

Replacement Dwelling, Pound Lane, BN44 3JD

Reference: 416 FRA-v2

Jan-25

www.rida-reports.co.uk

	Section
Introduction	1
Site Assessment	2
National and Local Planning Policy	3
The Sequential and Exception Test	4
Flood Hazard Assessment	5
Flood Risk Management	6
Off-Site Impacts	7
Residual Risk	8
Conclusions	9
Appendices	
Site Location Plan	A
Existing and Proposed Site Layouts	B
Site Characteristics	C
Flood Level Data	D



FLOOD RISK ASSESSMENTS &
DRAINAGE STRATEGIES

FLOOD RISK ASSESSMENT

Replacement Dwelling, Pound Lane, BN44 3JD

Reference: 416 FRA-v2

Report Limitations

All comments and proposals contained in this report, including any conclusions, are based on information available to RIDA Reports during investigations. The conclusions drawn by RIDA Reports could therefore differ if the information is found to be inaccurate or misleading. RIDA Reports accepts no liability should this be the case, nor if additional information exists or becomes available with respect to this scheme.

Except as otherwise requested by the client, RIDA Reports is not obliged to and disclaims any obligation to update the report for events taking place after the date on which the assessment was undertaken.

RIDA Reports makes no representation whatsoever concerning the legal significance of its findings or the legal matters referred to in the following report.

All Environment Agency mapping data used under special licence. Data is current as the data on the correspondence given by the Environment Agency and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

This report has been prepared for the sole use of our direct client. No other third parties may rely upon or reproduce the contents of this report without the written permission of RIDA Reports. If any unauthorised third party comes into possession of this report they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill.

Oxford Innospace, Old Music Hall, 106-108 Cowley Road, Oxford, OX4 1JE
England and Wales number 10590566

Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed to undertake a Level 2 – Scoping Study Flood Risk Assessment for a development located at BN44 3JD.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
 - Whether the proposed development will likely 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 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
Local Council flood Maps
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 Pound Lane, Upper Beeding. The nearest postcode is BN44 3JD. Refer to appendix A for site location plan.
- 2.2 The current use of the site is a greenfield. The current user vulnerability classification of the site is Water compatible. The site is located in the River Flood Zone 3. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the construction of a replacement dwelling. Refer to Appendix B for the 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

- Hydrology**
 - 2.5 A tributary of the River Adur is located approximately 190 m away from the development.
- Aquifer**
 - 2.6 The development is located within a principal aquifer area. A principal aquifer consists of layers of rock or deposits that provide a high level of water storage. It may support water supply and/or river base flow on a strategic scale. It is likely that principal aquifers are aquifers previously designated as major.
- Source Protection Zone**
 - 2.7 The site is not located within a Source Protection Zone.
- Groundwater Levels**
 - 2.8 The ground water levels for this site are unknown.

Site Geology

- Bedrock**
 - 2.9 The British Geological Survey records of the site show that it is located within the Upper Greensand Formation - Siltstone and Sandstone.
- Superficial Deposits**
 - 2.10 The British Geological Survey records show that the superficial deposits are River Terrace Deposits, 1 (Adur) - Sand and Gravel.



National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective of contributing to sustainable development. As part of it, they ensure that flood risk and sustainability are considered 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 land suitability for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the development layout and the application of Sustainable Drainage Systems (SuDS).

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 robust flood risk management for people, homes and businesses and encourages using SuDS for developments. A robust SuDS strategy should consider the recommendations in this Flood Risk Assessment.

Strategic Flood Risk Assessment (SFRA)

- 3.3 Planning policy with regard to development and flood risk in the area is detailed in the Strategic Flood Risk Assessment (SFRA) which was published in 2020. The proposed development site is located within the administrative boundary of the Horsham District Council.
- 3.4 The SFRA commits to direct new development to locations at the lowest flood risk. The SFRA provides information on the levels and flood hazards that could result from flooding. The Environment Agency flood zone maps and the SFRA ignore the presence of existing flood defences when defining the potential extent of flooding.
- 3.5 This report follows the guidance given in the Strategic Flood Risk Assessment by evaluating the flood risk and providing relevant flood mitigation.



- 4.1 The NPPF guidance states that the sequential test "is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding."

Applicability of the Sequential Test

- 4.2 The flood risks were determined by identifying all the sources of flooding and assessing their possible impact and likelihood to development. It is confirmed that the development is:

- In Flood Zone 3, based on the Planning Flood Risk Map
- The final Flood Zone will be confirmed once the Environment Agency's data is received
- At Medium risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Potentially within an area of sewer flooding

- 4.3 Due to the flood risk on the development, a sequential test is required. For this development, the sequential assessment was completed for the area within the red line of the planning application. The development has been located at the lowest flood risk. Regarding looking at other reasonably available sites, it is unlikely that other areas are available in lower flood risk probability as the development is small and can only be located within the proximity of the existing land use and land ownership. It is concluded that the current proposals pass the sequential test.

Exception Test

- 4.4 Fluvial flood risk was assessed using the Environment Agency Flood Zone Maps and the sequential risk-based approach recommended in the NPPF guidance. The exception test requirement considers the flood risk vulnerability of land uses about the flood zone categorisation. These parameters are assessed to determine whether the development requires an exception test or is inappropriate.



<p>Step 1</p> <p>Flood Zone categorisation</p>	<p>4.5</p>	<p>The proposed development falls within The Environment Agency (EA) Flood Zone 3. The Flood Zone 3 is considered to have a high probability of flooding with a 200 years or greater annual probability or >0.5% AEP.</p>
<p>Step 2</p> <p>Flood risk vulnerability</p>	<p>4.6</p>	<p>Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable'.</p>
<p>Step 3</p> <p>Flood Zone incompatibility</p>	<p>4.7</p>	<p>The Flood Risk vulnerability and Flood Zone incompatibility table of the NPPF Planning Practice Guide states that More vulnerable developments are required to pass the Exception Test in this area.</p>

The Exception Test

4.8 The development requires passing the Exception Test. To pass the exception test, they should be demonstrated the following:

(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

(b) the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Both elements of the exception test should be satisfied for development to be allocated or permitted.

4.9 The development reduces flood risk to the wider community through the provision of or financial contribution to flood risk management infrastructure. It also offers multifunctional Sustainable Drainage Systems that integrate with green infrastructure, significantly exceeding the National Planning Policy Framework policy requirements for Sustainable Drainage Systems.

