

Land Adjacent 20 Deepdale Drive NG34 8LR

Reference: 206- FRA- 002

Mar-21

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Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed by the owner of the land adjacent to 20 Deepdale Dr to undertake a Level 1 Screening Flood Risk Assessment for a development located at NG34 8LR.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
 - * Whether the proposed development is likely to be affected by current or future flooding.
 - * Whether the proposed development will increase flood risk elsewhere.
 - * Whether the flood risks associated with the proposed development can be satisfactorily managed.
 - * Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

- 1.3 To achieve these objectives the following documents have been consulted and/or referenced:

The National Planning Policy Framework (NPPF)

CIRIA C753 document The SuDS Manual, 2015

Local Flood Risk Management Strategy (LFRMS)

Level 1 Strategic Flood Risk Assessment (SFRA)

Aerial photographs and topographical survey of the site

British Geological Society Records

Environment Agency flood maps

The CIRIA publication 'C635 Designing for exceedance in urban drainage— Good practice'



Development Site and Location

- 2.1 The site is located at Deepdale Dr, Sleaford. The nearest post code is NG34 8LR. Refer to appendix A for site location plan.
- 2.2 The current use of the site is a greenfield. The current use vulnerability classification of the site is Water compatible. The site is located in the River Flood Zone 2. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the construction of a new bungalow. Refer to Appendix B for layout of the proposed development.
- 2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

- Surface Water 2.5 The tributary of River Slea is approximately 12 m away from the development.
- Aquifer 2.6 The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers.
- Source Protection Zone 2.7 The site is located within a source protection zone 3. This zone is defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source.
- Ground Water Levels 2.8 The ground water levels for this site are unknown. However it is likely that the water table is low.

Site Geology

- Bedrock 2.9 The British Geological Society records of the site show that it is located within the Blisworth clay.
- Superficial Deposits 2.10 The British Geological Society records show that the superficial deposits are Clay, silt, sand and gravel.
- Contaminated Land 2.11 The contaminated land register has not been consulted. The owner suggested that the site is not contaminated



National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective to contribute to the achievement of sustainable development. As part of it, they ensure that flood risk and sustainability are taken into account during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining the suitability of land for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the layout of the development and the application of Sustainable Drainage Systems (SuDS). Adoption of these principles at early stages of the project can ensure that the developments take into account appropriate mitigation which is included within the detailed design of the schemes.

The Flood and Water Management Act (2010)

- 3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides a robust management of flood risk for people, homes and businesses and also encourages the use of SuDS for developments. A robust SuDS strategy should take into account the recommendations given in this Flood Risk Assessment. The drainage strategy should incorporate SuDS within the design and also attenuate all flows to either the greenfield or brownfield run off and take into account the risk from other sources as necessary.

Level 1 Strategic Flood Risk Assessment (SFRA)

- 3.3 The SFRA Level 1 identifies flood risk constraints in the local Area. It gives procedures that should be followed in planning to tackle flood risk during any development.
- 3.4 The North Kesteven Strategic Flood Risk Assessment 2008 was reviewed and followed as part of this report.

Level 2 Strategic Flood Risk Assessment (SFRA)

- 3.5 The SFRA Level 2 provides more information on the area identified in the SFRA Level 1, in order to show whether the Exception Test can be passed.



- 4.1 The flood risks were determined by identifying the sources of flooding and assessing their possible impact and likelihood to the development.

Fluvial Flood Risk - Assessment

- 4.2 Fluvial flood risk was assessed using the Environment Agency Flood Zone Maps and the sequential risk-based approach recommended in the NPPF. The sequential test takes into account the flood risk vulnerability of land uses in relation to the flood zone categorisation. These parameters are assessed in order to determine whether the development is appropriate. Under certain circumstances the exception test is applicable.

Sequential test

- Step 1** 4.3 The proposed development falls within The Environment Agency Flood Zone 2. The Flood Zone 2 is considered to have a medium probability of flooding with a 1000 to 100 years annual probability or 0.1-1.0%AEP.
Flood Zone categorization

- Step 2** 4.4 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable'.
Sequential test

- Step 3** 4.5 The Flood Risk vulnerability and Flood Zone Compatibility table of the NPPF Planning Practice Guide states that More vulnerable developments are appropriate in this area.
Sequential Test Results

The Exception Test

- 4.6 The exception test is not required.



4.7 The following sections of this flood risk assessment demonstrate that the proposed development can be safely established with an adequate standard of flood protection, including allowance for climate change, and that proposed surface water management provisions may make a contribution to reduction in flood risk elsewhere.

Fluvial Flood Risk - Flood Levels

4.10 The site does not benefit from flood defences. The Environment Agency records show that the area around the site has not been flooded in the past.

4.11 The 1% AEP level for this site is as per table below. This level has been taken from the Product 4 information given by the Environment

Table 1: Product 4 information

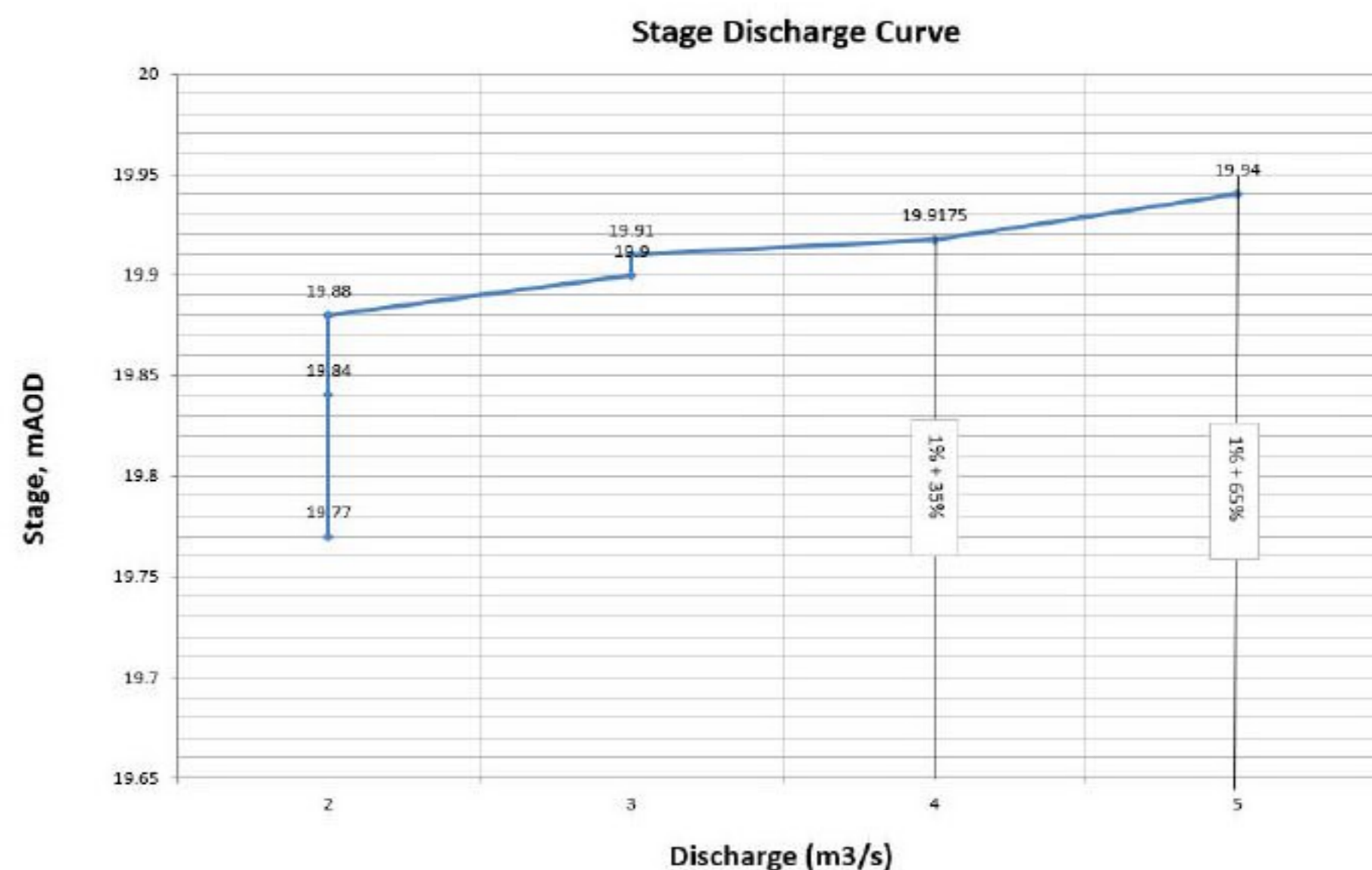
| Annual Exceedance Probability | | Levels m AOD |
|-------------------------------|---------|--------------|
| | % | |
| 1 in 100 | 1% | 19.90 |
| 1 in 100 +20%CC | 1%+20CC | 19.91 |

4.12 The climate change allowances are as per table 1: peak river flow allowances by river basin district (based on a 1961 to 1990 baseline). The site is located within the Anglian Catchment. An allowance of 35% and 65% increase in peak flows is appropriate due to the 'more vulnerable' nature of the development in relation to flood risk, the design life of the building (100 years), and the flood zone classification.

