Product 4 (Detailed Flood Risk) for Grundon Waste Management Depot, Banbury
Our Ref: OX_1034_01

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 areas benefiting from defences (where available/relevant);
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 seperately)
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 read the enclosed guidance which sets out our 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

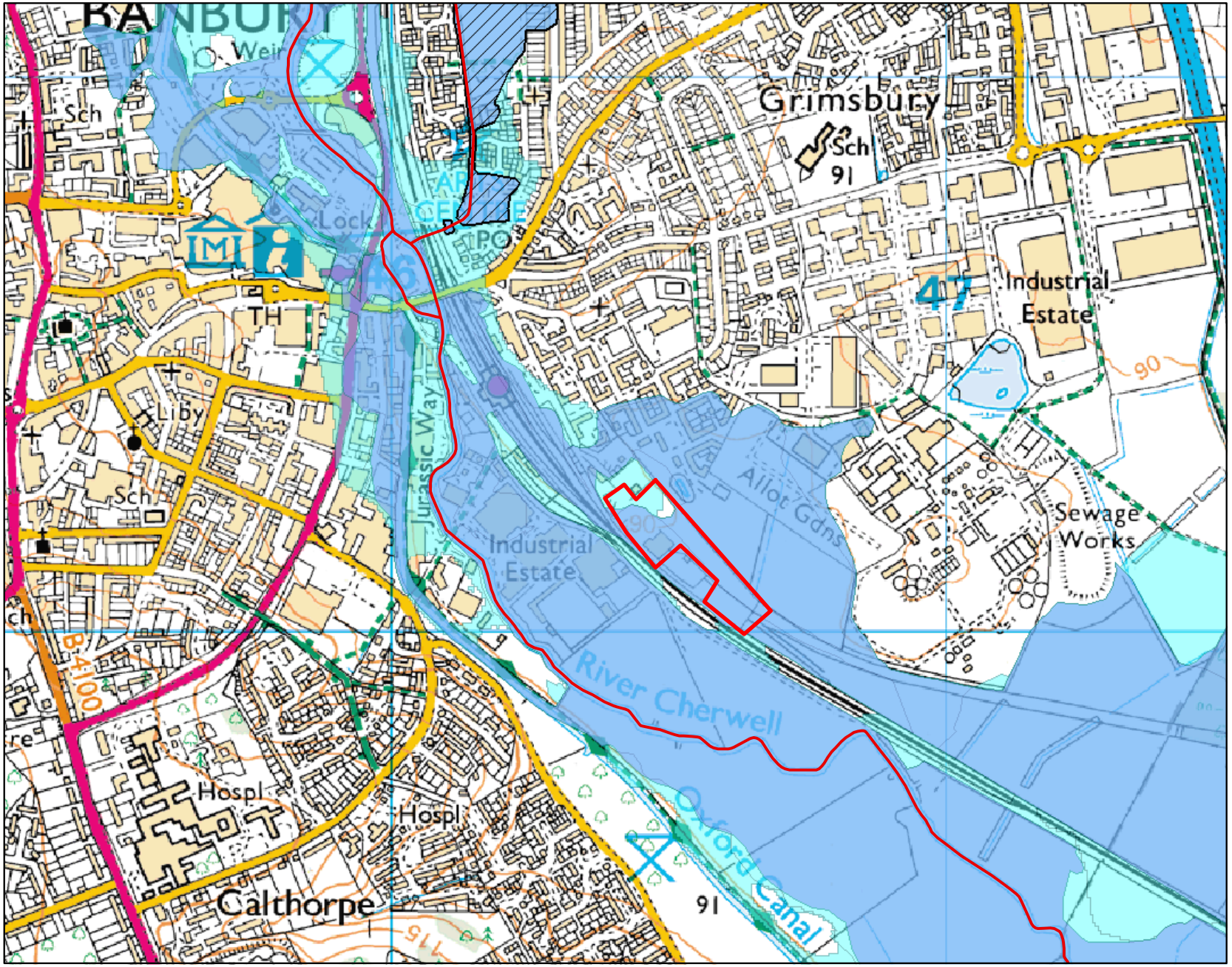
http://www.environment-agency.gov.uk/research/planning/82584.aspx

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

http://www.environment-agency.gov.uk/research/planning/33580.aspx

Red Kite House, Howbery Park, Wallingford, Oxon OX10 8BD
Customer services line: 08708 506 506
Email: WTenquiries@environment-agency.gov.uk

Flood Map centred on Grundon Waste Management Depot, Banbury
Created on 05/02/2015 REF: OX_1034_01



Environment Agency

Kilometres

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N W E S

Legend

- Main River
- Flood defences
- Areas benefiting from flood defences
- Flooding from rivers or sea (FZ3)
- Extent of extreme flood (FZ2)
- Flood Map - flood storage areas

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.

Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Defence information

OX_1034_01

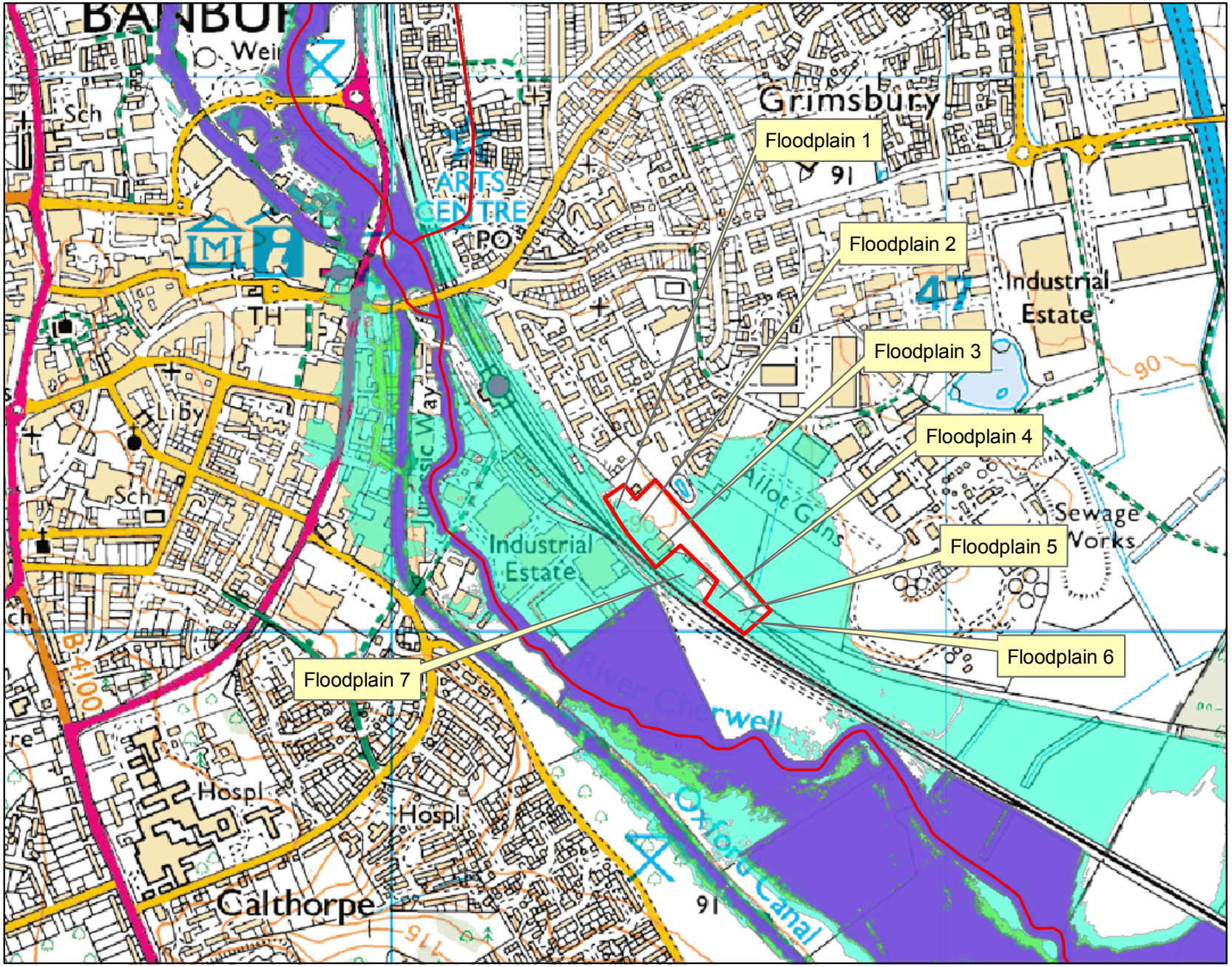
Defence Location:	Banbury FAS
Description:	This location is offered protection from the Banbury Flood Alleviation Scheme. This consists of a large flood storage area to the north west of the town, as well as various bunds and walls throughout the town. These are maintained by the Environment Agency and some private owners. The site will be offered up to 1 in 200 year protection (0.5% chance of occurring annually). There are no other planned defences in this area.

