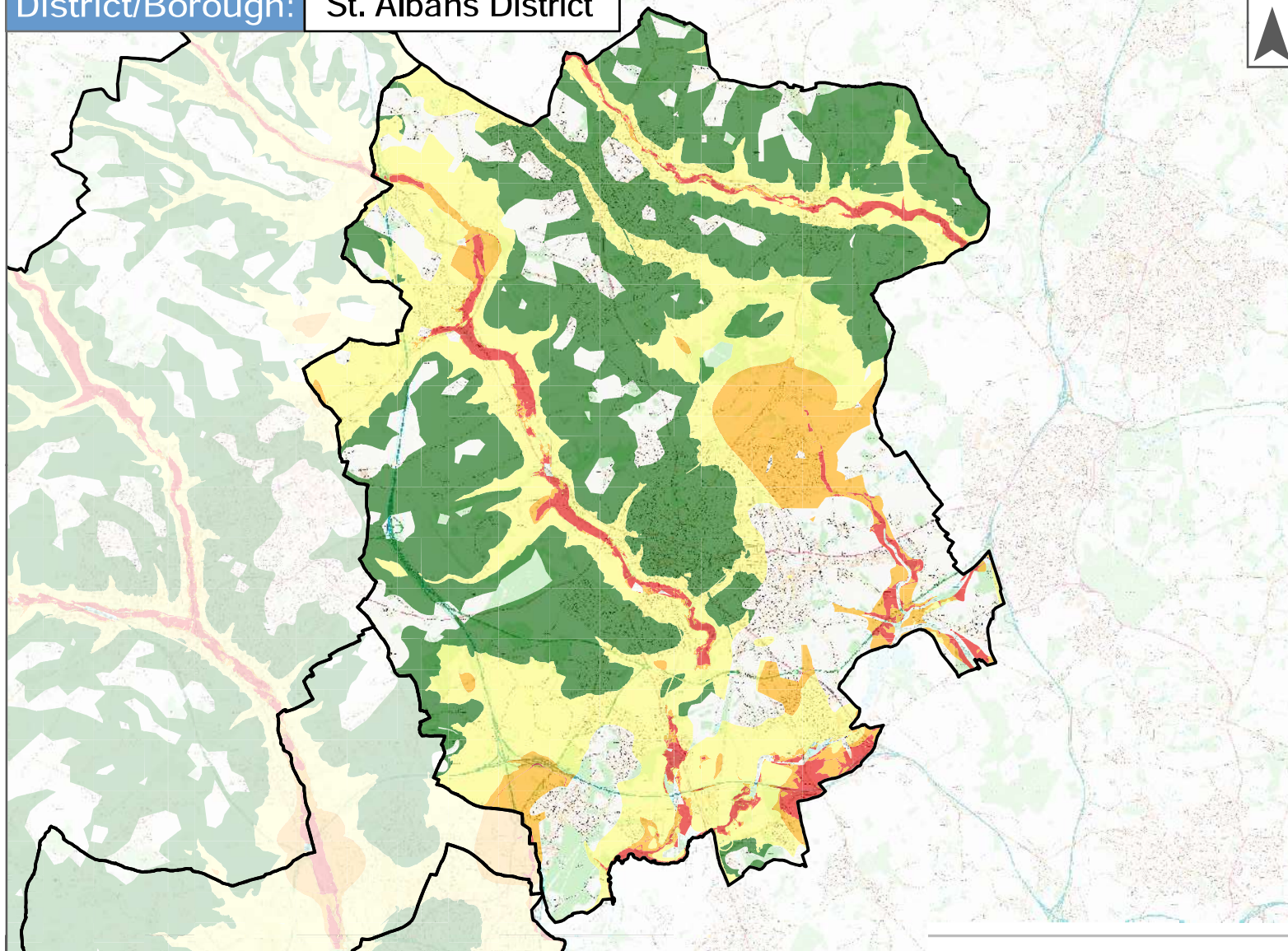
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Appendix E HCC Extracts

- Hertfordshire County Council Groundwater flooding map extract



LEGEND: Flood Risk Mapping

- | | |
|--|--|
| Flood Zones | Climate Change |
| <input type="checkbox"/> Flood Zone 2 | <input type="checkbox"/> Flood Zone 3 + 35%CC |
| <input type="checkbox"/> Flood Zone 3 | <input type="checkbox"/> Flood Zone 3 + 70%CC |
| <input type="checkbox"/> Flood Zone 3b | <input type="checkbox"/> RoFSW + CC (1 in 100-year + 40% CC) |

- | | |
|---|--|
| JBA Groundwater Flood Risk Map | Defences |
| <input checked="" type="checkbox"/> At least 5m | <input type="checkbox"/> Embankment |
| <input type="checkbox"/> 0.5m to 5m | <input type="checkbox"/> Culvert |
| <input type="checkbox"/> 0.025m to 0.5m | <input type="checkbox"/> Wall |
| <input type="checkbox"/> At or near surface (<0.025m) | <input type="checkbox"/> Areas Benefitting from Flood Defences |

- | | |
|--|--|
| Risk of Flooding from Surface Water (RoFSW) | Flood Warning Areas |
| <input type="checkbox"/> High (1 in 30-year) | <input type="checkbox"/> Flood Warning Areas |
| <input type="checkbox"/> Medium (1 in 100-year) | |
| <input type="checkbox"/> Low (1 in 1,000-year) | |

