

Product 4 (Detailed Flood Risk) for Wind In The Willows, Hurst, RG10 0RJ

Our Ref: THM356623

Product 4 is designed for developers where Flood Risk Standing Advice FRA (Flood Risk Assessment) Guidance Note 3 Applies. This is:

- i) "all applications in Flood Zone 3, other than non-domestic extensions less than 250 sq metres; and all domestic extensions", and
- ii) "all applications with a site area greater than 1 ha" in Flood Zone 2.

Product 4 includes the following information:

Ordnance Survey 1:25k colour raster base mapping;
Flood Zone 2 and Flood Zone 3;
Relevant model node locations and unique identifiers (for cross referencing to the water levels, depths and flows table);
Model extents showing *defended* scenarios;
FRA site boundary (where a suitable GIS layer is supplied);
Flood defence locations (where available/relevant) and unique identifiers; (supplied separately)
Flood Map flood storage areas (where available/relevant);
Historic flood events outlines (where available/relevant, not the Historic Flood Map) and unique identifiers;

Statutory (Sealed) Main River (where available within map extents);

A table showing:

- i) Model node X/Y coordinate locations, unique identifiers, and levels and flows for *defended* scenarios.
- ii) Flood defence locations unique identifiers and attributes; (supplied separately)
- iii) Historic flood events outlines unique identifiers and attributes; and
- iv) Local flood history data (where available/relevant).

Please note:

If you will be carrying out computer modelling as part of your Flood Risk Assessment, please request our guidance which sets out the requirements and best practice for computer river modelling.

This information is based on that currently available as of the date of this letter. You may feel it is appropriate to contact our office at regular intervals, to check whether any amendments/ improvements have been made. Should you re-contact us after a period of time, please quote the above reference in order to help us deal with your query.

This information is provided subject to the enclosed notice which you should read.

This letter is not a Flood Risk Assessment. The information supplied can be used to form part of your Flood Risk Assessment. Further advice and guidance regarding Flood Risk Assessments can be found on our website at:

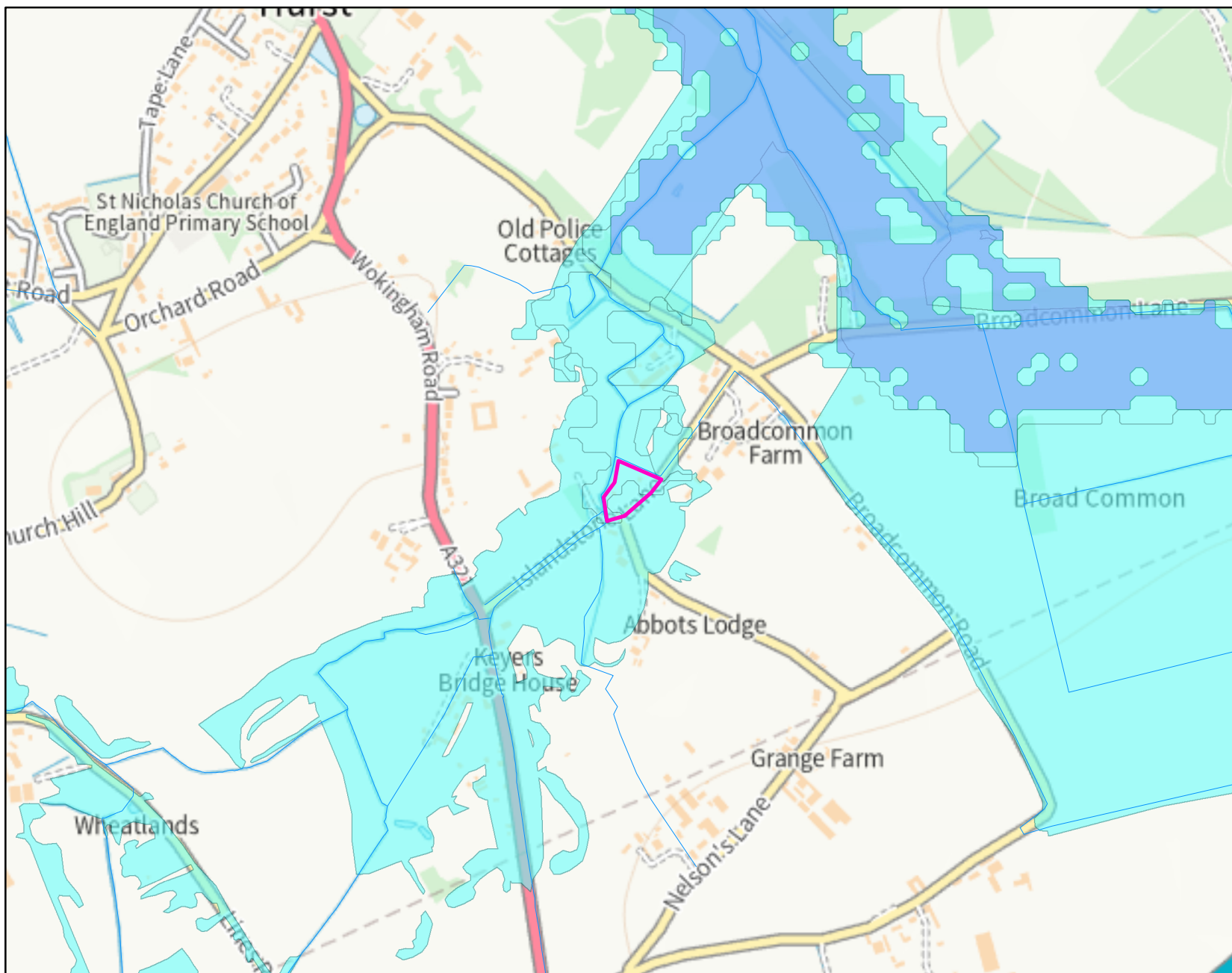
<https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>