Model information

OX_1034_01

Model:	Cherwell (Banbury) 2011
Description:	The information provided is taken from the River Cherwell modelling study completed in March 2011 for the Banbury Flood Alleviation Scheme. The study was carried out using ISIS-TUFLOW software. The 1 in 200 / 0.5% AEP outputs can be considered as representative of climate change in Banbury. Please note the model is not fit for purpose below the Football Ground (446333, 240024) Model design runs: Undefended: 1 in 20 / 5% AEP; 1 in 100 / 1% AEP; 1 in 200 / 0.5% AEP (used for climate change) and 1 in 1000 / 0.1% AEP Defended: 1 in 20 / 5% AEP; 1 in 100 / 1% AEP; 1 in 200 / 0.5% AEP (used for climate change) and 1 in 1000 / 0.1% AEP Mapped Outputs: 1 in 20 / 5% AEP; 1 in 100 / 1% AEP; 1 in 200 / 0.5% AEP (used for climate change) and 1 in 1000 / 0.1% AEP Model accuracy: Levels ± 250mm

Defended Model Flood Map centred on Grundon Waste Management Depot, Banbury
Created on 09/02/2015 REF: OX_1034_01



Environment Agency

Kilometres

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N W E S

Legend

- Main River
- 5% AEP Modelled Extent
- 1% AEP Modelled Extent
- 0.5% AEP Modelled Extent
- 0.1% AEP Modelled Extent

AEP = Annual Exceedance Probability
The probability of a flood of a particular magnitude, or greater, occuring in any given year

1%CC = 1% Climate Change extent
This is the 1% AEP event with an allowance for climate change (+20% on river flows)

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Modelled floodplain flood levels