4.10 The development reduces the flood risk overall and demonstrates that the measures go beyond just managing the flood risk resulting from the development. Reductions could be achieved, for example by:

- Incorporating green infrastructure within the layout and form of development to make additional space for the flow and storage of flood water;
- Providing Sustainable Drainage Systems that manage flood risk beyond the proposed site and above the usual standard, such as by removing surface water from existing combined sewers;



- Providing or making contributions to flood risk management infrastructure that will provide additional benefits to existing communities and/or safeguarding the land needed to deliver it.

4.11 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 contribute to the reduction in flood risk elsewhere. On this basis, it is concluded that the proposed development passes the Exception Test.



- 5.1 The development has been assessed for the following potential flood risks, river and tidal flood risk, surface water flooding, flooding from groundwater, reservoir flood risk and drainage systems.

Flood Defence and Historic Flooding

- 5.2 The Environment Agency records show that the site does not benefit from flood defences. They also show that the area around the site has not been flooded in the past. See Appendix C for details.

Flooding from river and sea

- 5.3 The site is affected by River Flooding. The proposed development falls within The Environment Agency (EA) Flood Zone 3. The Flood Zone 3 is considered to have a high probability of flooding with a 100 years or greater annual probability or >1%AEP.
- 5.4 The climate change allowance has been taken from the EA peak river flow map. The vulnerability of the development, the design life of the building, and the flood zone classification were used to determine it. The climate change allowance for this site is 37%. The nearest climate change allowance of 37% provided by the EA was used as the most representative to complete this assessment.
- 5.5 The levels provided by the Environment Agency have been interpolated and are shown in table 1 below. Further details are provided in Appendix D.

Flood levels at Site

Return Period	Flood Level (m AOD)
1 in 20 (5%)	NIL
1 in 30 (3.3%)	NIL
1 in 100 (1%)	NIL
1 in 100 + 37%(CC)	4.13
1 in 1000 (0.1%)	NIL



- 5.6 The river flood risk level is 4.13m AOD. The external depth of water is 1.53m.

Surface water (overland flows) flood risk

- 5.7 The Environment Agency maps show that the flood risk from surface water is medium. The residual risk of localised ponding remains likely. The Environment Agency surface water flood risk maps are defined by applying a specific procedure based on digital terrain models and assumptions regarding infiltration and urban drainage losses. The surface water flood maps are determined by the Environment Agency as follows:

- 5.8 *"The nationally produced surface water flood mapping only indicates where surface water flooding could occur due to local rainfall. It does not fully represent flooding that occurs from:*

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

Due to the modelling techniques, the mapping picks out depressions in the ground surface. It 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 consider 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 into rivers or the sea."

- 5.9 The strategic flood risk for the Horsham District Council confirms that the flood risk for the site is Medium. The surface water flood data has not been produced to determine the flood levels at individual properties. This data does not contain the climate change allowances for depth levels. Therefore, the Design flood level given below is an assumption. The new development may have greater or lower surface water flood depths.

- 5.10 Based on the Environment Agency and the Strategic flood risk assessment's



surface water mapping. There are no surface water drainage systems at the site and surrounding area. It is concluded that the site is at Medium risk of flooding from surface water sources. The depth of water is potentially below 300mm. For this assessment, a depth of water of 0.3m with a climate change allowance of 0.15m has been taken as the most appropriate depth to the site. The average ground level at the site is 2.15m AOD. The surface water flood level on this site could be in the region of 2.6m AOD.

Flooding from drainage systems in adjacent areas

- 5.11 The postcode area of the development is shown as having a records of sewer incidents within the flood maps of the Strategic Flood Risk Assessment. See appendix C for details.

Reservoirs Risks

- 5.12 The Reservoir Flood Map (RFM) produced by the Environment Agency does 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. They 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. See Appendix C.

Groundwater flood risk

- 5.13 The British Geological Survey's flood risk susceptibility maps show that the development has the potential for groundwater flooding above ground level. Groundwater levels 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 high. The groundwater flood depth could potentially be 0.15m. The average external level at the site is 2.15m AOD. The potential groundwater flood level is 2.3m AOD. This level has been given as a precautionary measure. It is recommended that monitoring of groundwater is undertaken should this measure be reviewed. Refer to Appendix C for record drawings.



Critical Drainage Areas

- 5.14 The Strategic Flood Risk Assessment was reviewed as part of this assessment. However, it does not show the critical drainage areas within the council. For this report, it has been assumed that the site is outside of a notified critical drainage area.



6.1 The Flood hazard assessment has demonstrated that the site is:

- In Flood Zone 3, based on the Planning Flood Risk Map
- The final Flood Zone will be confirmed once the Environment Agency's data is received
- At Medium risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Potentially within an area of sewer flooding

6.2 Under the NPPF it is necessary to demonstrate that, for any new development on the site, it is possible to provide an adequate level of flood protection for personnel working or living at the development.

Design Flood Level

6.3 The design flood level is the maximum estimated water level during the design storm event including an allowance for climate change in line with current best practice and the national planning policy guidance.

6.4 The Design Flood Level for this development has been determined by evaluating the levels from the Fluvial/Sea, Surface Water and Groundwater flood levels.

6.5 For this site, the Design Flood Level is 4.13m AOD. This is the highest level and corresponds to the River/Sea Flood Level.

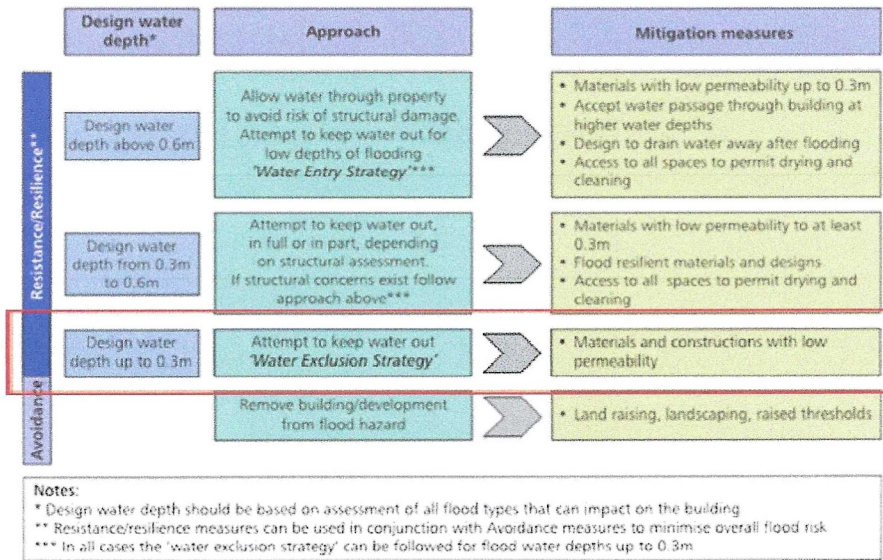
Flood Protection

6.6 The National Planning Guidance standing advice and Environment Agency recommends that where possible, flood avoidance is provided by establishing the development's finished floor level 600mm above (freeboard) the design flood level. However, this level can be reduced if there is a high level of certainty about the estimated flood level. For this site the estimated free board has been determined to be 0.6m above the Design Flood Level due to the quality of the flood risk information available and the type of risk. The finished floor should be 4.13m AOD. It would involve a height differential of 1.53m. This is the distance between the average external level (2.6m AOD) and the potential Finished Floor Level.