Climate Change Allowances:

100+65% - Upper End : 19.94m AOD

100+35% - Higher Central: 19.917m AOD



Fluvial Flood Risk - Resistance and Resilience Plan

- 4.13 The site levels are as per existing site layout. The levels vary from 20.43m AOD to 19.34m AOD. The FFL of the building is located more than 300mm above the 1%+35% climate change level. The minimum proposed FFL of the building is: 20.43 m AOD.
- 4.14 Foundations: Suspended concrete floor slabs at least 150mm thick is the preferred option. There should be a minimum space of 150mm ventilated void between the ground level and the bottom of the floor slab. Damp proof membranes should be included in the design. Floor insulation should be of the closed-cell type. Under floor services using ferrous materials should be avoided. Ceramic/concrete-based floor tiles, sitting on a bed of sand, cement render and water resistant grout
- 4.15 Concrete blocks used in foundations should be sealed with an impermeable material or encased in concrete to prevent water movement from the ground to the wall construction.
- 4.16 External Walls: Good quality facing bricks can be used for external face. External renders should not be used.
- 4.20 Services and fittings (communications wiring, hearing systems, electrical services, water, electricity and gas meters) should be placed at above the flood level. Where possible, all service entries should be sealed (e.g. with expanding foam or similar closed cell material). Closed cell insulation should be used for pipes which are below the predicted flood level of 20.43 m AOD.
- 4.21 Fittings should be designed to be replaced after a flood, it is advisable to specify durable fittings that are not appreciably affected by water and can be easily cleaned (e.g. use of plastic materials or stainless steel). The cost of these units may need to be balanced against the predicted frequency of flooding. Avoid wood fibre based carcasses and use easily removable solid wood doors and drawers.



Fluvial Flood Risk - Access and Evacuation

- 4.22 Safe egress is achievable by following Deepdale Drive towards Wansbeck Road, which is shown to be beyond the extent of flooding. See figure 3 below for details.
- 4.23 The site is within an Environment Agency Flood Warning Area. The occupants of the site are encouraged to sign up to the alerts and should use these to form an appropriate Flood Management and Evacuation Plan prior to occupation of the site.

Figure 3: General evacuation route



Fluvial Flood Risk - Flood Compensation

- 4.24 No flood compensation required as the area within the 1% +CC levels are not being developed.

Fluvial Flood Risk - Surface Water Management

- 4.25 The surface water run-off will be disposed using SuDS techniques. The aim is to provide a sustainable design that accommodates the proposed attenuation volume and replicated the existing drainage regime using the SuDS hierarchy is shown in the figure 4 below.
- 4.26 The SuDS techniques highlighted in red below can be used on site. This assessment is based on the ground conditions and the potential discharge points available.

Figure 4: The SuDS Hierarchy (Source:EA Thames region, SuDS a practical guide)

| <i>Most Sustainable</i> | <i>SUDS technique</i> | <i>Flood Reduction</i> | <i>Pollution Reduction</i> | <i>Landscape & Wildlife Benefit</i> |
|--------------------------|---|------------------------|----------------------------|---|
| | Living roofs | ✓ | ✓ | ✓ |
| | Basins and ponds - Constructed wetlands - Balancing ponds - Detention basins - Retention ponds | ✓ | ✓ | ✓ |
| | Filter strips and swales | ✓ | ✓ | ✓ |
| | Infiltration devices - soakaways - infiltration trenches and basins | ✓ | ✓ | ✓ |
| | Permeable surfaces and filter drains - gravelled areas - solid paving blocks - porous paviers | ✓ | ✓ | |
| <i>Least Sustainable</i> | Tanked systems - over-sized pipes/tanks - storms cells | ✓ | | |

- 4.27 These SuDS techniques should be implemented and sized during the detailed design of the project.

Fluvial Flood Risk - Working next to a main river

- 4.30 The development is more than 8 metres of the bank of a main river, or 16 metres if it is a tidal main river. A Flood risk activity Environmental Permit is not required.



Surface water (overland flows) flood risk

4.31 The basis of the surface water flood maps is defined by the Environment Agency as follows.

"The nationally produced surface water flood mapping only indicates where surface water flooding could occur as a result of local rainfall

- Ordinary watercourses
- Drainage systems or public sewers caused by catchment-wide rainfall events
- Rivers
- Groundwater.

Due to the modelling techniques used, the mapping picks out depressions in the ground surface and simulates some flow along natural drainage channels, rivers, low areas in floodplains, and flow paths between buildings. Although the maps appear to show flooding from ordinary watercourses, they should not be taken as definitive mapping of flood risk from these as the conveyance effect of ordinary watercourses or drainage channels is not explicitly modelled. Also, structures (such as bridges, culverts and weirs) and flood risk management infrastructure (such as defences) are not represented.

The nationally produced surface water flood mapping does not take account of the effect of pumping stations in catchments with pumped drainage. No allowance is made for tide locking, high tidal or fluvial levels where sewers cannot discharge in to rivers or the sea."

4.32 The Environment Agency maps show that the flood risk from surface water is low. However a residual risk of localised shallow ponding remains likely. The development has already increase the FFL by 100mm above the current ground level and accommodates areas for free flow of run off at either side of the new building.

Flooding from drainage systems in adjacent areas

4.33 There are no records of sewer flooding within the site.

4.34 The site is outside of a critical drainage area. No mitigation required.



Reservoirs Risks

- 4.35 The Reservoir Flood Map (RFM) produced by the Environment Agency do not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes and can be used to help reservoir owners produce on-site plans and the Local Resilience Forum produce off-site plans, and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be within the possible dam breach flooding path. It is recommended that the Local Resilience Forum is contacted during detailed design. See Appendix C.

Groundwater flood risk

- 4.36 There is potential for groundwater flooding above ground level within the development in the area near the river. This is because of the gravel layers that may be present on site. Groundwater levels would tend to vary seasonally and are influenced by ground and meteorological conditions and proximity to water features. The groundwater flooding risk for this site is considered to be medium. The general precautionary measures to mitigate the risk of groundwater flooding in this development are: Ground floor threshold levels are proposed to be raised a minimum of 100mm above ground level to allow for uncertainty. Provide flow paths around the proposed development which groundwater will take in the event of groundwater emergence. As these measures would mitigate the risks from groundwater flooding, it is considered that this site does pass the Sequential Test and the Exception Test does not need to be applied.



- 5.1 The change of use is compatible the flood zone location. The development fully complies with the NPP guidelines. It is considered that this site does pass the Sequential Test and the Exception Test does not need to be applied.
- 5.2 The site is within an Environment Agency Flood Warning Area. The occupants of the site are encouraged to sign up to the alerts and should use these to form an appropriate Flood Management and Evacuation Plan prior to occupation of the site.
- 5.3 This report demonstrates that the proposal will be safe, in terms of flood risk, for its design life and will not increase the flood risk elsewhere.