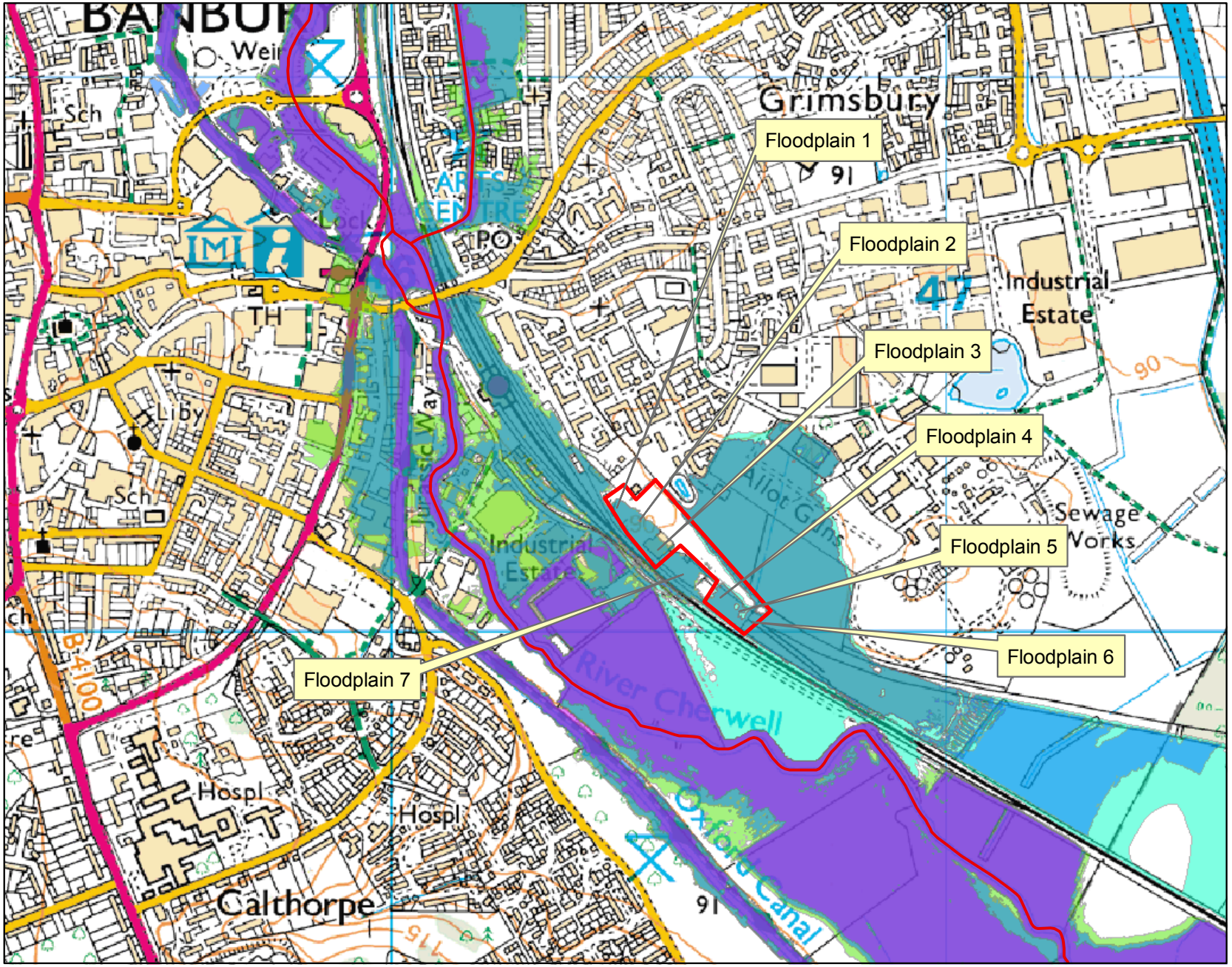
OX_1034_01

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

				Defended flood levels (mAOD)					
2D grid cell reference	Model	Easting	Northing	20% AEP	5% AEP	1% AEP	1% AEP with climate change allowance (+20% on river flows)	0.5% AEP	0.1% AEP
Floodplain 1	Cherwell (Banbury) 2011	446,409	240,221	x	x	x	x	x	90.53
Floodplain 2	Cherwell (Banbury) 2011	446,451	240,200	x	x	x	x	x	90.52
Floodplain 3	Cherwell (Banbury) 2011	446,482	240,143	x	x	x	x	x	90.5
Floodplain 4	Cherwell (Banbury) 2011	446,595	240,058	x	x	x	x	x	90.15
Floodplain 5	Cherwell (Banbury) 2011	446,630	240,035	x	x	x	x	x	90.14
Floodplain 6	Cherwell (Banbury) 2011	446,654	240,016	x	x	x	x	x	90.13
Floodplain 7	Cherwell (Banbury) 2011	446,529	240,101	x	x	x	x	x	90.46

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

Undefended Model Flood Map centred on Grundon Waste Management Depot, Banbury
Created on 09/02/2015 REF: OX_1034_01



Environment Agency

Kilometres

0 0.15 0.3

N W E S

Legend

- Main River
- 5% AEP Modelled Extent
- 1% AEP Modelled Extent
- 0.5% AEP Modelled Extent
- 0.1% AEP Modelled Extent

AEP = Annual Exceedance Probability
The probability of a flood of a particular magnitude, or greater, occuring in any given year

1%CC = 1% Climate Change extent
This is the 1% AEP event with an allowance for climate change (+20% on river flows)

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Modelled floodplain flood levels