- 6.7 It is possible to achieve this FFL. As the foundations and other parts of the building may be in contact with water, the following flood mitigation is proposed.
- 6.8 The flood mitigation strategies for the development has been based on the CLG 2007 Improving the Flood Performance of New Buildings. See the figure below for the strategy highlighted in red. The strategy is based on the water level within the proximity to the building.

Rationale for flood resilient and/or resistant design strategies



- 6.9 The design water depth for this site is 0.9m. The development should utilise building materials that are suitable for a 'water exclusion strategy'. Materials classified as "Good" (highlighted in red) in the Figure below shall be used for new construction up to 4.13m AOD.



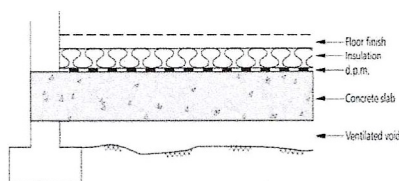
Flood resilience characteristics of building materials (based on laboratory testing)

Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good

*Resilience characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth

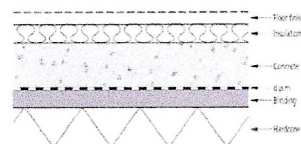
6.10 A suspended concrete floor slab at least 150mm thick is the preferred option. Beam and Block slabs with geomembrane and 75mm min screed can also be used. There should be a minimum space of 150mm ventilated void between the ground level and the bottom of the floor slab. Damp proof membranes should 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 can be used. Ground-bearing slabs are also an option. See figures below.

Suspended Concrete Slab detail



- Reinforced concrete slab at least 150mm thick and complying with structural requirements for uplift forces
- Damp proof membrane of polythene at least 1200 gauge
- Insulation as rigid closed-cell material
- Ceramic tiles or stone floor finishes and including skirting boards.

Ground bearing Concrete Slab detail



- Hardcore bed at least 100mm thick of well compacted inert material, bound with fine inert material to provide a smooth base
- Damp proof membrane of polythene at least 1200 gauge
- Concrete slab at least 150mm thick
- Insulate as rigid closed-cell material
- Ceramic tiles or stone floor finishes and skirting boards.

6.11 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. In new walls use extended periscope subfloor



ventilators or fit removable airbrick covers; fix plasterboard sheets horizontally rather than vertically, or split sheets mid-height with a dado rail, to reduce the extent of replacement; specify lime- or cement-based renovating plasters or renders rather than gypsum-based, with water-resistant paint finishes. The use of water-proof, water-resistant or micro-porous surface coatings on masonry should be avoided as they can inhibit the drying-out of the building fabric.

6.12 The general precautionary measures to mitigate the risk of groundwater flooding in this development are:

- Ground floor threshold levels are higher than 0.25 m above ground level to allow for uncertainty.
- It is proposed to add a tanking membrane up to 0.3 m above the ground level.
- Flow paths are provided 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 the risk from groundwater has been managed.

6.13 The site is within an area of sewer flooding. The following recommendation should be followed:

- All new connections to the sewer network should have non-return valves.



Flood Flow conveyance and storage

- 7.5 The proposed development implements a block and beam floor deck resting on top of hit and miss brick walls. This reduces the volume taken from the floodplain as much as possible. As the development is located on a flat high ground, there are no readily available levels within the redline to fully compensate the taken volume. See Appendix D for details.



- 8.1 This flood risk assessment has identified the potential flooding mechanisms that could affect the site. As part of this, the following residual risks have been evaluated.

Public safety and Site Access




- 8.2 This assessment has demonstrated that the proposed development will have no adverse impact on flood risk in the area surrounding the site. Available evidence indicates that the development would not change surface water generation. Therefore, there is no basis to indicate that, with respect to flood risk, the proposed development would adversely impact public safety.
- 8.3 It will be necessary to ensure that all building users are fully informed of procedures to be implemented during the threat of imminent flooding.

Flood Warning and evacuation

- 8.4 The site is located within an area covered by the Environment Agency Flood Alert service. It is recommended that the users of the proposed development are registered with this service to receive early warning of imminent flooding.
- 8.5 The occupants of the site are encouraged to sign up for the alerts. An appropriate Flood Management and Evacuation Plan tailored to the use of the site should be in place before the site occupation. Table 4 below shows the actions that will be taken for each flood warning.
- 8.6 Action to be taken in the event of an Alarm being Raised or a Flood Warning Received:
- Raise the alarm and evacuate the site following the established Fire Drill procedures. The main assembly is as per the main house fire drill assembly point.
 - Contact Emergency Fire Services (999) if necessary and Environment Agency Floodline: (0845 988 1188) if the event is unexpected.
 - If safe to do so, locate and turn off critical services, e.g. water, gas & electricity.
 - Follow the routes below to evacuate the site altogether.













Actions that will be taken for each flood warning

Warning	Message	Timing	Action
 FLOOD ALERT	Flooding is possible. Be prepared.	2 hours to 2 days in advance of flooding.	<ul style="list-style-type: none"> - Be prepared for flooding. - Prepare a flood kit.
 FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 1 day in advance of flooding.	<ul style="list-style-type: none"> - Act now to protect your property. - Block doors with flood boards or sandbags and cover airbricks and other ventilation holes. - Move pets and valuables to a safe place. - Keep a flood kit ready. - Move any critical equipment and information to a safe location
 SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life and different actions are required.	<ul style="list-style-type: none"> - Be ready should you need to evacuate from the property. - Co-operate with the emergency services and call 999 if you are in immediate danger.
Warning Removed	No further flooding is currently expected for your area.	Issued when a flood warning is no longer in force.	<ul style="list-style-type: none"> - Flood water may still be around and could be contaminated. - If you've been flooded, ring your buildings and contents insurance company as soon as possible.

Useful local phone numbers

Please write your local phone numbers in the space provided below. Make sure they are easy to find in the event of a flood.