- | |
|---|
| Reservoir Inundation Map |
| <input type="checkbox"/> Reservoir Flood Risk |

- | | |
|---|--|
| Natural Flood Management Opportunities | |
| <input type="checkbox"/> Runoff Attenuation Features - 1 in 30-year (3.3%AEP) | <input type="checkbox"/> Tree Planting (Floodplain) |
| <input type="checkbox"/> Runoff Attenuation Features - 1 in 100-year (1%AEP) | <input type="checkbox"/> Floodplain Reconnection |
| <input type="checkbox"/> Tree Planting (Riparian) | <input type="checkbox"/> Tree Planting (Wider Catchment) |

0	0.75	1.5	3	4.5
km				
Version no.	Date	Comment		
v2.0	Sept 2018	Final		

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LEGEND: Catchment Characteristics

- | | | |
|---|--|---|
| Study Boundary | WFD Catchments | |
| <input type="checkbox"/> South West Hertfordshire | <input type="checkbox"/> Bulbourne | <input type="checkbox"/> Lee (from Luton Hoo Lakes to Hertford) |
| Watercourses | <input type="checkbox"/> Chess | <input type="checkbox"/> Mimram (Codicote Bottom to Lee) |
| <input type="checkbox"/> Main River | <input type="checkbox"/> Colne (Confluence with Chess to River Thames) | <input type="checkbox"/> Pinn |
| <input type="checkbox"/> Ordinary Watercourses | <input type="checkbox"/> Colne (from Confluence with Ver to Gade) | <input type="checkbox"/> Thames upstream of Aylesbury |
| <input type="checkbox"/> Grand Union Canal | <input type="checkbox"/> Colne (upper east arm including Mimshall Brook) | <input type="checkbox"/> Tykeswater |
| | <input type="checkbox"/> Gade (Upper stretch Great Gaddesden to confluence with Bulbourne / GUC) | <input type="checkbox"/> Upper Colne and Ellen Brook |
| | <input type="checkbox"/> Gade (from confluence with Bulbourne to Chess) | <input type="checkbox"/> Ver |
| | | <input type="checkbox"/> Whistle Brook |

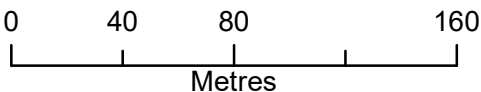
Appendix F Environment Agency Modelling

- Environment Agency Product 4

Detailed FRA centred on: Land at Tollgate Road - 10/03/2022 - HNL 253613NR



Environment Agency
 Alchemy,
 Bessemer Road,
 Welwyn Garden City,
 Hertfordshire,
 AL7 1HE



Legend

- Main Rivers
- Site location

Defended Flood Outlines

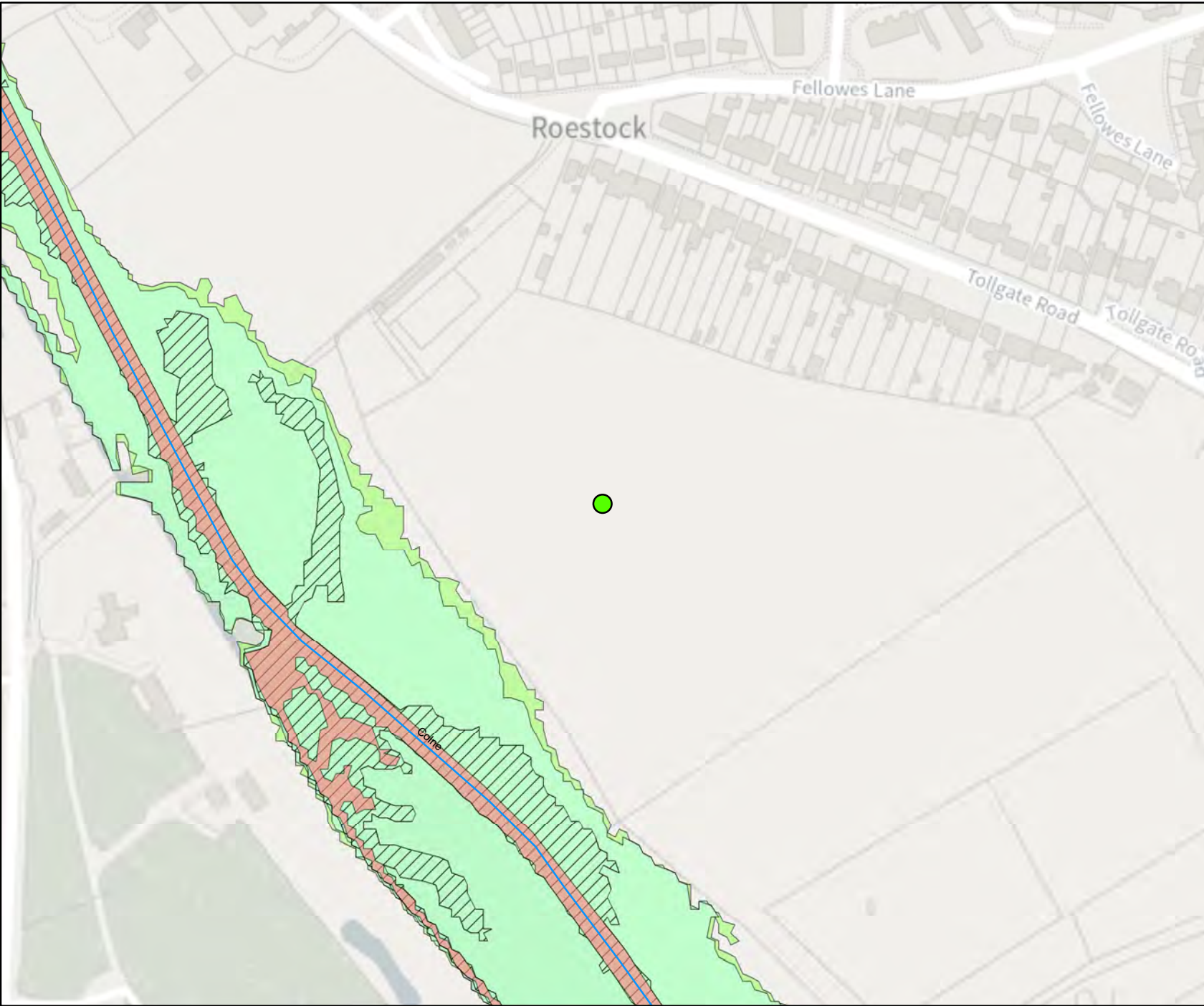
- 1 in 2 (50%) Defended
- 1 in 5 (20%) Defended
- 1 in 10 (10%) Defended
- 1 in 20 (5%) Defended