If you would like advice from us regarding your development proposals you can complete our pre application enquiry form which can be found at:

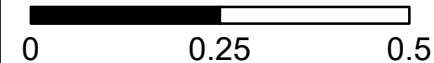
<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Flood Map for Planning centred on Wind In The Willows, Hurst, RG10 0RJ

Created on 30/04/24 REF: THM356623



Kilometres



Legend

- Site Boundary
- Statutory Main Rivers
- Flood Map - Flood defences
- Flood Map - Flood Storage Areas
- Flooding from rivers or sea (FZ3)
- Extent of extreme flood (FZ2)

Flooding from rivers or sea without 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.

The Extent of an extreme flood (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.

Defence information

Defence Location: No defences on Main River

Description: This location is not currently protected by any formal defences and we do not currently have any flood alleviation works planned for the area. However we continue to maintain certain watercourses and the schedule of these can be found on our internet pages.

Model information

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Model: **Loddon (Lower) 2009**

Description: The information provided is taken from the Lower Loddon Detailed Flood Risk Mapping study which was completed in January 2009. This model is a 1D-2D model using ESTRY-TUFLOW. The model was originally built in 2007 but the hydrology was updated and model rerun in 2009. The model was re-run for more return periods on the main Loddon than on some of the tributaries.

River Channel Model: ESTRY 1D model of Lower Loddon, Old Loddon, St. Patricks Stream, River Thames (from Sonning to Marsh Lock), Twyford Brook, Billingbear Brook and Emm Brook (from Toutley Bridge to Loddon), Barkham Brook, Ashridge Stream, Waterloo Road Stream and Upper Emm Brook (from Nine Mile Ride to Toutley Bridge)

Model design runs (Main River Loddon):

1 in 5 / 20% Annual Exceedance Probability (AEP); 1 in 20 / 5% AEP; 1 in 50 / 2% AEP; 1 in 100 / 1% AEP; 1 in 1000 / 0.1% AEP; and 1 in 100+20% / 1% AEP plus 20% increase in flows

Mapped outputs (main River Loddon):

1 in 5 / 20% AEP; 1 in 20 / 5% AEP; 1 in 50 / 2% AEP; 1 in 100 / 1% AEP, 1 in 100+20% / 1% AEP plus 20% increase in flows, and 1 in 1000 / 0.1% AEP

Model design runs (tributaries – Emm Brook (Wokingham), Emm Brook (Upstream), Ashridge Stream, Waterloo Road Stream, Barkham Brook):

1 in 5 / 20% Annual Exceedance Probability (AEP); 1 in 20 / 5% AEP; 1 in 100 / 1% AEP; and 1 in 100+20% / 1% AEP plus 20% increase in flows

Mapped outputs (tributaries):

1 in 5 / 20% AEP; 1 in 20 / 5% AEP, 1 in 100 / 1% AEP and 1 in 100+20% / 1% AEP plus 20% increase in flows

Model accuracy:

Levels $\pm$ 250mm

Modelled in-channel flood flows and levels

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The modelled flood levels and flows for the closest most appropriate model node points for your site that are within the river channel are provided below:

Node label	Model	Easting	Northing	Flood Levels (mAOD)				
				20% AEP	5% AEP	1% AEP	1% AEP (+20% increase in flows)	0.1% AEP
06324LO_MN_Billing_22.1	Loddon (Lower) 2009	481414	173288	38.16	38.27	38.33	38.35	38.42
06324LO_MN_Billing_21.1	Loddon (Lower) 2009	481270	173277	37.92	38.02	38.04	38.05	38.10
06324LO_MN_Billing_20.1	Loddon (Lower) 2009	481056	173261	37.53	37.54	37.59	37.61	37.68
06324LO_MN_Billing_19.1	Loddon (Lower) 2009	480915	173262	37.50	37.51	37.55	37.57	37.64
06324LO_MN_Billing_18.1	Loddon (Lower) 2009	480857	173311	37.13	37.14	37.27	37.29	37.35
06324LO_MN_Billing_17.1	Loddon (Lower) 2009	480793	173465	36.74	36.83	36.93	36.98	37.12
06324LO_MN_Billing_16.1	Loddon (Lower) 2009	480667	173701	36.67	36.79	36.90	36.96	37.09

Node label	Model	Easting	Northing	Flood Flows (m3/s)				
				20% AEP	5% AEP	1% AEP	1% AEP (+20% increase in flows)	0.1% AEP
06324LO_MN_Billing_22.1	Loddon (Lower) 2009	481414	173288					
06324LO_MN_Billing_21.1	Loddon (Lower) 2009	481270	173277					
06324LO_MN_Billing_20.1	Loddon (Lower) 2009	481056	173261					
06324LO_MN_Billing_19.1	Loddon (Lower) 2009	480915	173262					
06324LO_MN_Billing_18.1	Loddon (Lower) 2009	480857	173311					
06324LO_MN_Billing_17.1	Loddon (Lower) 2009	480793	173465					
06324LO_MN_Billing_16.1	Loddon (Lower) 2009	480667	173701					

Note:

Due to changes in guidance on the allowances for climate change, the percentage increase in river flows above should no longer to be used for development design purposes. The data included in this Product can be used for interpolation of levels as part of an intermediate level assessment.

For further advice on the new allowances please visit

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

Modelled floodplain flood levels

The modelled flood levels for the closest most appropriate model grid cells for your site are provided below:

2D grid cell reference	Model	Easting	Northing	flood levels (mAOD)				
				20% AEP	5% AEP	1% AEP	1% AEP (+20% increase in flows)	0.1% AEP
Flood Point 1	Loddon (Lower) 2009	480434	173002	No Data	No Data	No Data	No Data	37.02
Flood Point 2	Loddon (Lower) 2009	480517	173073	No Data	No Data	No Data	No Data	37.02
Flood Point 3	Loddon (Lower) 2009	480367	172948	No Data	No Data	No Data	No Data	37.02
Flood Point 4	Loddon (Lower) 2009	480818	173256	No Data	No Data	37.47	37.49	37.57
Flood Point 5	Loddon (Lower) 2009	480446	173311	No Data	No Data	No Data	36.96	37.08

This flood model has represented the floodplain as a grid.
The flood water levels have been calculated for each grid cell.

Note:

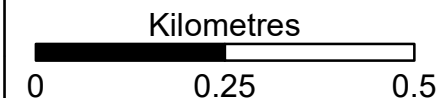
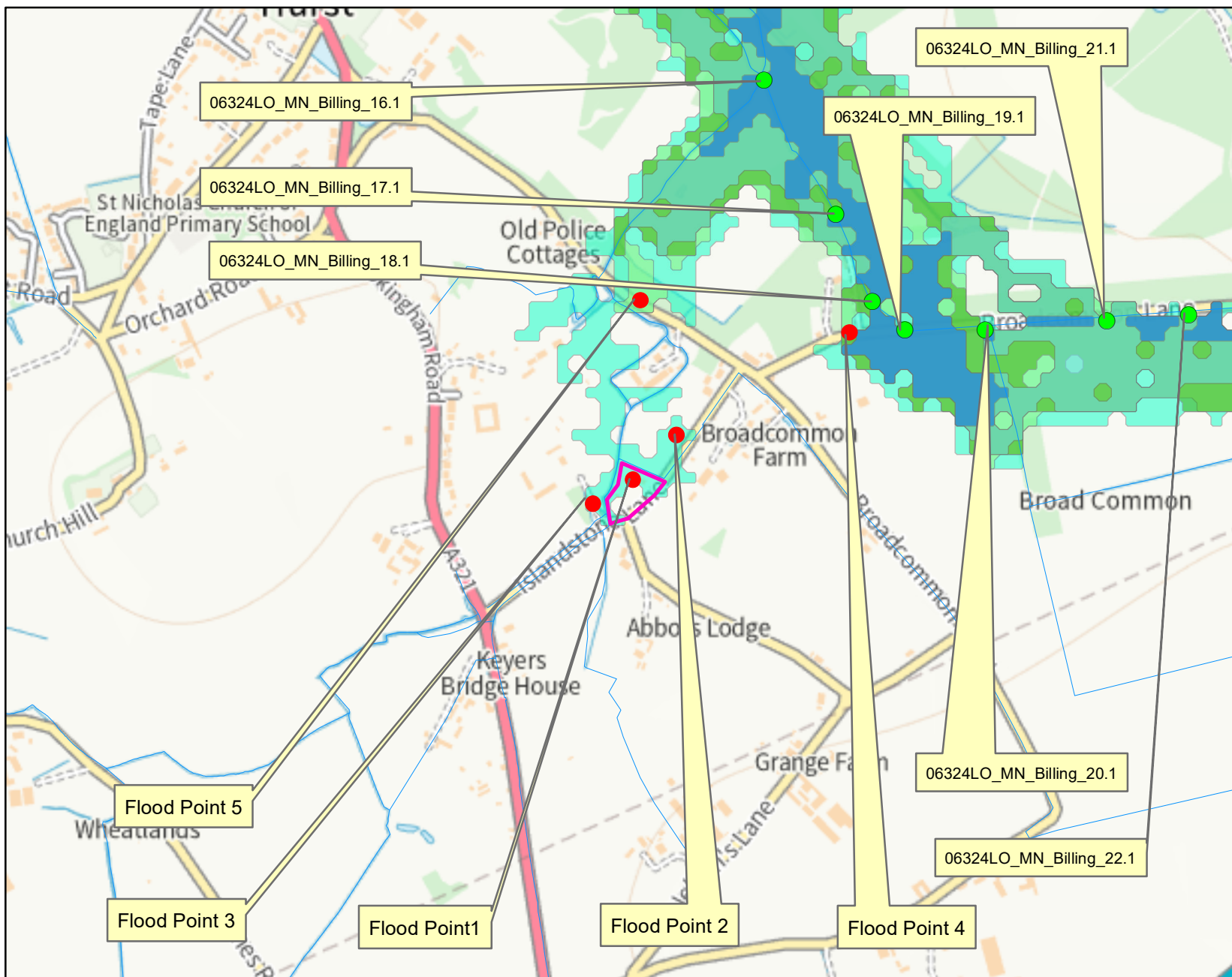
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Detailed FRA Map centred on Wind In The Willows, Hurst, RG10 0RJ

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Legend

- Site Boundary
- Model Nodes
- Statutory Main Rivers
- 20% AEP flood extent
- 5% AEP flood extent
- 1% AEP flood extent
- 1%+20% AEP flood extent
- 0.1% AEP flood extent
- Floodplain Node

Flooding from rivers or sea without 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.

The Extent of an extreme flood (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.

Historic flood data

THM356623

Our records show that the area of your site has been affected by flooding.
Information on the floods that have affected your site is provided in the table below:

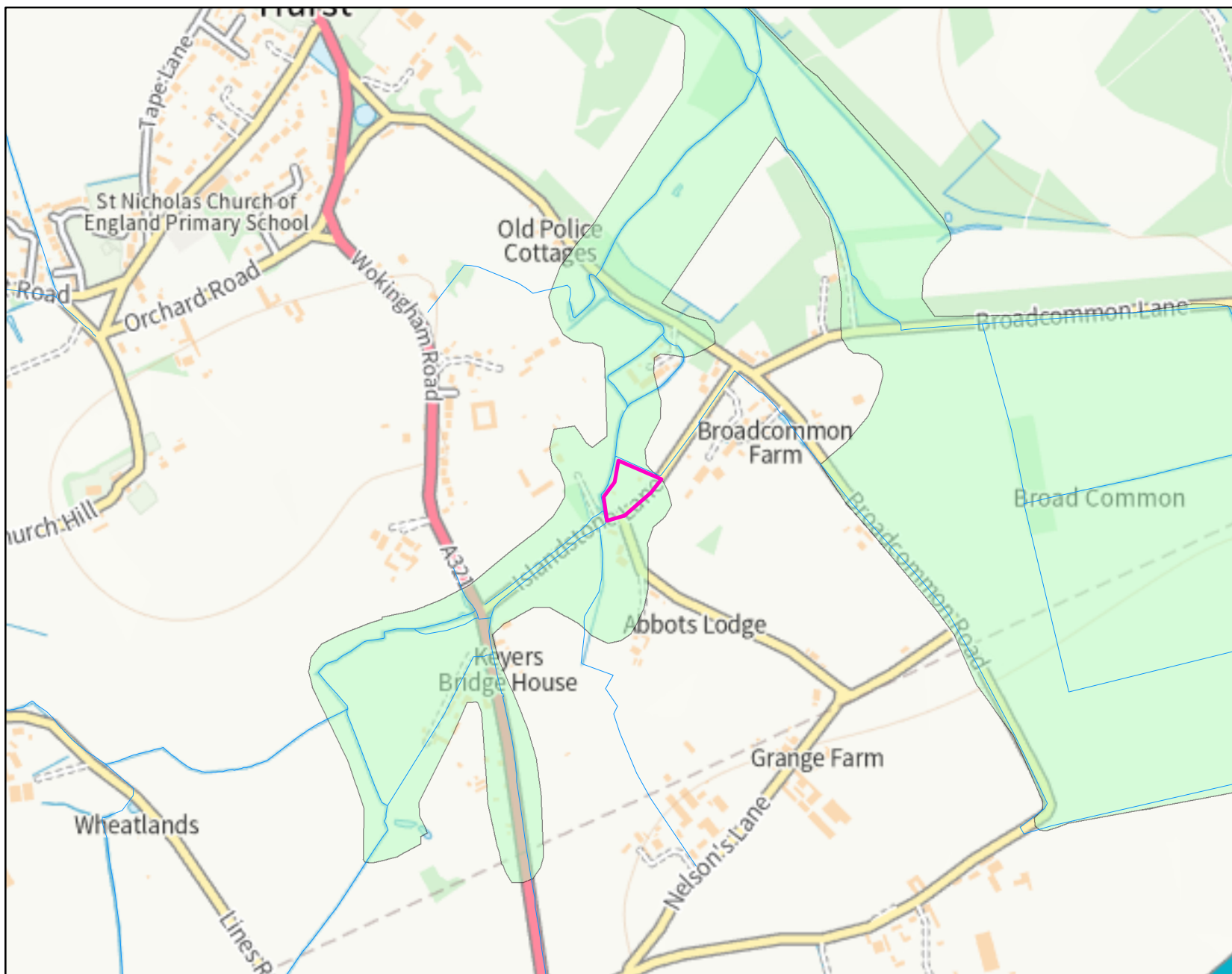
Flood Event Code	Flood Event Name	Start Date	End Date	Source of Flooding	Cause of Flooding
EA0619470300413	06MarchSpring1947	01/01/1947	12/12/1947	main river	channel capacity exceeded (no raised defences)
EA0619741100117	06NovemberAutumn1974	01/01/1974	12/12/1974	main river	channel capacity exceeded (no raised defences)
EA0619811200037	06DecemberWinter1981	01/01/1981	12/12/1981	main river	channel capacity exceeded (no raised defences)
EA0619910200003	06FebruaryWinter1991	01/01/1991	12/12/1991	main river	channel capacity exceeded (no raised defences)
EA062007030103	Thames SE area July 2007	20/07/2007	21/07/2007	main river	channel capacity exceeded (no raised defences)

Please note the Environment Agency maps flooding to land not individual properties. Floodplain extents are an indication of the geographical extent of a historic flood. They do not provide information regarding levels of individual properties, nor do they imply that a property has flooded internally.

Start and End Dates shown above may represent a wider range where the exact dates are not available.