Appendix A

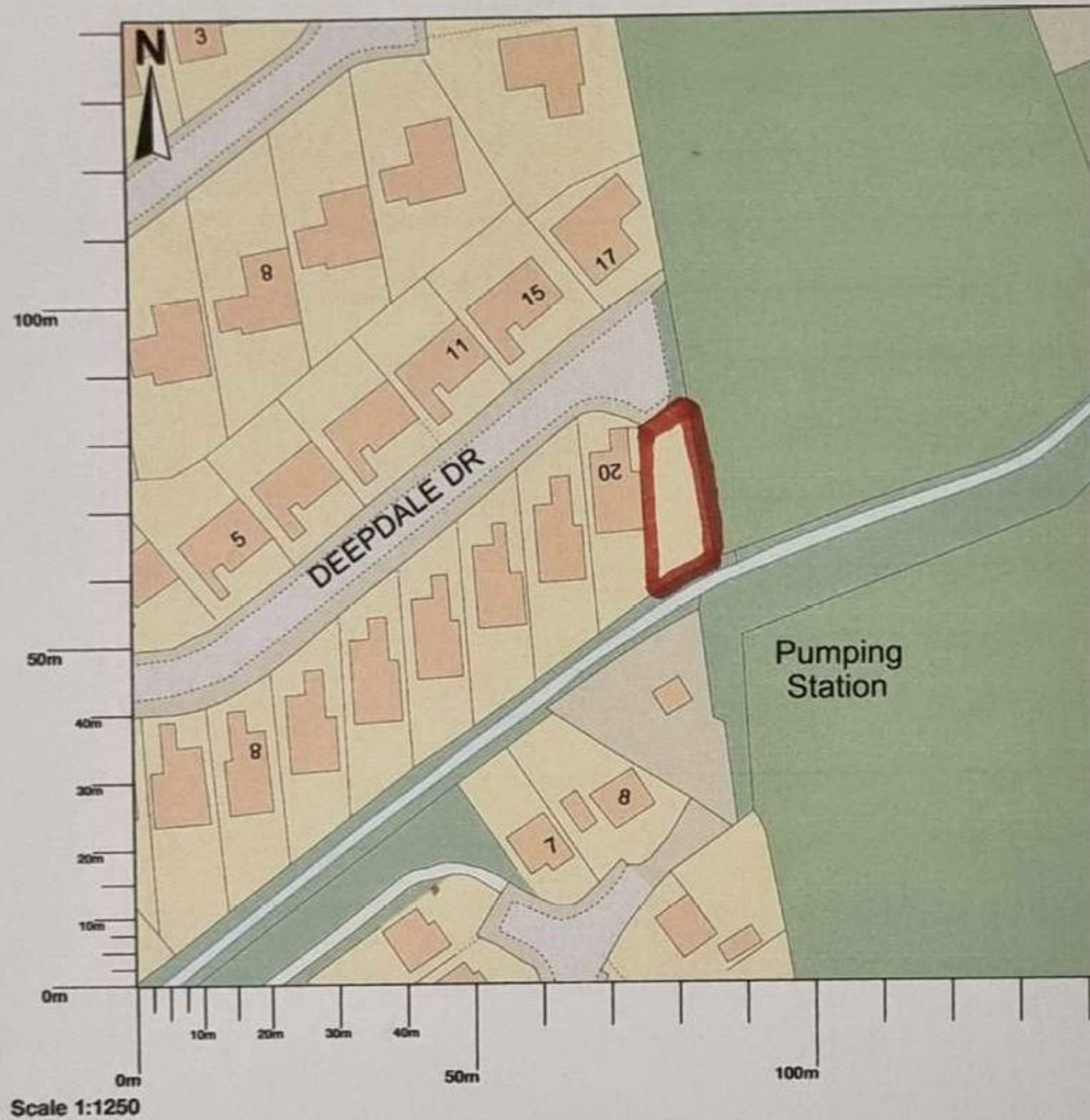


**UK
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20 Deepdale Drive, Leasingham, Sleaford, NG34 8LR



Map area bounded by: 505994,348775 506136,348917. Produced on 03 March 2021 from the OS National Geographic Database. Reproduction in whole or part is prohibited without the prior permission of Ordnance Survey. © Crown copyright 2021. Supplied by UKPlanningMaps.com a licensed OS partner (100054135). Unique plan reference: p2cuk/585765/794196