The data in this map has been extracted from the Upper Colne Flood Risk Mapping Study (Halcrow, 2010). This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment.

Modelled outlines take into account catchment wide defences.

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

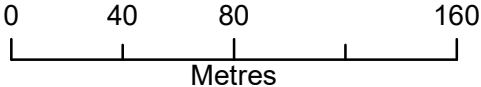
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Legend

- Main Rivers
- Site location

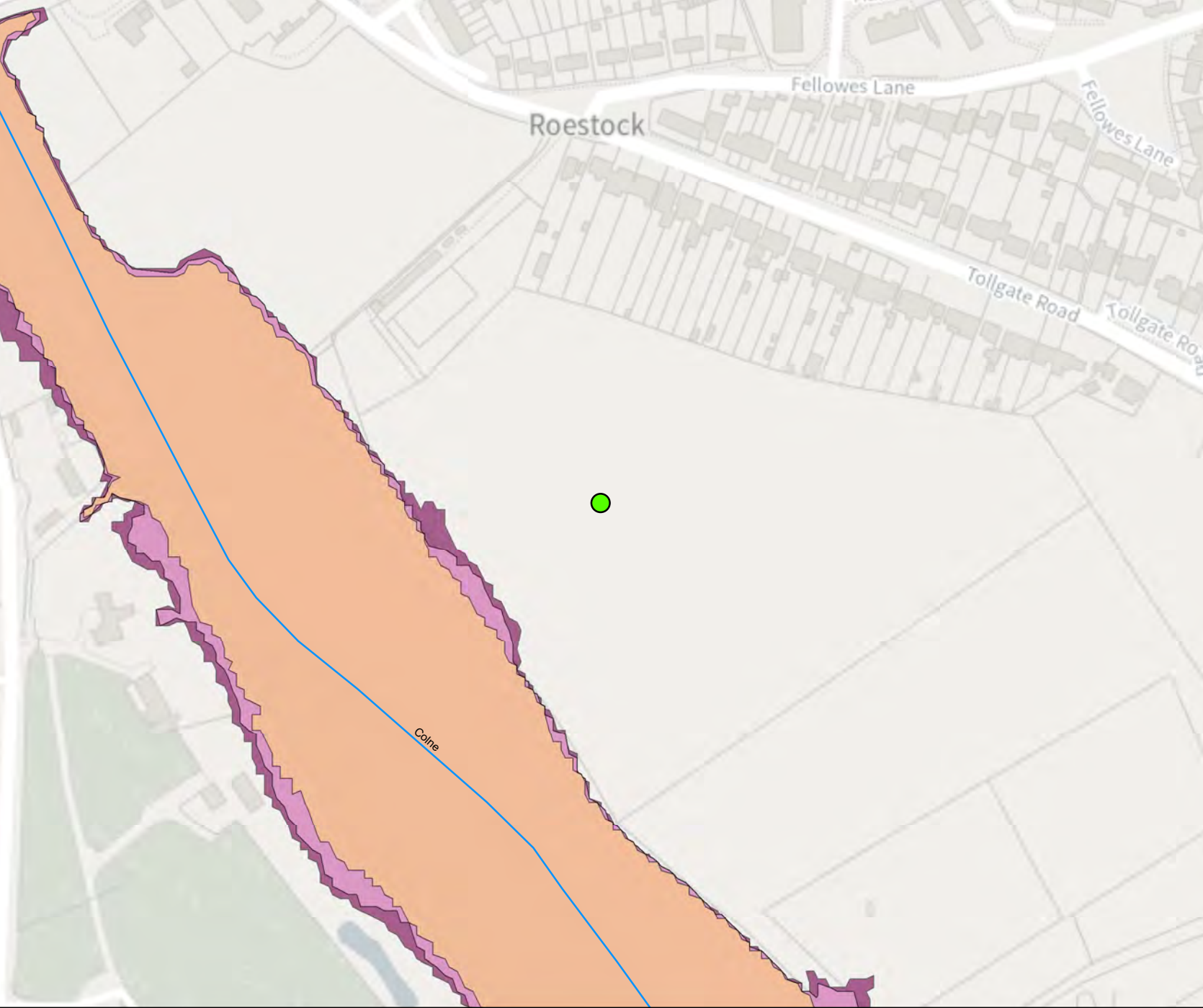
Defended Flood Outlines

- 1 in 50 (2%) Defended
- 1 in 100 (1%) Defended
- 1 in 200 (0.5%) Defended

The data in this map has been extracted from the Upper Colne Flood Risk Mapping Study (Halcrow, 2010). This model has been designed for catchment wide flood riskmapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences.