	Local authority:
	Local police:
	Gas and electricity company:
	Insurance company and policy details:
	Doctor:
	Pharmacy:
	Electrician:
	Gas safe engineer:
	Plumber:
	Builder:



- 9.1 It is concluded that subject to the proposed mitigation measures, the site can be developed in accordance with the provisions of the NPPF and the requirements of the Environment Agency and the local planning authority.
- 9.2 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.
- 9.3 It is proposed that a formal Flood Warning and Emergency Response Plan is developed for the proposed development to communicate flood emergency response procedures to all the occupants of the site.



Appendix A

MapServe



TQ1911
111360

SY8016
TQ1911
111360



LOCATION PLAN scale 1:100



BLOCK PLAN

Date: _____
Revised: _____
Copyright: **Dr. Humphry Associates**

The Studio - The Rocks
Ivy Dene Lane
ASHURDELI Wood
West Sussex RH19 3TN
Telephone: 01243 213039 Fax: 01243 213044
Email: info@drhumphry.co.uk



Client: **MR SIMON STRINGER**
Site: **Replacement Dwelling at:
Former Newbrook Stables
Pound Lane,
Upper Beeding,
West Sussex,
BN44 3JD**

Drawing Title:
BLOCK & LOCATION PLAN

Scale: 1:500 1:1000

Date: 25.08.2022 Drawn by: IAB

Ref: 250822-01

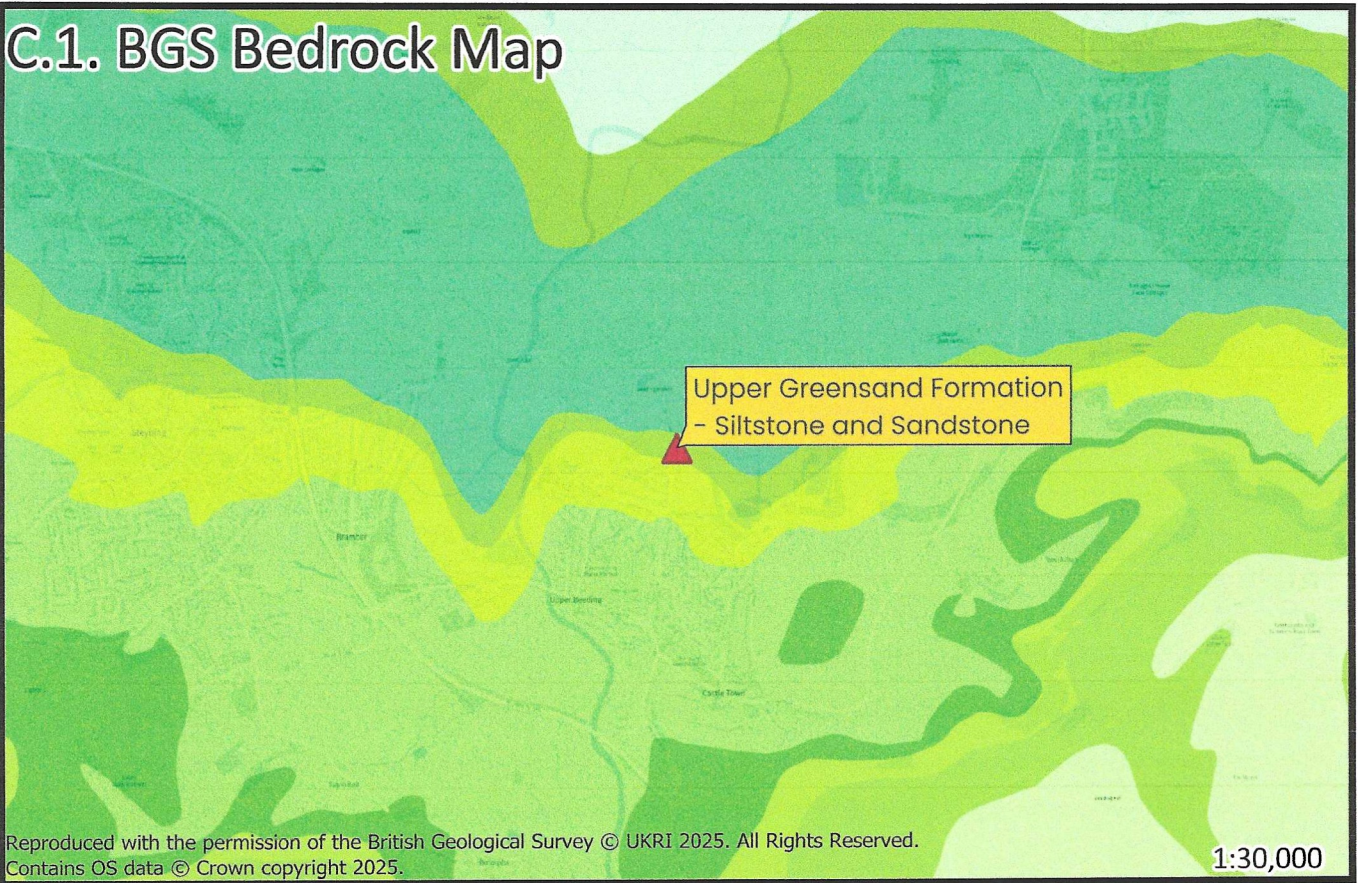
Appendix B



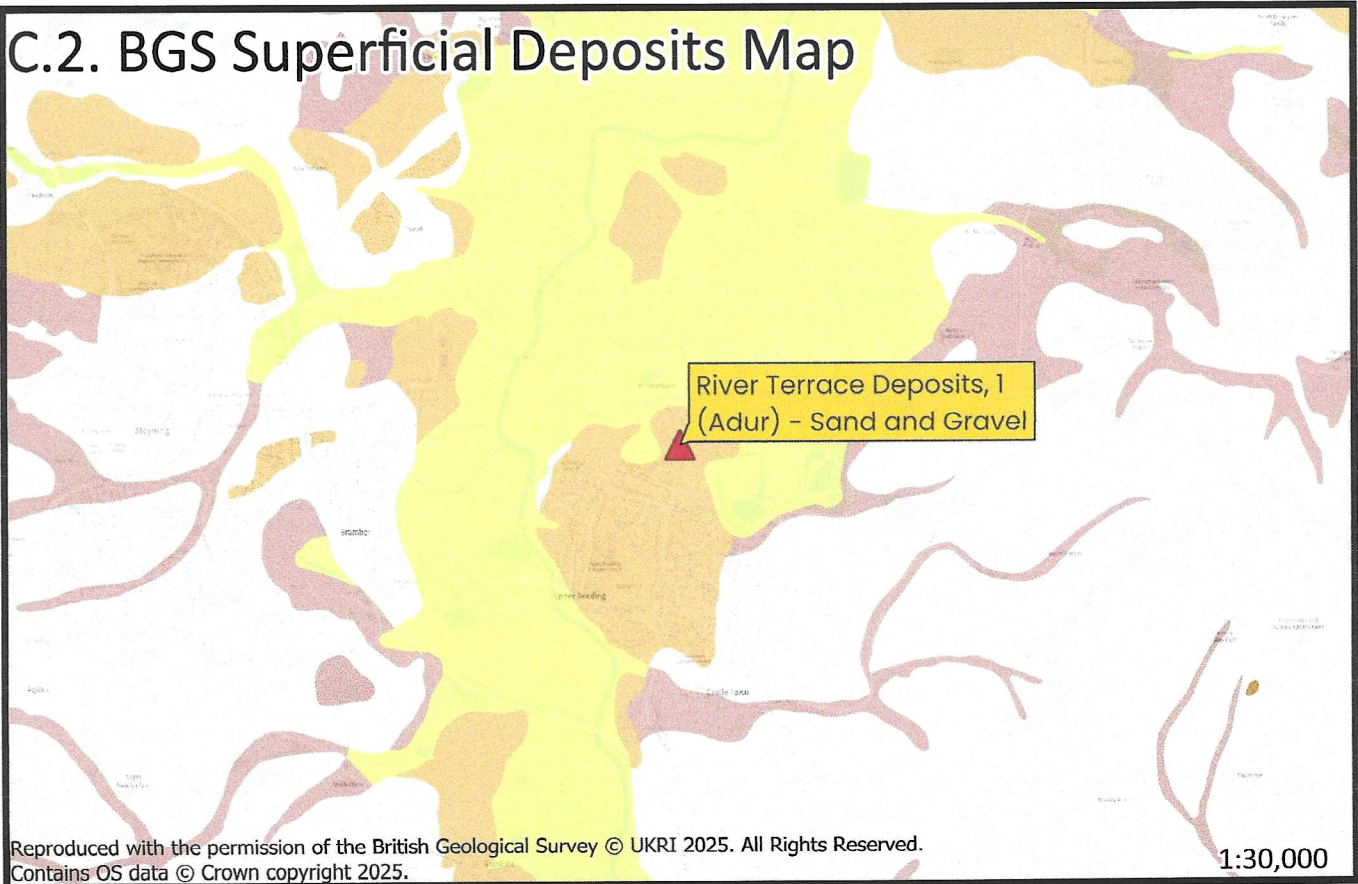
Appendix C



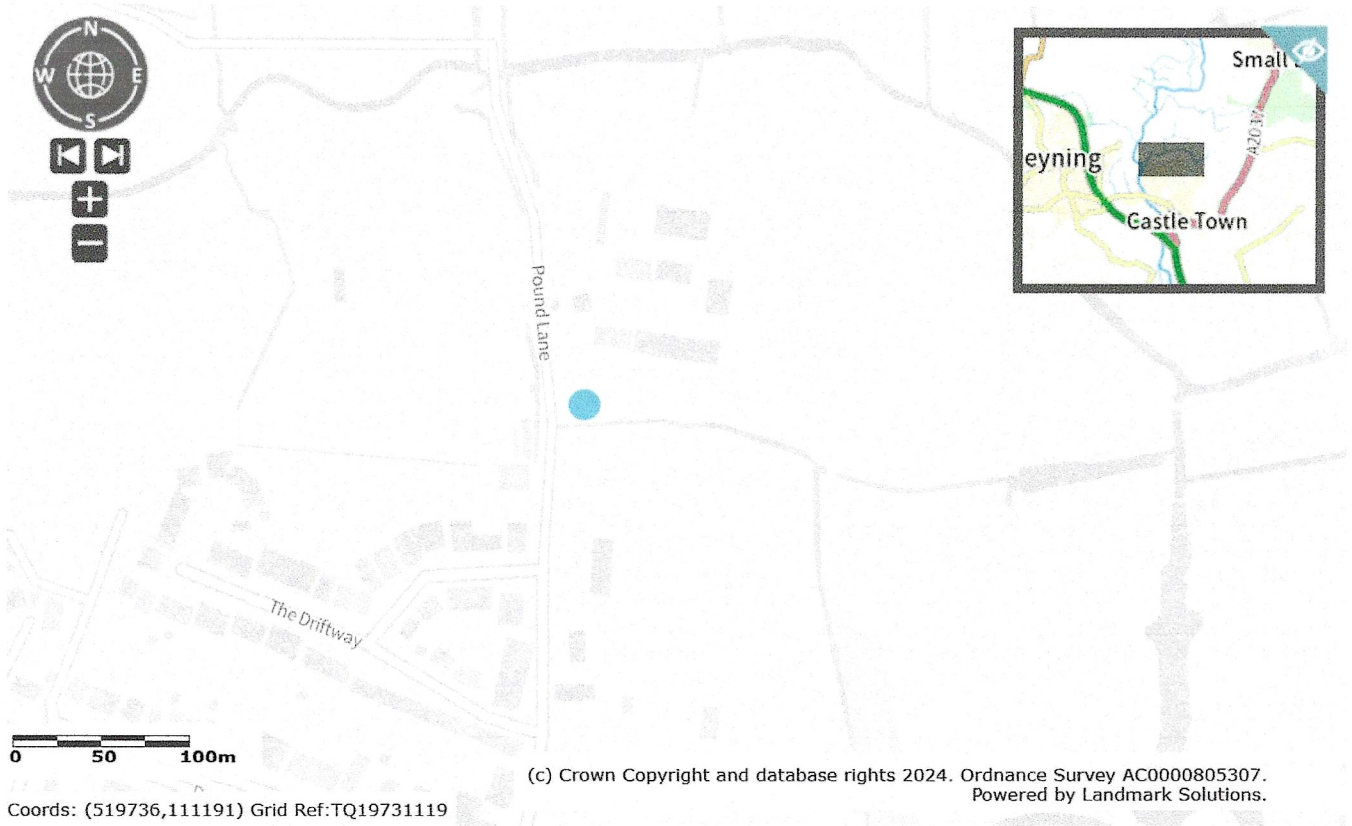
C.1. BGS Bedrock Map



C.2. BGS Superficial Deposits Map



C.3. Aquifer Designation Map



Site Check Results

Site Check Report Report generated on Thu Jan 02 2025
You selected the location: Centroid Grid Ref: TQ19731119
 The following features have been found in your search area:

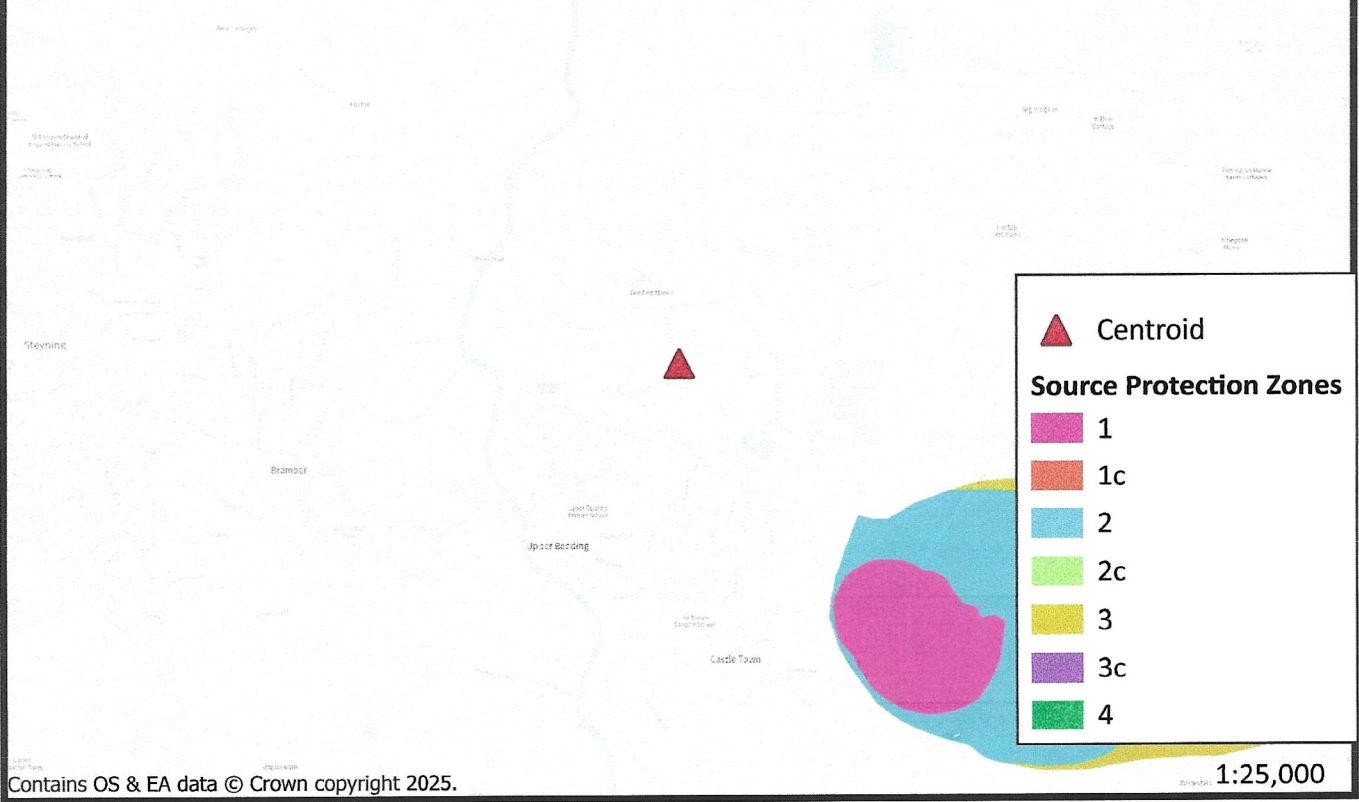
Aquifer Designation Map (Bedrock) (England)

Typology Principal

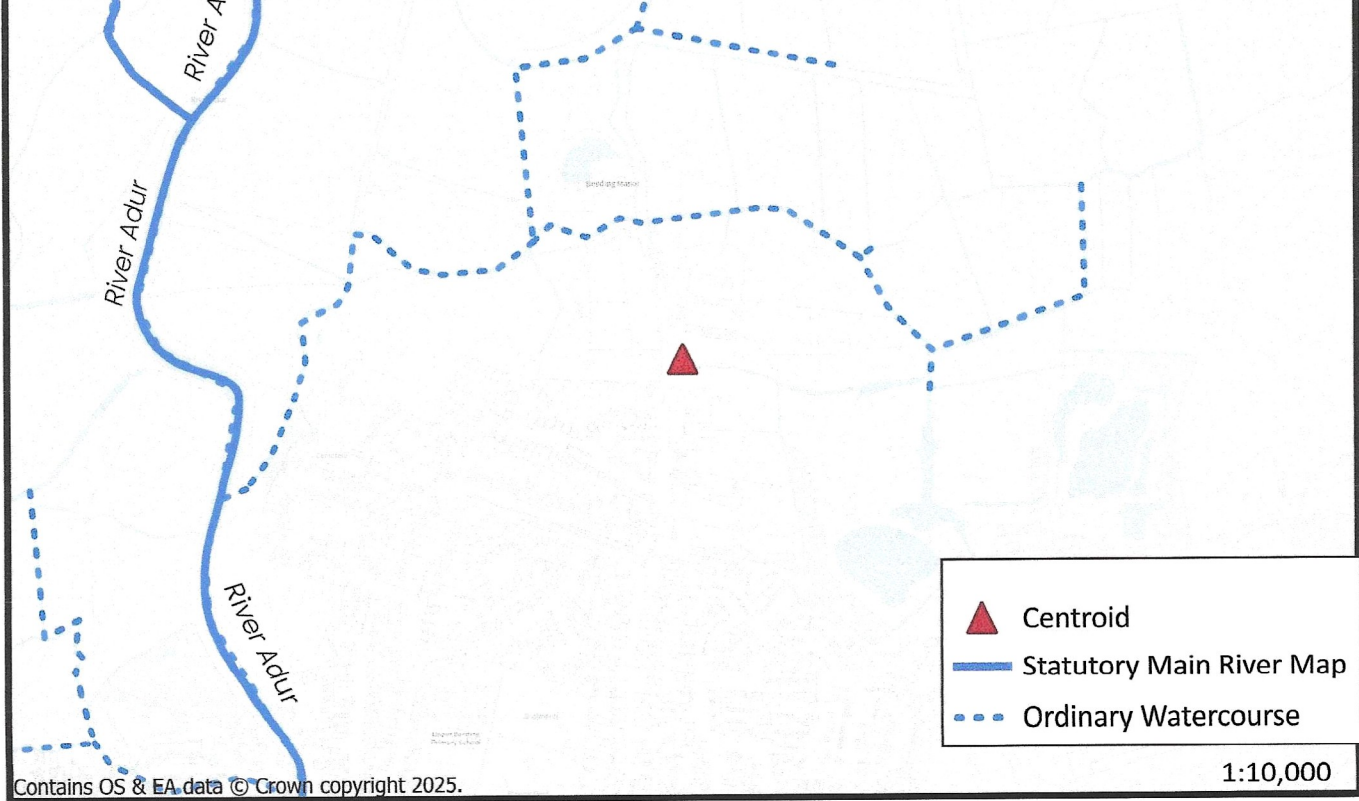
Aquifer Designation Map (Superficial Drift) (England)