Appendix B

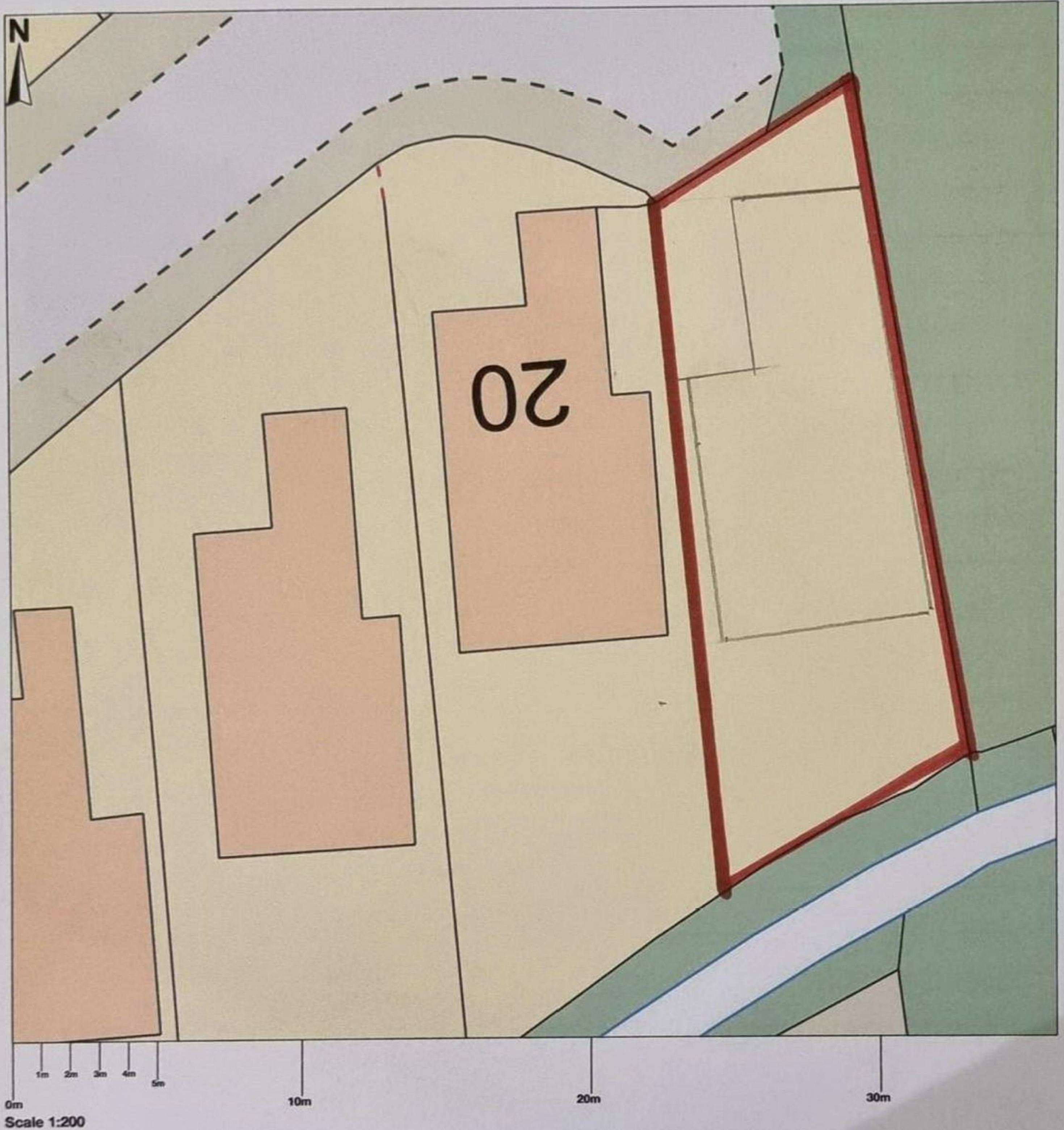


**UK
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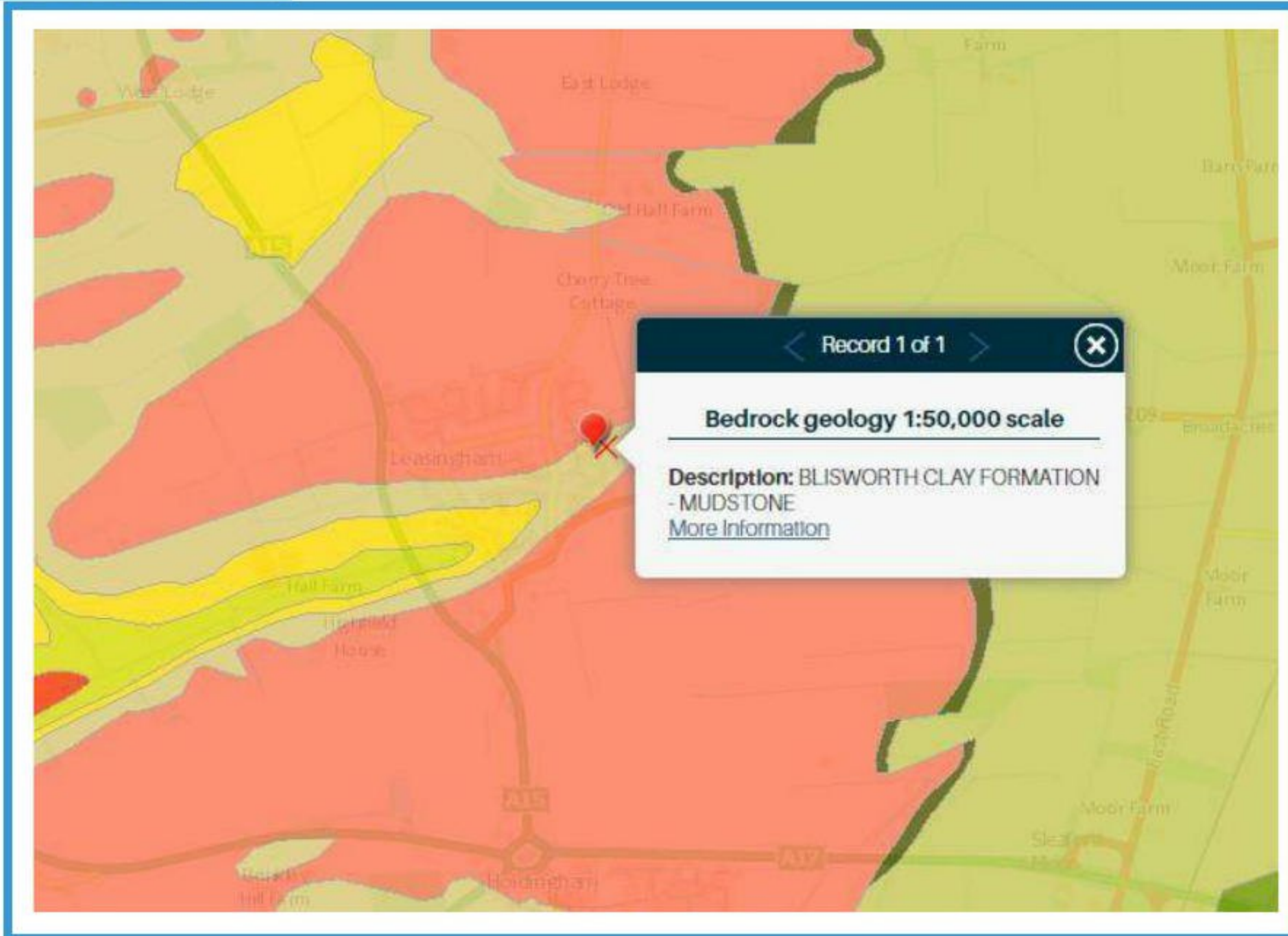


Map area bounded by: 506047,348828 506083,348864. Produced on 03 March 2021 from the OS National Geographic Database. Reproduction in whole or part is prohibited without the prior permission of Ordnance Survey. © Crown copyright 2021. Supplied by UKPlanningMaps.com a licensed OS partner (100054135). Unique plan reference: b36cuk/585765/794193