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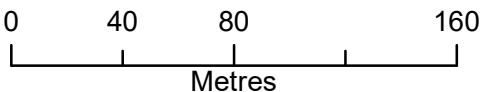


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Detailed FRA centred on: Land at Tollgate Road - 10/03/2022 - HNL 253613NR





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Legend

-  Main Rivers
-  Site location

Defended Flood Outlines

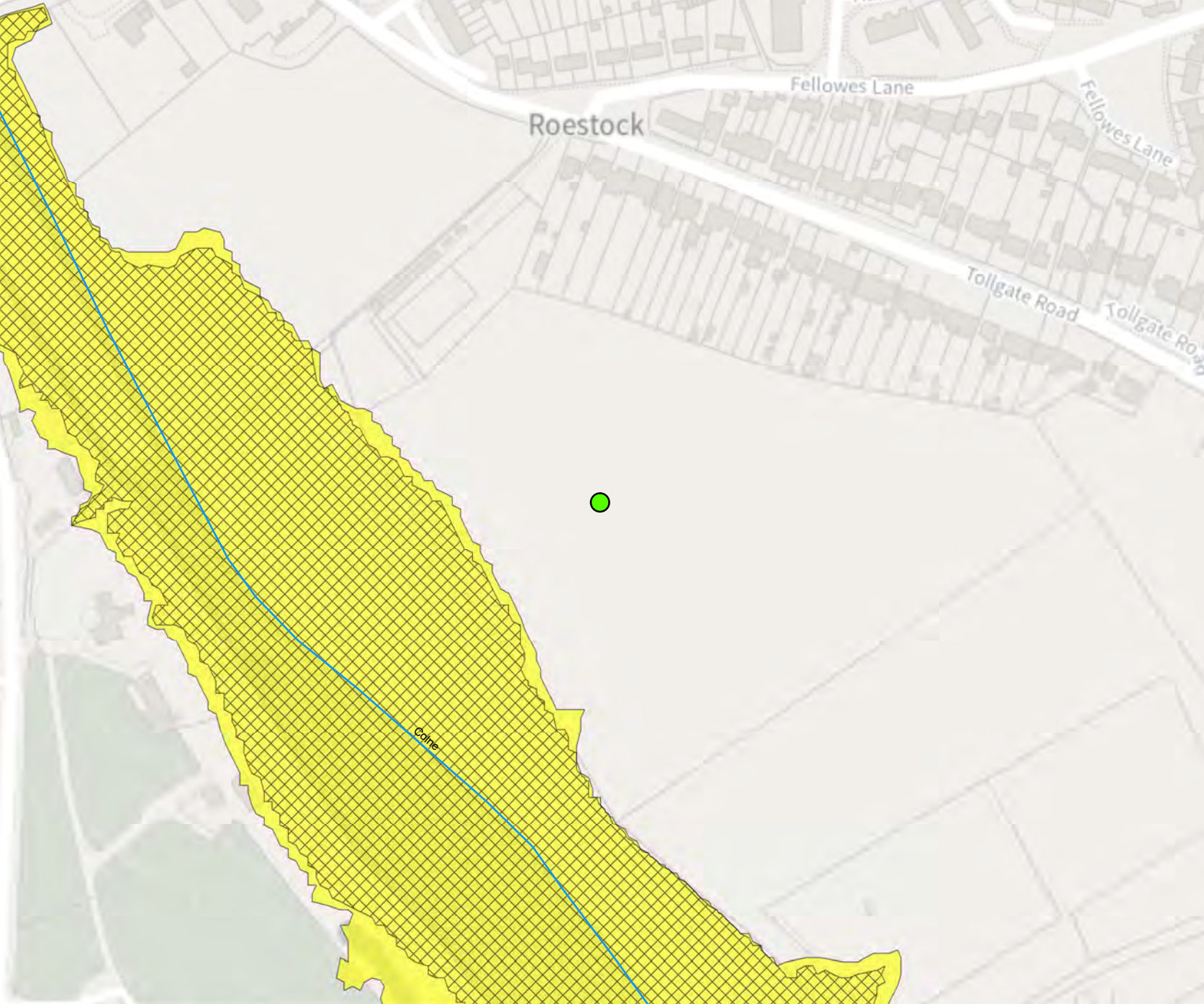
-  1 in 100+20% (*CC) Defended
-  1 in 1000 (0.1%) Defended

The data in this map has been extracted from the Upper Colne Flood Risk Mapping Study (Halcrow, 2010). This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment.

Modelled outlines take into account catchment wide defences.

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Environment Agency ref: HNL 253613 NR

The following information has been extracted from the Upper Colne Flood Risk Mapping Study (Halcrow, 2010)

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Caution:

This model has been designed for catchment wide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment.

All flood levels are given in metres Above Ordnance Datum (mAOD)

All flows are given in cubic metres per second (cumecs)

Based on an understanding of the data used to develop the hydraulic and hydrological model, and the resolution of hydrological and hydraulic representation, a confidence score of 1 (high) to 5 (low) was attributed to model results within different reaches of the Upper Colne catchment for each of the following four aspects and an average produced to provide an overall confidence score.