Historic Flood Map #1 centred on Wind In The Willows, Hurst, RG10 0RJ

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Environment
Agency

Kilometres

0 0.25 0.5

Legend

-  Site Boundary
-  Statutory Main Rivers

Year

-  1947
-  1974
-  1981

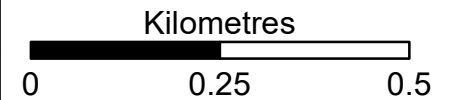
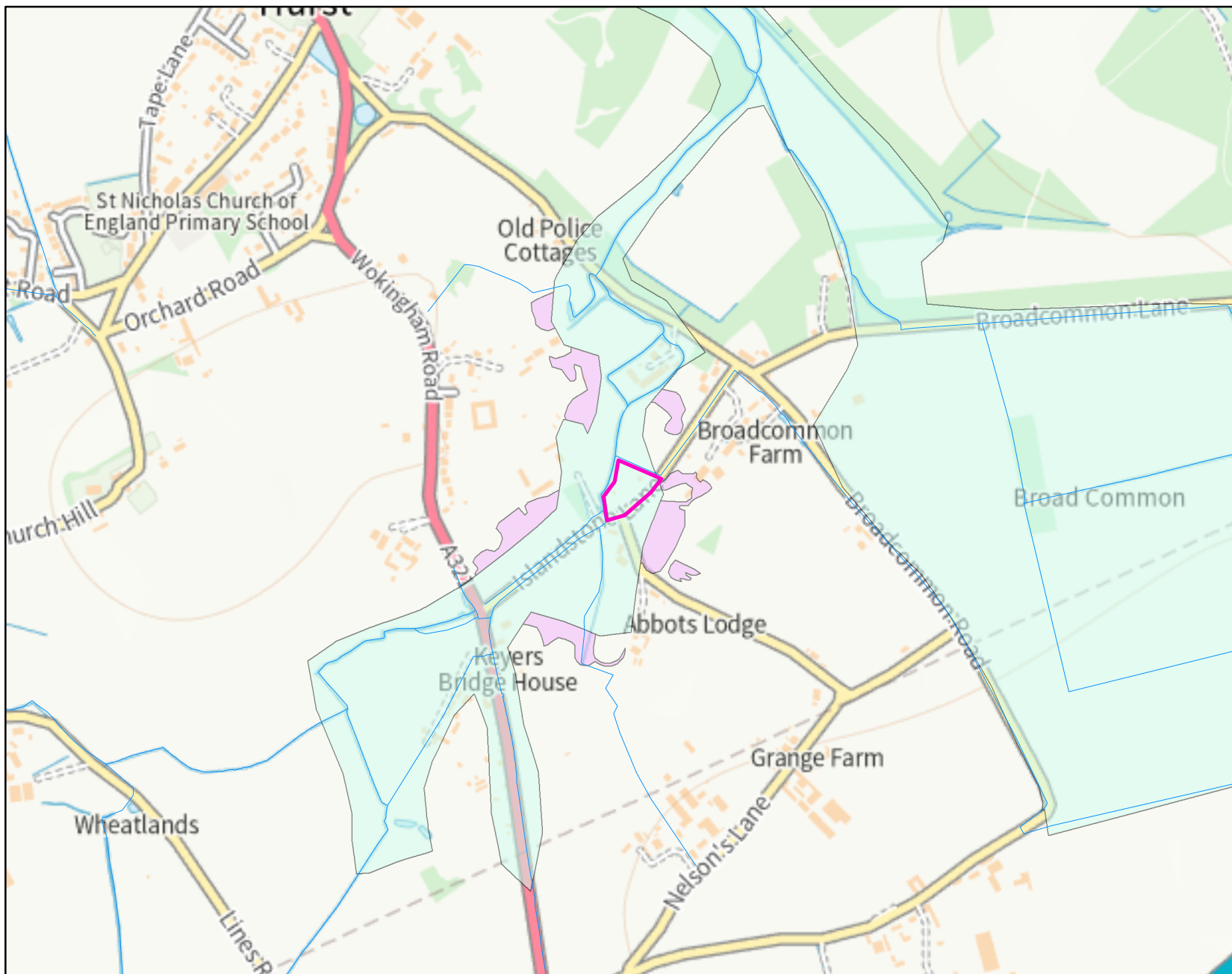
Flooding from rivers or sea without defences (Flood Zone 3) shows the area that could be affected by flooding:

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

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Historic Flood Map #2 centred on Wind In The Willows, Hurst, RG10 0RJ

Created on 30/04/24 REF: THM356623



Legend

- Site Boundary
- Statutory Main Rivers

Year

- 1991
- 2007

Flooding from rivers or sea without 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.

The Extent of an extreme flood (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.