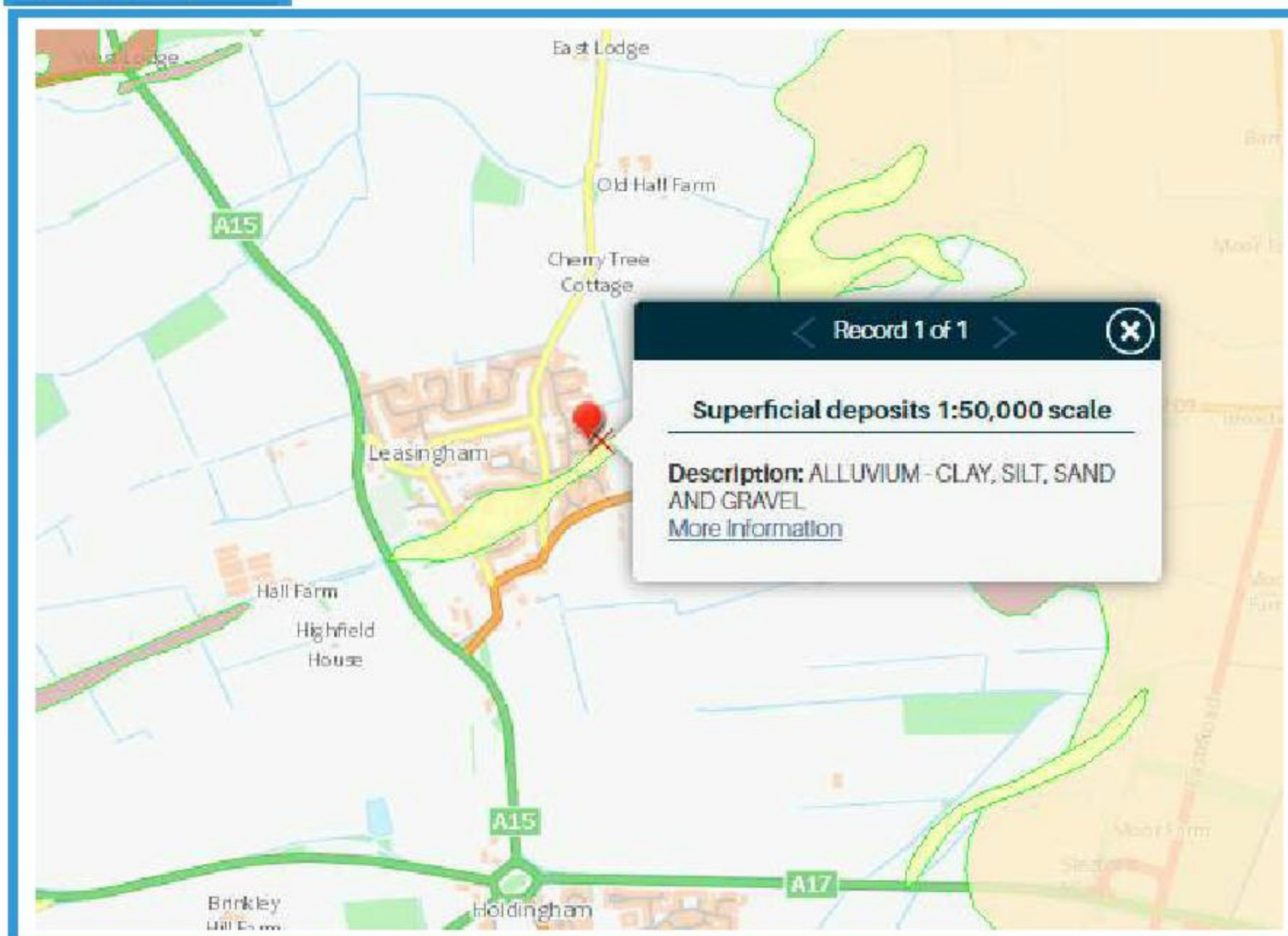
Appendix C



GEOLOGY - BEDROCK - BLISWORTH CLAY



GEOLOGY - SUPERFICIAL DEPOSITS - CLAY, SILT, SAND & GRAVEL







Main River Map

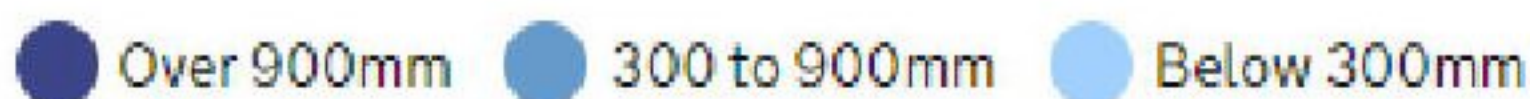


SITE FLOOD RISK

 Flood risk from surface water

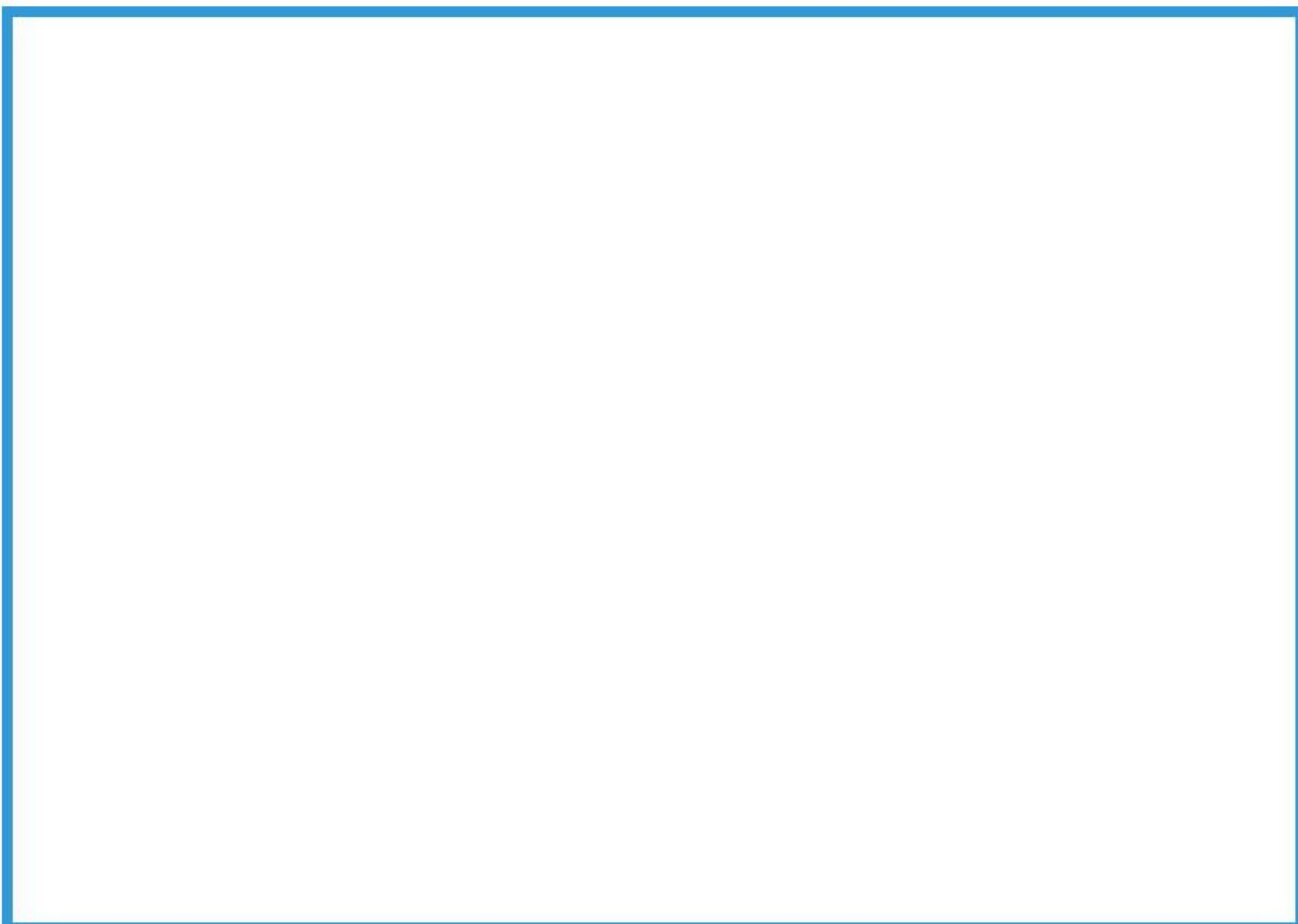
 Extent of flooding

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.





GROUND WATER FLOOD RISK





Site Check Results



Site Check Report Report generated on Thu Mar 11 2021
You selected the location: Centroid Grid Ref: TF06064885
 The following features have been found in your search area:

Source Protection Zones merged (England)

Zone 3

Aquifer Designation Map (Bedrock) (England)

Typology Unproductive

Aquifer Designation Map (Superficial Drift) (England)