- Hydrological Data
- Hydrological Analysis
- Hydraulic Data
- Hydraulic Analysis

MODELLED FLOOD LEVEL

Node Label	Easting	Northing	Return Period									Confidence
			2 yr	5 yr	10 yr	20yr	50yr	100yr	100yr +20%	200yr	1000yr	
UC9733_668	520924	205190	71.02	71.14	71.46	71.54	71.68	71.81	71.95	71.89	72.15	3
UC9733_607	520892	205243	70.97	71.08	71.41	71.49	71.63	71.76	71.91	71.85	72.12	3
UC9733_507	520832	205323	70.87	70.98	71.30	71.39	71.54	71.68	71.84	71.77	72.07	3
UC9733_414	520764	205385	70.70	70.84	71.20	71.30	71.47	71.62	71.79	71.72	72.03	3
UC9733_317	520693	205451	70.53	70.68	71.11	71.21	71.39	71.55	71.73	71.66	71.99	3
UC9733_238u	520657	205512	70.45	70.59	71.01	71.13	71.33	71.50	71.69	71.61	71.96	3
UC9733_238d	520650	205522	70.45	70.59	70.98	71.10	71.31	71.48	71.68	71.60	71.95	3
UC9733_205	520638	205547	70.39	70.53	70.96	71.08	71.29	71.47	71.67	71.58	71.94	3
UC9733_099	520590	205642	70.25	70.38	70.77	70.90	71.13	71.33	71.56	71.47	71.85	3
UC9733_007u	520554	205714	70.17	70.29	70.67	70.80	71.03	71.24	71.50	71.40	71.82	3
UC9733_007d	520562	205698	70.11	70.25	70.62	70.75	70.98	71.20	71.48	71.37	71.80	3
UC9733_000u	520547	205727	70.10	70.23	70.55	70.66	70.83	71.00	71.22	71.13	71.54	3
UC9733_000d	520536	205751	70.09	70.23	70.54	70.64	70.78	70.91	71.06	71.00	71.27	3
UC103_1646	520497	205816	69.88	70.00	70.41	70.52	70.66	70.82	70.99	70.92	71.22	3

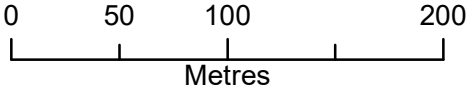
MODELLED FLOWS

Node Label	Easting	Northing	Return Period									Confidence
			2 yr	5 yr	10 yr	20yr	50yr	100yr	100yr +20%	200yr	1000yr	
UC9733_668	520924	205190	4.58	6.07	14.79	18.67	26.65	34.52	43.67	39.90	55.94	3
UC9733_607	520892	205243	4.58	6.07	14.79	18.67	26.64	34.51	43.65	39.88	55.89	3
UC9733_507	520832	205323	4.58	6.07	14.79	18.66	26.63	34.50	43.62	39.85	55.83	3
UC9733_414	520764	205385	4.57	6.07	14.77	18.65	26.62	34.49	43.58	39.83	55.77	3
UC9733_317	520693	205451	4.57	6.06	14.77	18.64	26.61	34.48	43.54	39.80	55.70	3
UC9733_238u	520657	205512	4.57	6.06	14.76	18.64	26.61	34.47	43.52	39.78	55.65	3
UC9733_238d	520650	205522	4.57	6.06	14.76	18.64	26.61	34.47	43.52	39.78	55.65	3
UC9733_205	520638	205547	4.57	6.06	14.76	18.63	26.60	34.47	43.51	39.77	55.64	3
UC9733_099	520590	205642	4.57	6.06	14.75	18.63	26.60	34.45	43.48	39.75	55.60	3
UC9733_007u	520554	205714	4.57	6.06	14.75	18.63	26.59	34.44	43.46	39.74	55.56	3
UC9733_007d	520562	205698	4.57	6.06	14.75	18.63	26.59	34.44	43.46	39.74	55.56	3
UC9733_000u	520547	205727	4.57	6.06	14.75	18.63	26.59	34.44	43.46	39.73	55.56	3
UC9733_000d	520536	205751	4.57	6.06	14.75	18.63	26.59	34.44	43.46	39.73	55.56	3
UC103_1646	520497	205816	4.57	6.06	14.75	18.63	26.59	34.43	43.43	39.71	55.52	3