Typology Secondary A

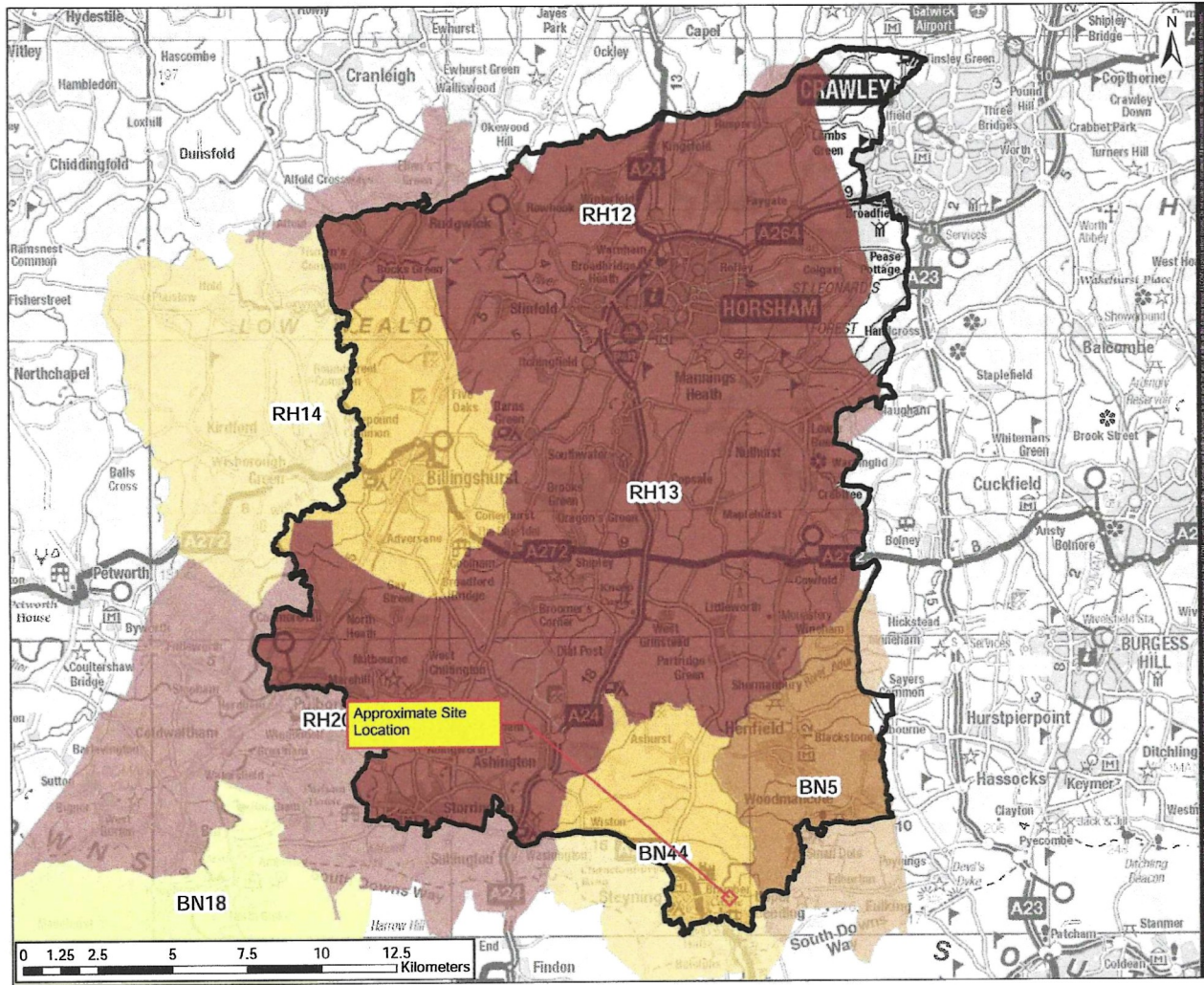
C.5. Source Protection Zone Map



C.6. Nearby Watercourses Map



Revision: 1 Drawn: AH Checked: LM/EC Approved: RM Date: 2024-08-05



AECOM

PROJECT
Horsham District Council
Level 1 Strategic Flood Risk
Assessment

CLIENT
Horsham District Council

CONSULTANT
AECOM Limited
3rd Floor Portwall Place
Portwall Lane
Bristol, United Kingdom
T +44 (0)117 315 0700

LEGEND

Horsham District Boundary

No. of sewer flooding incidents by postcode

- 2 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 120

NOTES

1: Southern Water have provided records of sewer flooding incidents in the Horsham District Council area over the 10 year period 2014-2024. For confidentiality reasons, the records have been reported at the postal district level, as reflected in the figure here.

Postal Boundaries © GeoLytics copyright and database right 2012. Contains Ordnance Survey data © Crown copyright and database right 2023. All rights reserved. Licence number 0100031673.