Typology Secondary A

OK

Cancel

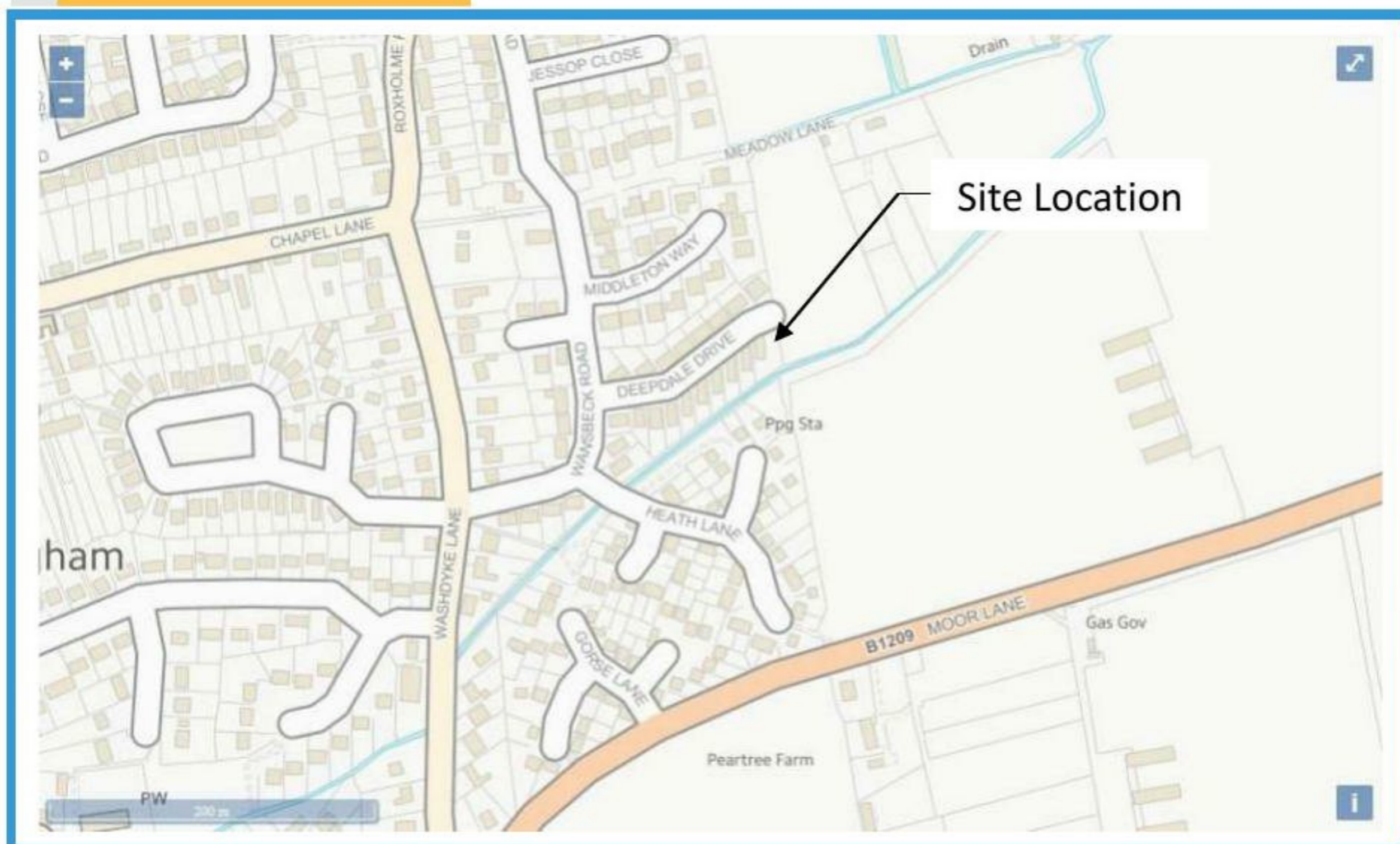
Print



Flood risk from reservoirs



Extent of flooding



Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
506070/348854

Created
10 Mar 2021 22:42

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

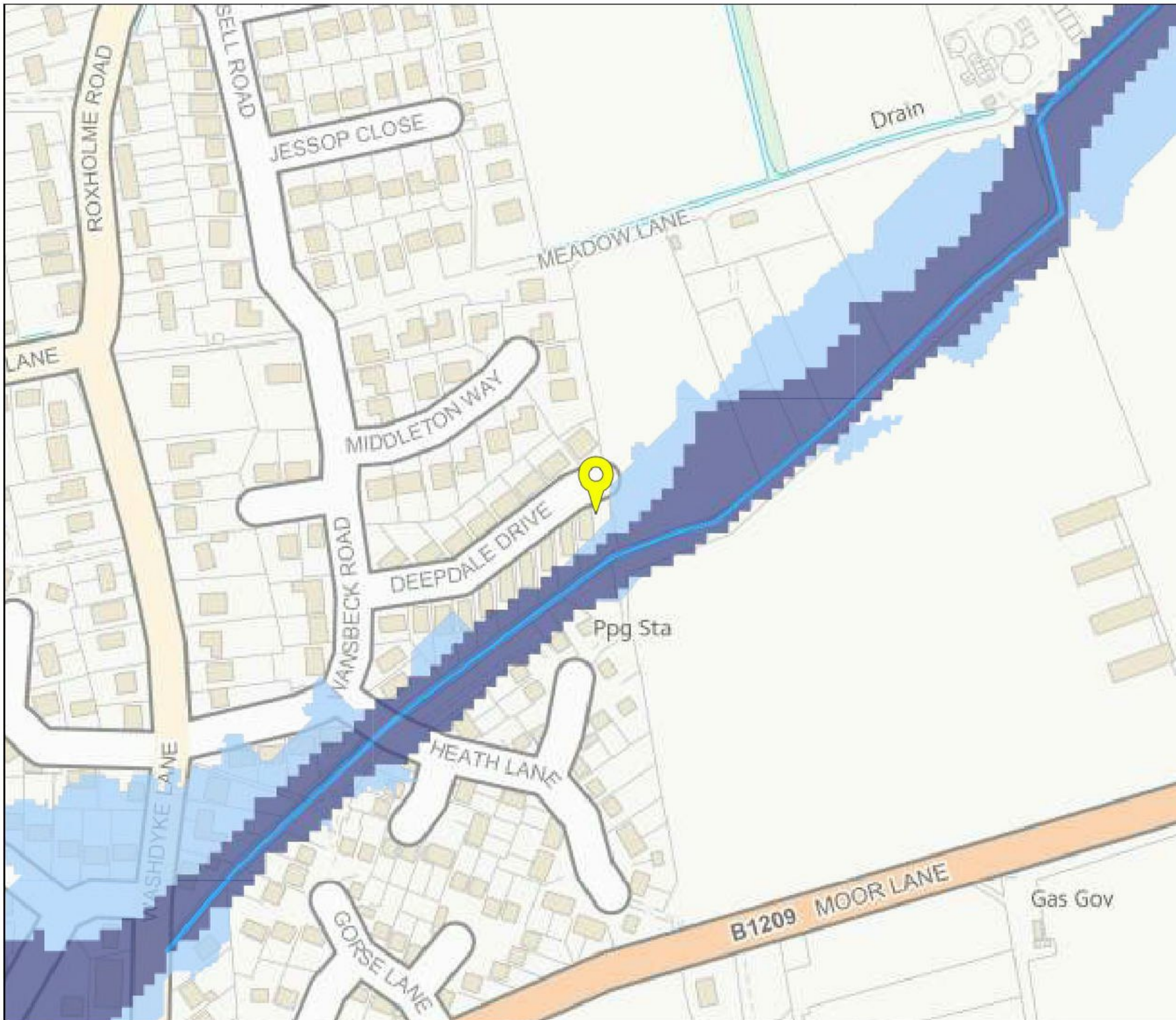
- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



Flood map for planning

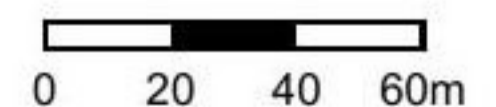
Your reference
<Unspecified>

Location (easting/northing)
506070/348854

Scale
1:2500

Created
10 Mar 2021 22:42

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefitting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area



staceyaddison23@gmail.com

Our ref: CCN-2021-205769

Date: 23/02/2021

Dear Stacey

Provision of Flood Risk Information for Deepdale Drive, Leasingham.

Thank you for your request to use our flood risk information for the above site. The information is set out below and attached. It is important you read any contextual notes on the maps provided.

If you are preparing a Flood Risk Assessment (FRA) for this site, please note this information may not be sufficient by itself to produce an adequate FRA to demonstrate the development is safe over its lifetime. Additional information may be required to carry out an appropriate assessment of all risk, such as consequence of a breach in defences.

We aim to review our information on a regular basis, so if you are using this data more than twelve months from the date of this letter, please contact us again to check it is still valid.

1. Flood Map

The attached map includes the current Flood Map for your area. The Flood Map indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring for fluvial (river) flooding. It also shows the extent of the Extreme Flood Outline which represents the extent of a flood with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal floodplains, showing the area at risk of flooding assuming no defences may give a slightly misleading picture in that if there were no flood defences, water would spread out across these large floodplains. This flooding could cover large areas of land but to relatively shallow depths and could leave pockets of locally slightly higher land as isolated dry islands. It is important to understand the actual risk of the flooding to these dry islands, particularly in the event of defence failure.

The Flood Map also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

2. Historic Flood Event Outlines

With regards to the history of flooding I can advise we do not have any records of flooding in this area. It is possible recent flooding may have occurred which we are currently investigating, therefore this information may be subject to change. It is possible other flooding may have occurred which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

3. Schemes in the area

There are no ongoing capital projects to reduce or sustain the current flood risk to this site.

4. Fluvial Flood Risk Information

4.1 Fluvial Defence Information

There are no formal flood defences reducing the risk of flooding to this site.

4.2 Fluvial Modelled Levels and Flows

Available modelled fluvial flood levels and flows for the model nodes shown on the attached map are set out in the data table attached. This data is taken from the model named on the data table, which is the most up-to-date model currently available.

Please note these levels are “in-channel” levels and therefore may not represent the flood level on the floodplain, particularly where the channel is embanked or has raised defences.

Our models may not have the most up to date climate change allowances. In time we will update our models for the latest allowances. You should refer to '[Flood risk assessments: climate change allowances](#)' to check if the allowances modelled are 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.

4.3 Fluvial Modelled Flood Extents

Please find attached a map showing available modelled flood extents, taking into account flood defences, for your area. This data is taken from the model named on the map, which is the most up-to-date model currently available.

4.4 Fluvial Hazard Mapping

For certain locations we have carried out modelling to map the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from overtopping and / or breaching of defences at specific locations for a number of scenarios.

At present this information is available for fluvial flood risk in Northampton, Lincoln, Wainfleet and some isolated rural locations.

The number of locations we have this information for is expected to increase in time.

At present this site is not covered by any hazard mapping.

5. Tidal Flood Risk Information

This site is not considered to be at risk from tidal flooding.

6. Development Planning

If you would like local guidance on preparing a flood risk assessment for a planning application, please contact our Sustainable Places team at Inplanning@environment-agency.gov.uk. It will help if you mention this data request and attach your site location plan.

We provide free preliminary advice; additional/detailed advice, review of draft FRAs and meetings are chargeable at a rate set to cover our costs, currently £100 (plus VAT) per hour

of staff time. Further details are available on our website at <https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals>.

General advice on flood risk assessment for planning applications can be found on GOV.UK at <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

Climate change will increase flood risk due to overtopping of defences. Please note, unless specified otherwise, the climate change data included has an allowance for 20% increase in flow. Updated guidance on how climate change could affect flood risk to new development - 'Flood risk assessments: climate change allowances' was published on GOV.UK in February 2016. The appropriate updated climate change allowance should be applied in a Flood Risk Assessment.