Detailed FRA centred on: Land at Tollgate Road - 10/03/2022 - HNL 253613NR



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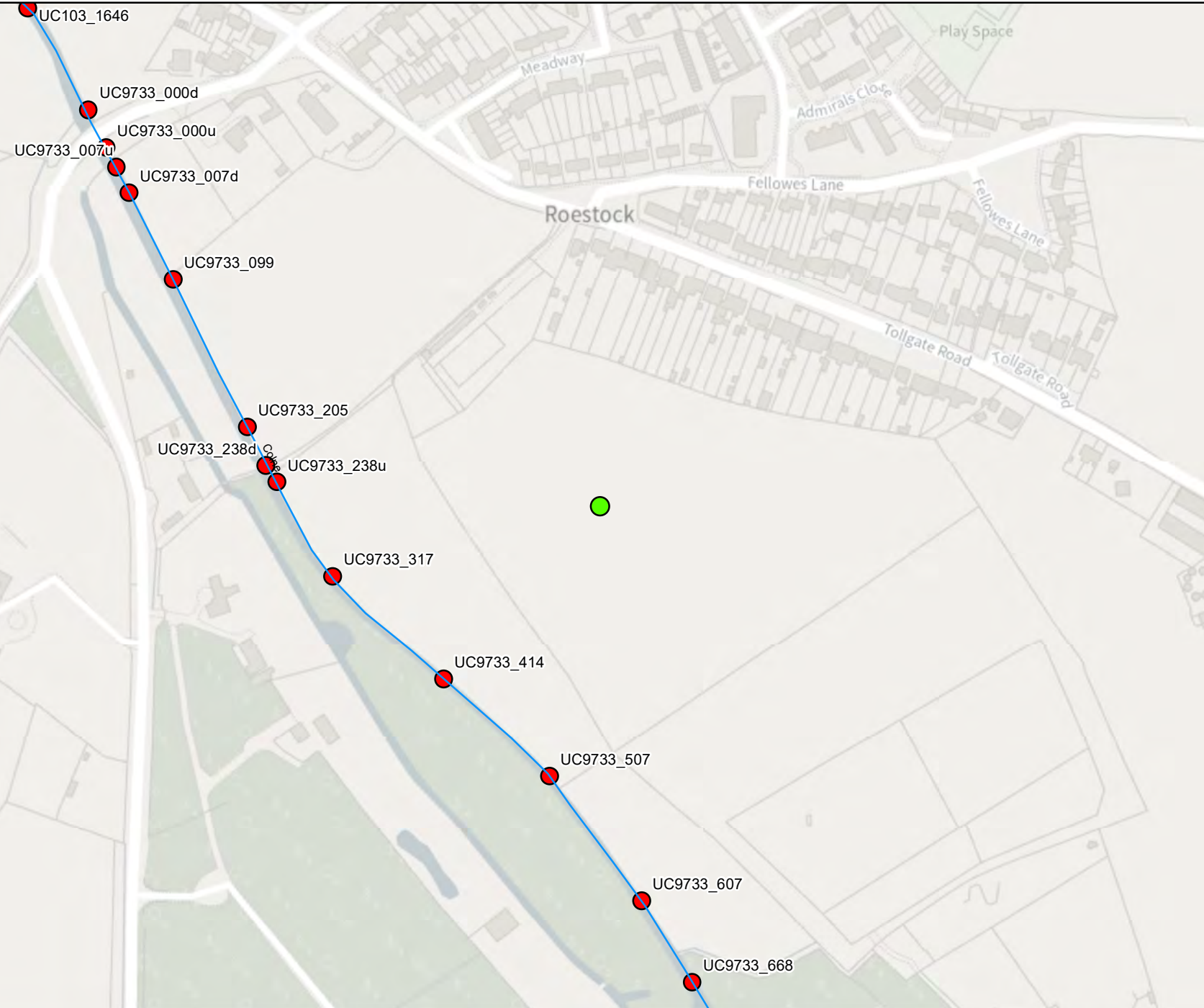
Legend

- Main Rivers
- Site location
- 1D Node Results**
- Node Results

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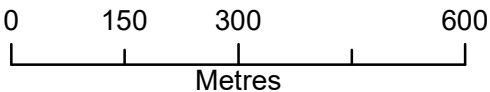


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Historic Flood Map centred on: Land at Tollgate Road - 10/03/2022 - HNL 253613NR