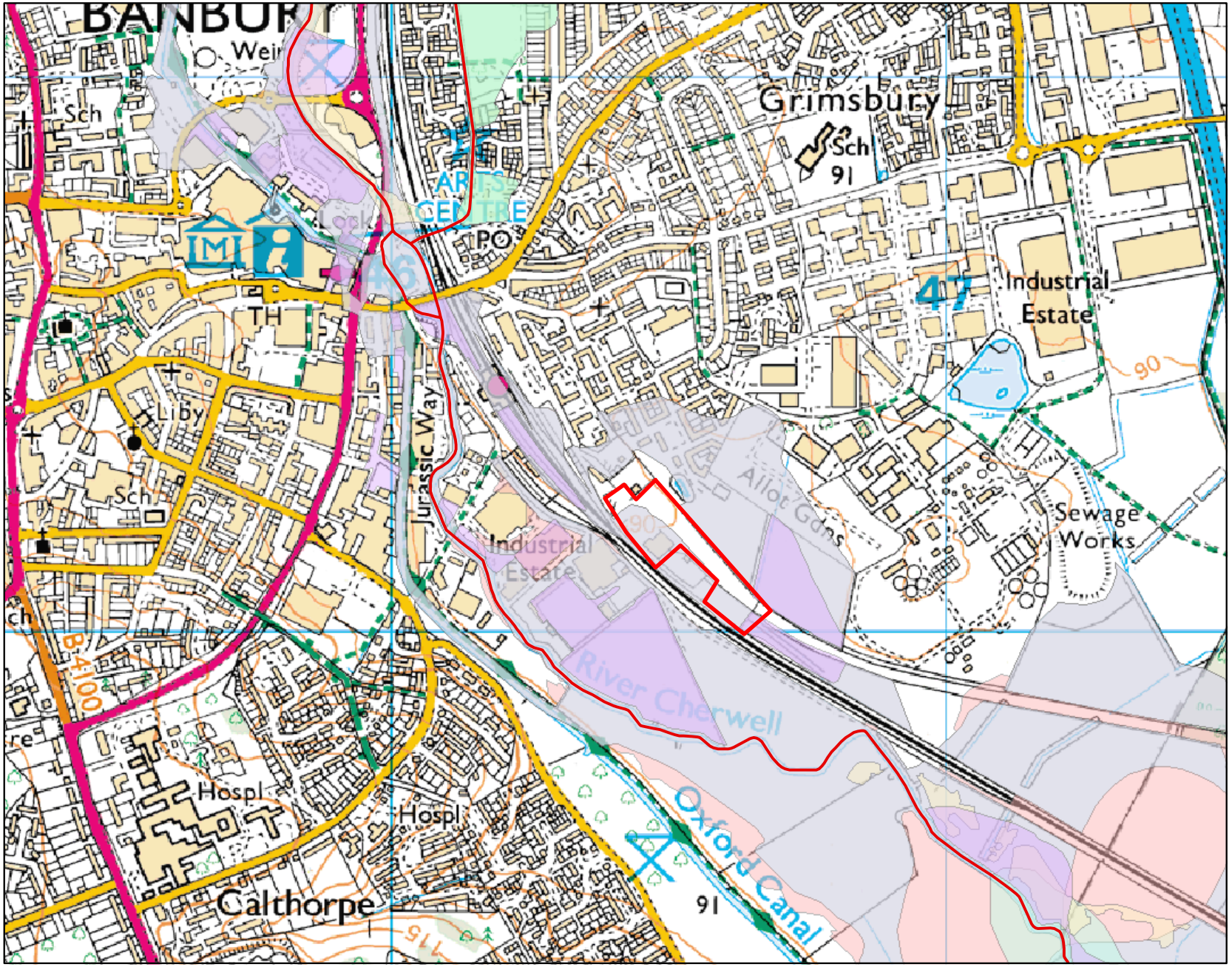
OX_1034_01

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

				Undefended flood levels (mAOD)					
2D grid cell reference	Model	Easting	Northing	20% AEP	5% AEP	1% AEP	1% AEP with climate change allowance (+20% on river flows)	0.5% AEP	0.1% AEP
Floodplain 1	Cherwell (Banbury) 2011	446,410	240,221	x	x	90.45	x	90.53	90.56
Floodplain 2	Cherwell (Banbury) 2011	446,452	240,202	x	x	90.45	x	90.53	90.55
Floodplain 3	Cherwell (Banbury) 2011	446,482	240,143	x	x	90.42	x	90.48	90.52
Floodplain 4	Cherwell (Banbury) 2011	446,595	240,059	x	x	89.86	x	89.88	90.04
Floodplain 5	Cherwell (Banbury) 2011	446,629	240,035	x	x	x	x	x	90.03
Floodplain 6	Cherwell (Banbury) 2011	446,654	240,015	x	x	89.86	x	89.83	89.99
Floodplain 7	Cherwell (Banbury) 2011	446,531	240,101	x		90.36	x	90.42	90.48

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

Historic Flood Map centred on Grundon Waste Management Depot, Banbury
Created on 05/02/2015 REF: OX_1034_01



Environment Agency

Kilometres

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N W E S

Legend

Main River

Flood Event Outline selection

Year

- 1947
- 1979
- 1992
- 1993
- 1998
- 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.

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Historic flood data

OX_1034_01

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
EA0619470300444	06MarchSpring1947	01/01/1947	12/12/1947	main river	channel capacity exceeded (no raised defences)
EA0619790200111	06FebruaryWinter1979	01/01/1979	12/12/1979	main river	channel capacity exceeded (no raised defences)
EA0619920900152	06SeptemberAutumn1992	01/01/1992	12/12/1992	main river	channel capacity exceeded (no raised defences)
EA0619931000229	06OctoberAutumn1993	01/01/1993	12/12/1993	main river	channel capacity exceeded (no raised defences)
EA0619980400072	06AprilEaster1998	01/04/1998	30/04/1998	main river	channel capacity exceeded (no raised defences)
ea061142606	Banbury CP_Fluvial Water	19/07/2007	29/07/2007	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.