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

7. Data Licence and Other Supporting Information

We respond to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

This information is provided in accordance with the Open Government Licence which can be found here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Further information on flood risk can be found on the GOV.UK website at: <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

8. Other Flood Risk Management Authorities

The information provided with this letter relates to flood risk from main river or the sea. Additional information may be available from other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist).

I hope we have correctly interpreted your request. If you have any queries or would like to discuss the content of this letter further please contact Phoebe Cox using the email address below.

Yours sincerely,



for Ian Cappitt
Witham Partnerships and Strategic Overview Team Leader
e-mail PSOLINCS@environment-agency.gov.uk

Enc.
Flood Map
Modelled Fluvial Levels and Flows Data Sheet
Modelled Flood Extent Maps







Flood Map centred on TF 06065 48847 - created February 2021 [Ref: CCN-2021-205769]

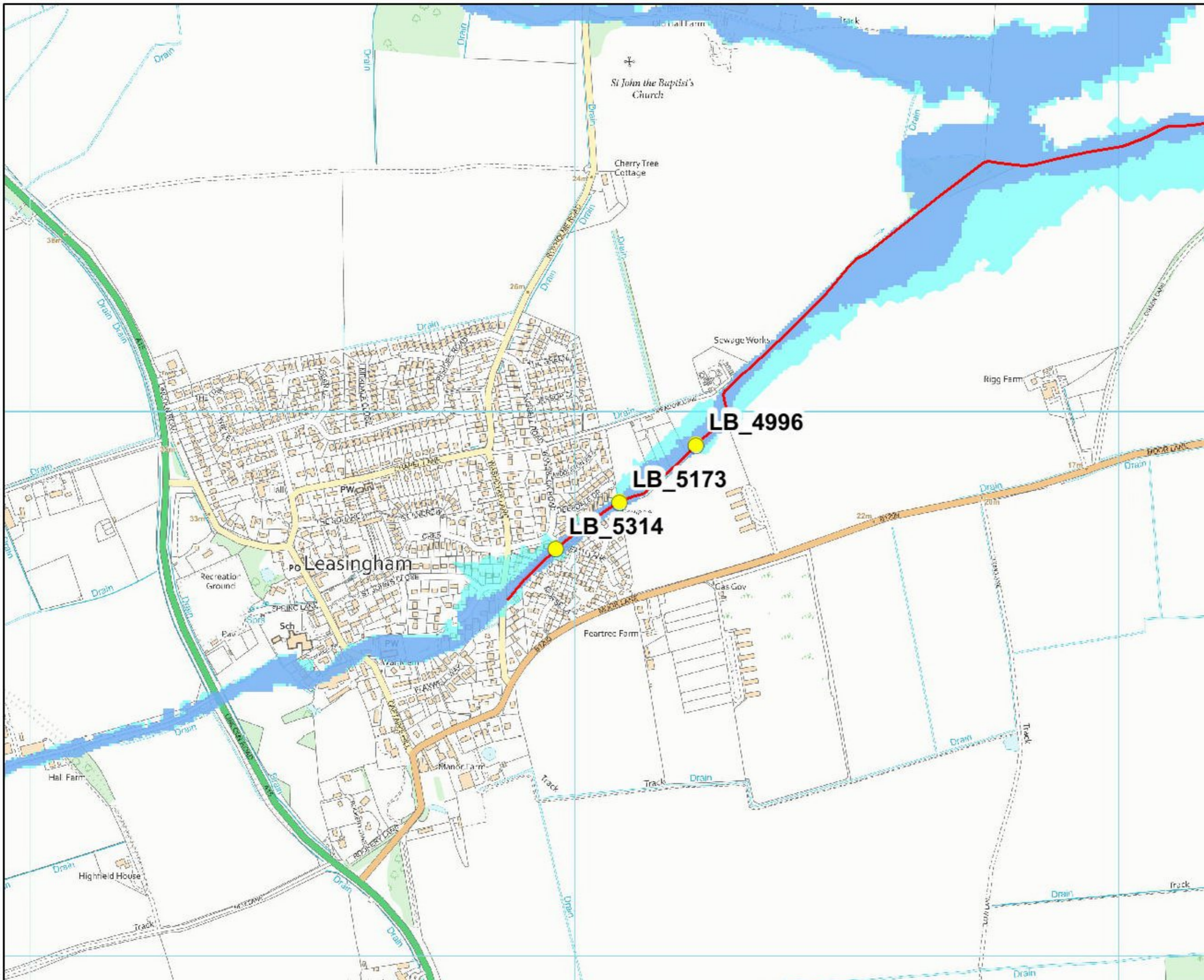


Scale 1:10,000



Legend

-  Modelled_Nodes
-  Main River
-  Raised Defences
-  Flood Storage Area
-  Areas at Risk of Flooding from Rivers or the Sea
-  Extreme Flood Outline



Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded:

- from the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year.
- or from a river by a flood that has a 1% (1 in 100) or greater chance of happening each year.

Light blue shows the extent of the Extreme Flood Outline, which represents the extent of a flood event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Sites outside the two extents, but behind raised defences, may be affected by flooding if the defences are overtopped or fail.

Fluvial Flood Levels (mODN)

The fluvial flood levels for the model nodes shown on the attached map are set out in the table below. They are measured in metres above Ordnance Datum Newlyn (mODN).

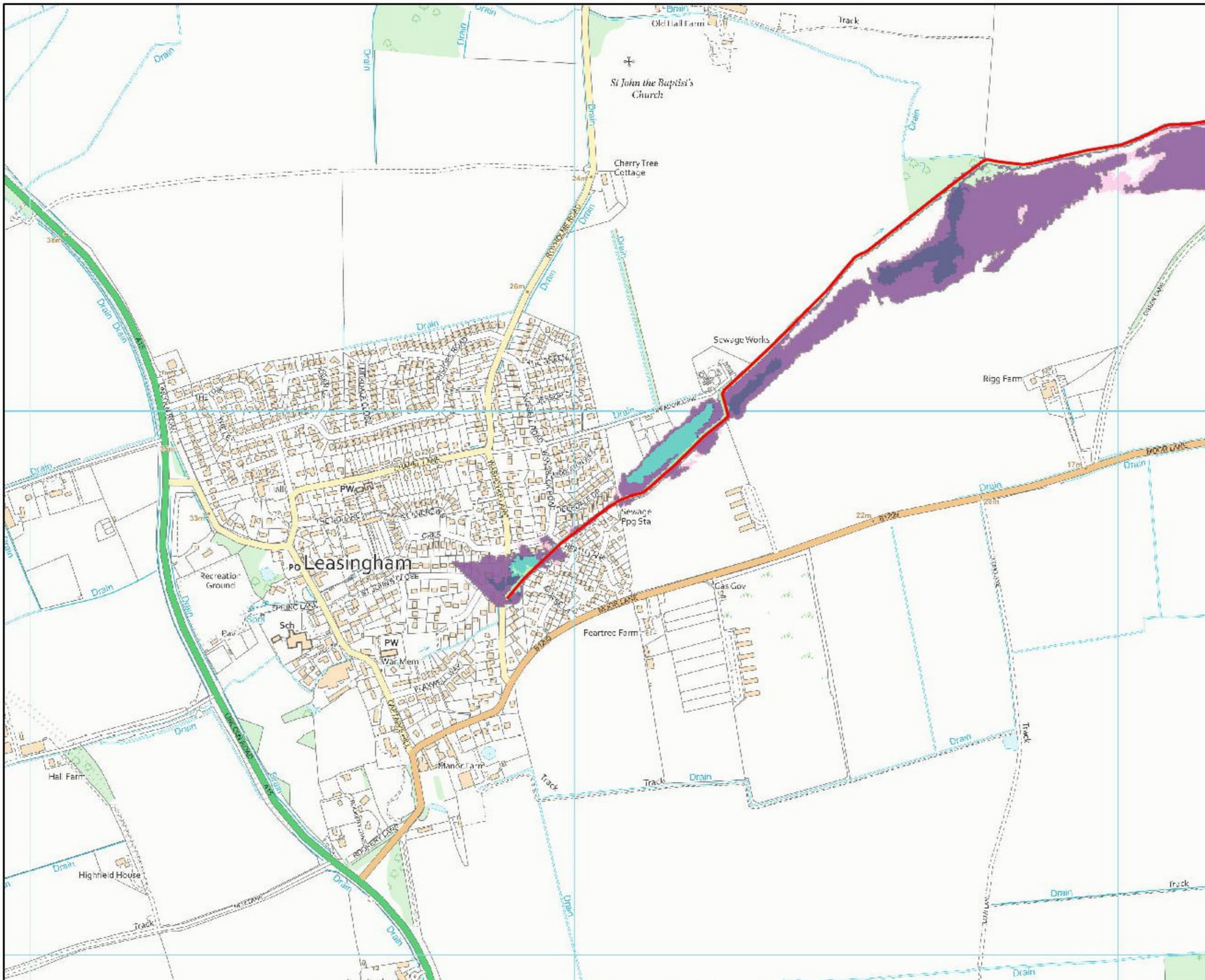
| Node Label | Easting | Northing | Annual Exceedance Probability - Maximum Water Levels (mODN) | | | | | | | | | | | |
|------------|---------|----------|---|-----------------|------------------|-----------------|-----------------|-----------------|--------------------|------------------|--|--------------------|---------------------|--|
| | | | 50% (1 in 2) | 20% (1 in 5) | 10% (1 in 10) | 5% (1 in 20) | 4% (1 in 25) | 2% (1 in 50) | 1.33% (1 in 75) | 1% (1 in 100) | 1% (1 in 100) inc 20% Climate Change | 0.5% (1 in 200) | 0.1% (1 in 1000) | 0.1% (1 in 1000) inc 20% Climate Change |
| LB_4996 | 506223 | 348941 | 19.13 | 19.35 | 19.46 | 19.56 | 19.59 | 19.67 | 19.72 | 19.76 | 19.77 | 19.77 | 20.04 | 20.09 |
| LB_5173 | 506082 | 348836 | 19.42 | 19.58 | 19.67 | 19.75 | 19.77 | 19.84 | 19.88 | 19.90 | 19.91 | 19.91 | 20.20 | 20.26 |
| LB_5314 | 505965 | 348751 | 19.71 | 19.84 | 19.93 | 20.04 | 20.07 | 20.16 | 20.21 | 20.24 | 20.39 | 20.34 | 20.81 | 20.87 |