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Legend

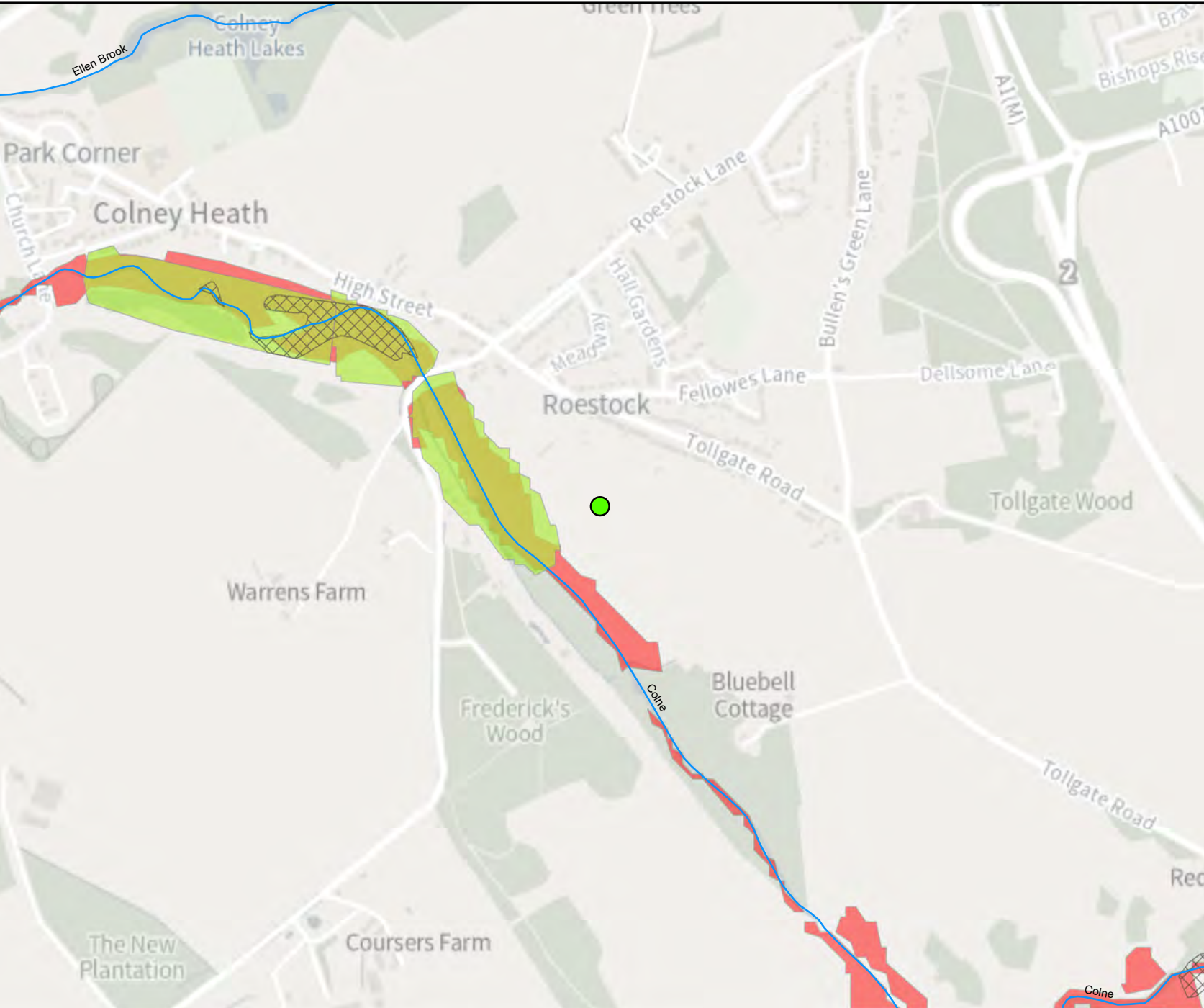
- Main Rivers
- Site location

Flood Event Outlines

- 1993
- 1992
- 1987

The historic flood event outlines are based on a combination of anecdotal evidence, Environment Agency staff observations and survey. Our historic flood event outlines do not provide a definitive record of flooding. It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

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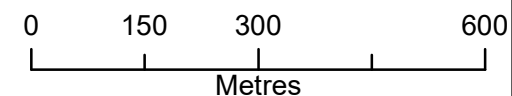


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Legend

-  Main Rivers
-  Site location

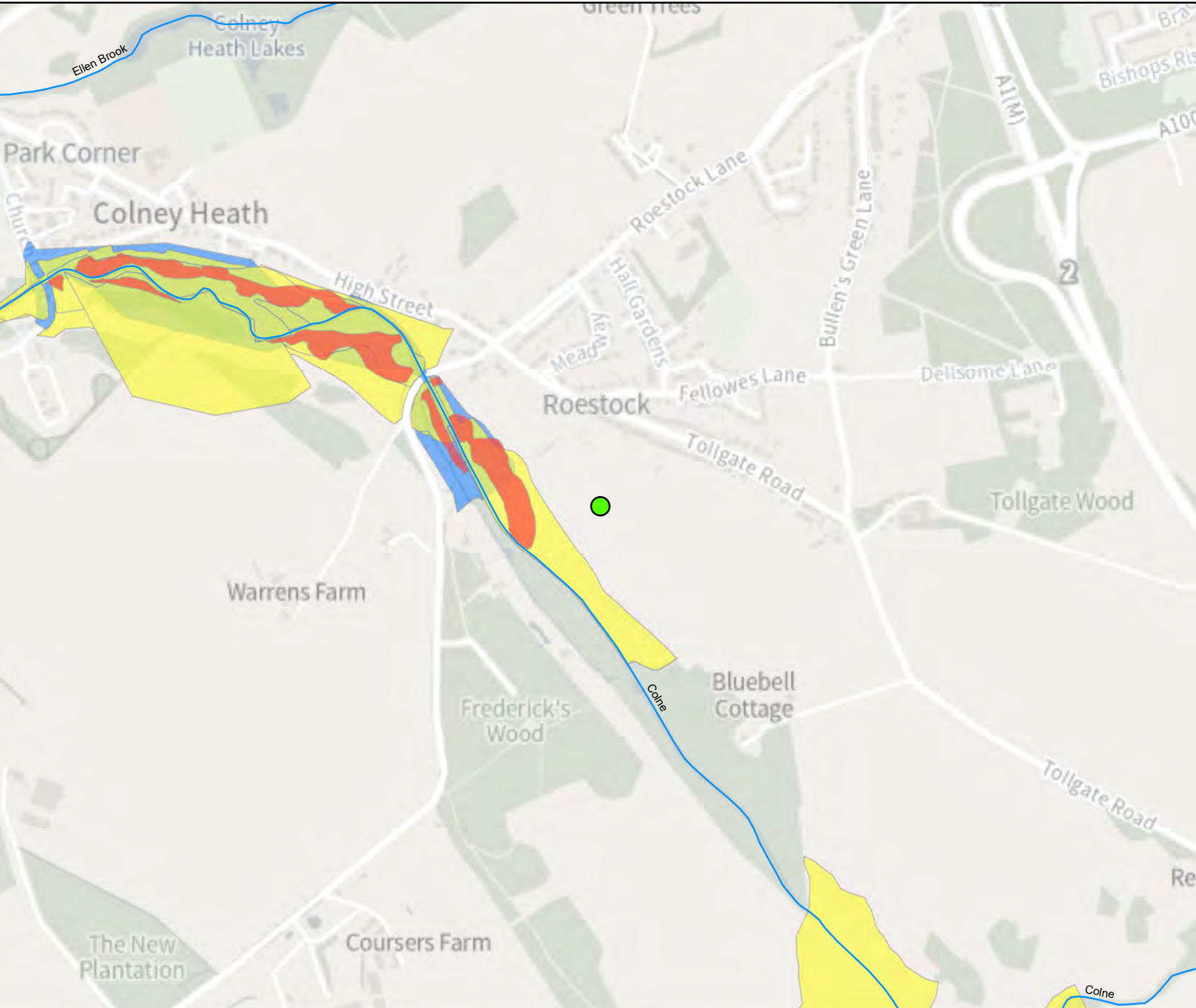
Flood Event Outlines

-  2011
-  2009
-  2000

The historic flood event outlines are based on a combination of anecdotal evidence, Environment Agency staff observations and survey.

Our historic flood event outlines do not provide a definitive record of flooding. It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors occur in the digitisation of historic records of flooding.

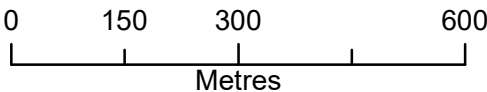
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Historic Flood Map centred on: Land at Tollgate Road - 10/03/2022 - HNL 253613NR



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Legend

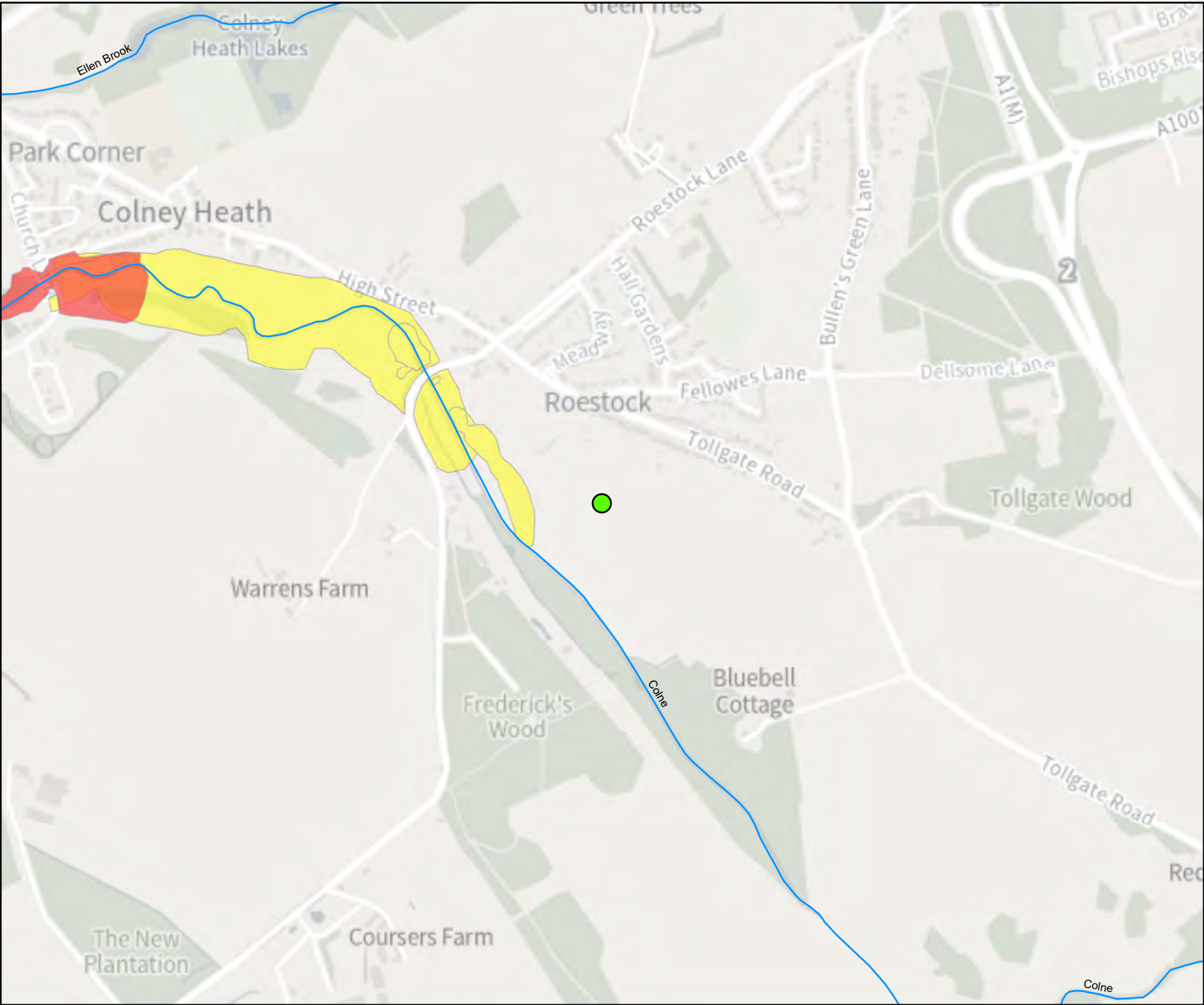
- Main Rivers
- Site location

Flood Event Outlines

- 2014
- 2012

The historic flood event outlines are based on a combination of anecdotal evidence, Environment Agency staff observations and survey. Our historic flood event outlines do not provide a definitive record of flooding. It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

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