Fluvial Flood Flows (m³/s)

The fluvial flood flows for the model nodes shown on the attached map are set out in the table below. They are measured in metres cubed per second (m³/s).

| Node Label | Easting | Northing | Annual Exceedance Probability - Maximum Flows (m ³ /s) | | | | | | | | | | | |
|------------|---------|----------|---|-----------------|------------------|-----------------|-----------------|-----------------|--------------------|------------------|--|--------------------|---------------------|--|
| | | | 50% (1 in 2) | 20% (1 in 5) | 10% (1 in 10) | 5% (1 in 20) | 4% (1 in 25) | 2% (1 in 50) | 1.33% (1 in 75) | 1% (1 in 100) | 1% (1 in 100) inc 20% Climate Change | 0.5% (1 in 200) | 0.1% (1 in 1000) | 0.1% (1 in 1000) inc 20% Climate Change |
| LB_4996 | 506223 | 348941 | 1.28 | 1.73 | 2.03 | 2.34 | 2.44 | 2.77 | 2.98 | 3.13 | 3.80 | 3.52 | 9.36 | 11.23 |
| LB_5173 | 506082 | 348836 | 1.28 | 1.73 | 2.03 | 2.34 | 2.44 | 2.77 | 2.98 | 3.13 | 3.76 | 3.52 | 9.36 | 11.23 |
| LB_5314 | 505965 | 348751 | 1.28 | 1.73 | 2.03 | 2.34 | 2.44 | 2.77 | 2.98 | 3.13 | 3.76 | 3.52 | 9.36 | 11.23 |

Modelled Flood Extents (with defences) Model: Lower Witham 2009 [CCN-2021-205769]



Scale 1:10,000



Legend

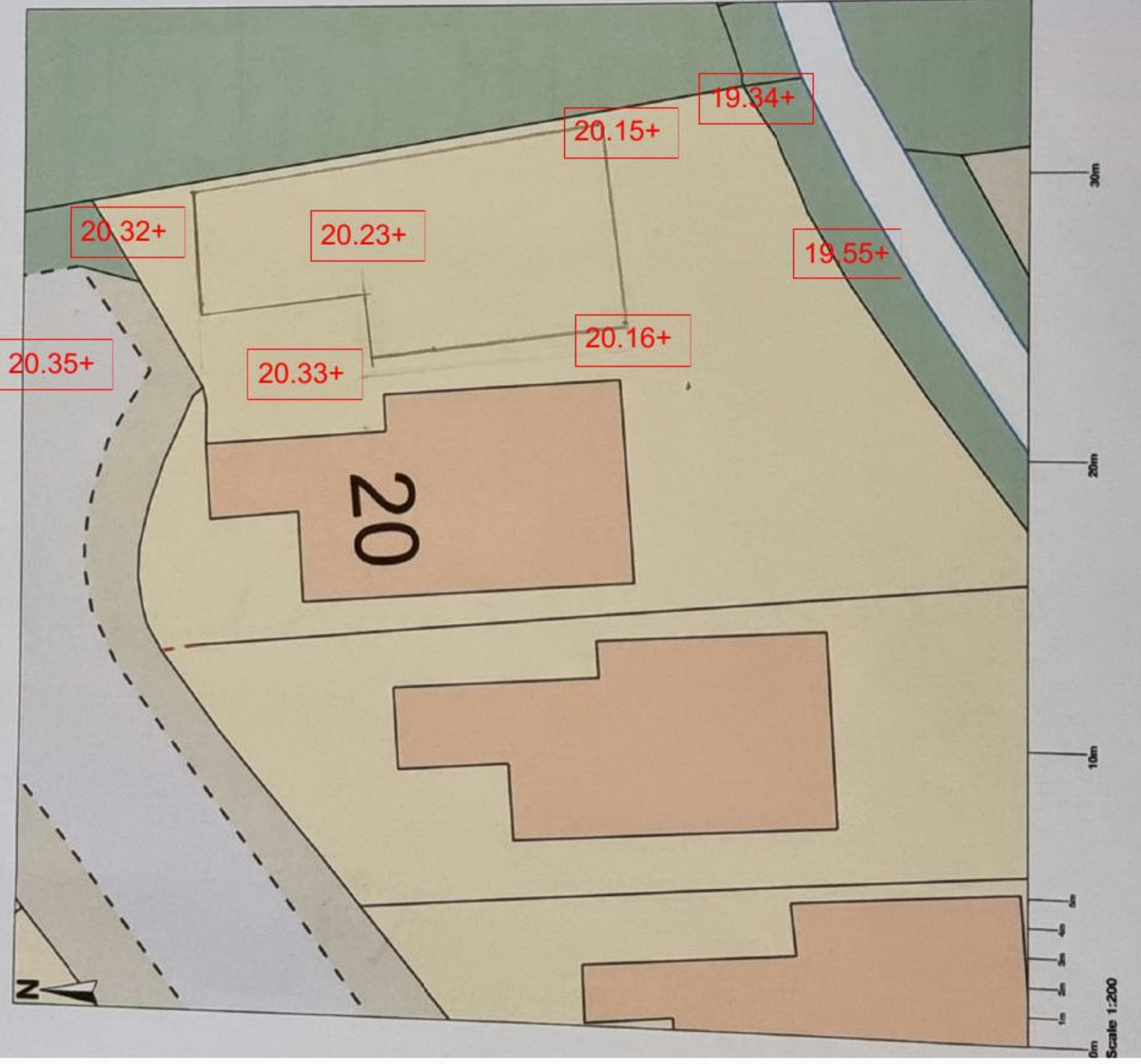
- Main River
- 2009_LW_Defended_Baseline_1in25
- 2009_LW_Defended_Baseline_1in100
- 2009_LW_Defended_Baseline_1in1000
- 2009_LW_Defended_Baseline_1in100_CC20pc
- 2009_LW_Defended_Baseline_1in1000_CC20pc



**UK
Planning
Maps**



20 Deepdale Drive, Leasingham, Sleaford, NG34 8LR



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Existing
Ground
Levels