ISSUE PURPOSE

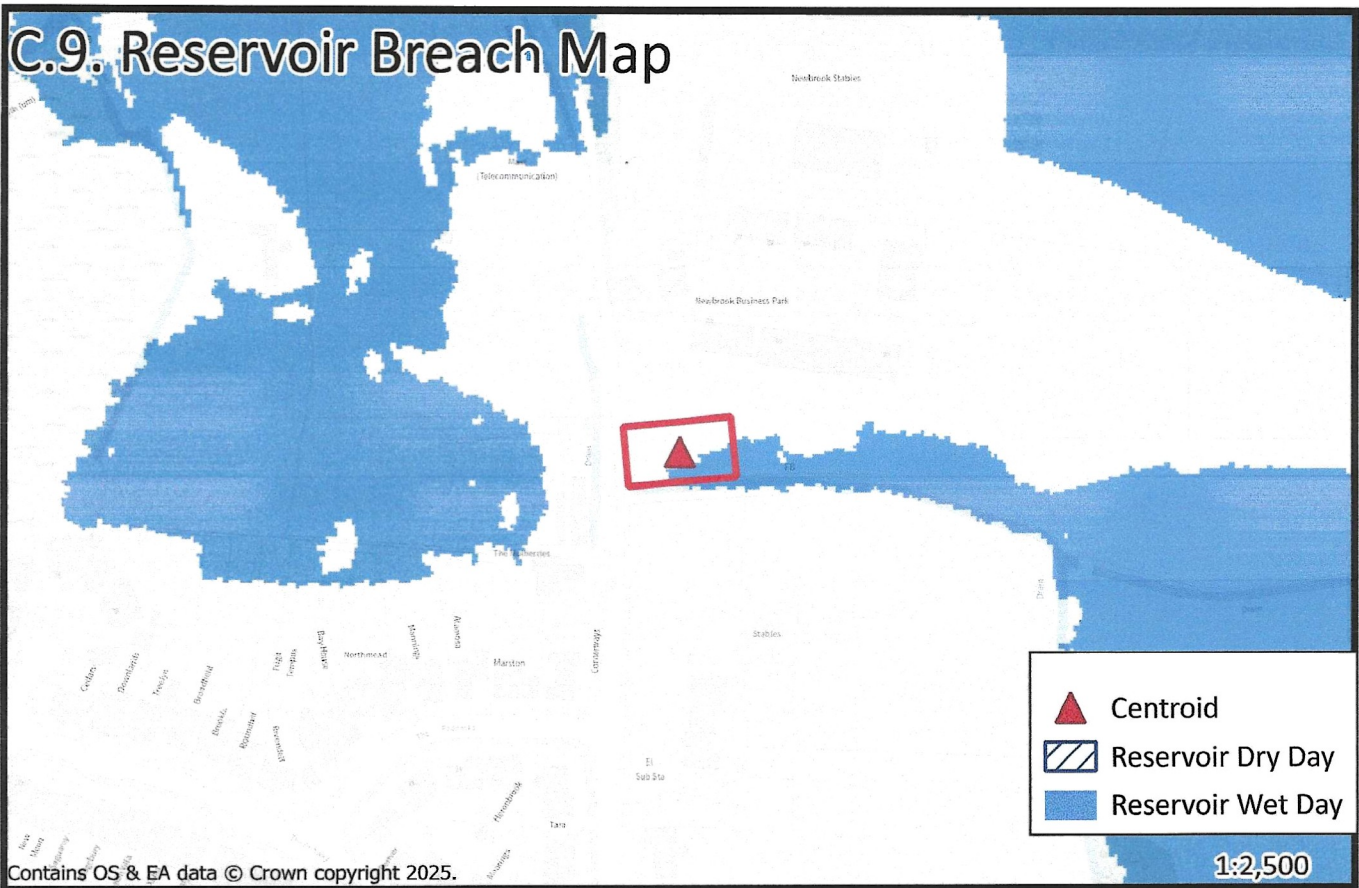
FINAL

PROJECT NUMBER
60730513

FIGURE TITLE
Sewer Flooding Incidents (2014-2024)

FIGURE NUMBER
Figure A5

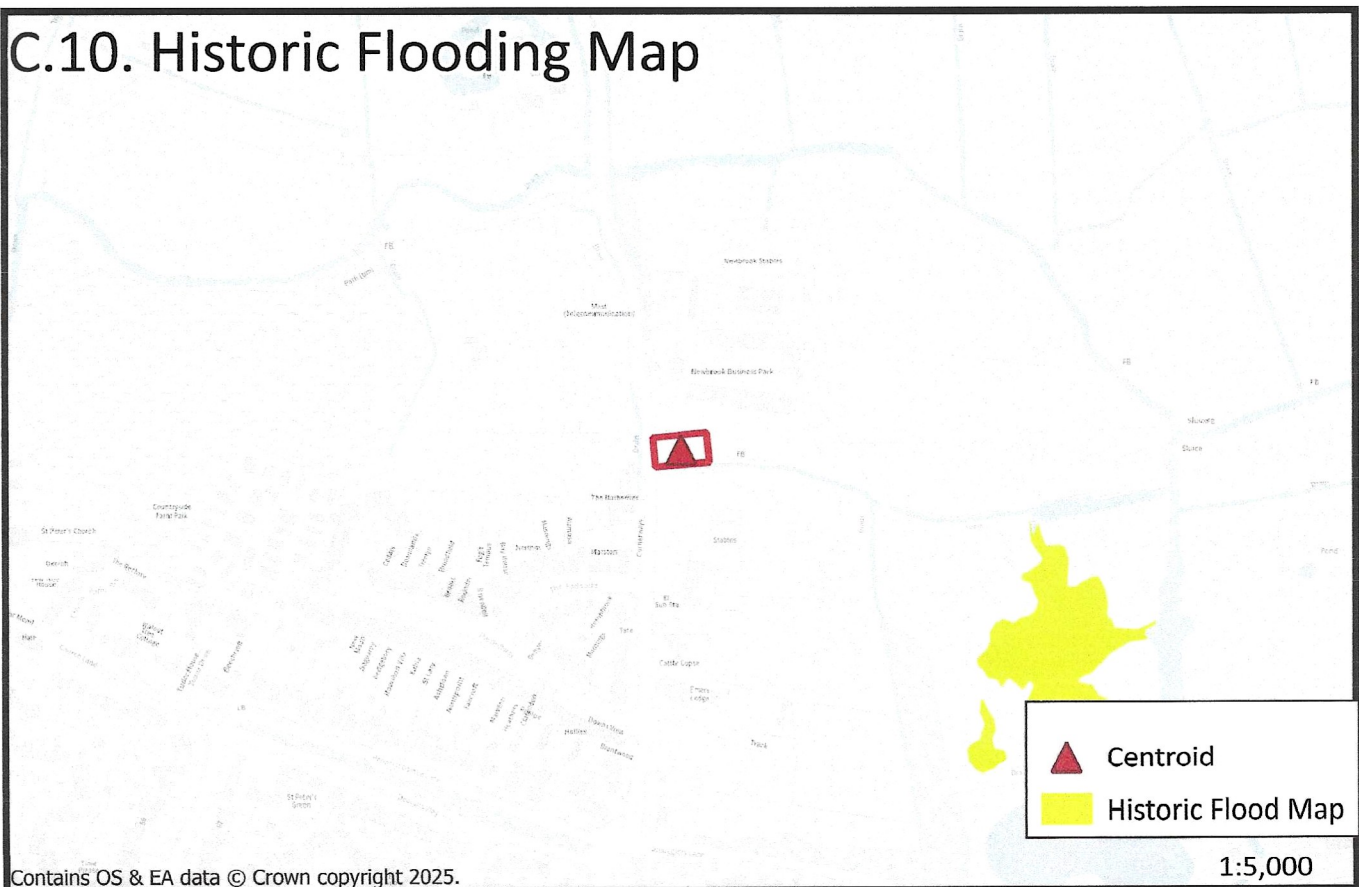
C.9. Reservoir Breach Map



Contains OS & EA data © Crown copyright 2025.

1:2,500

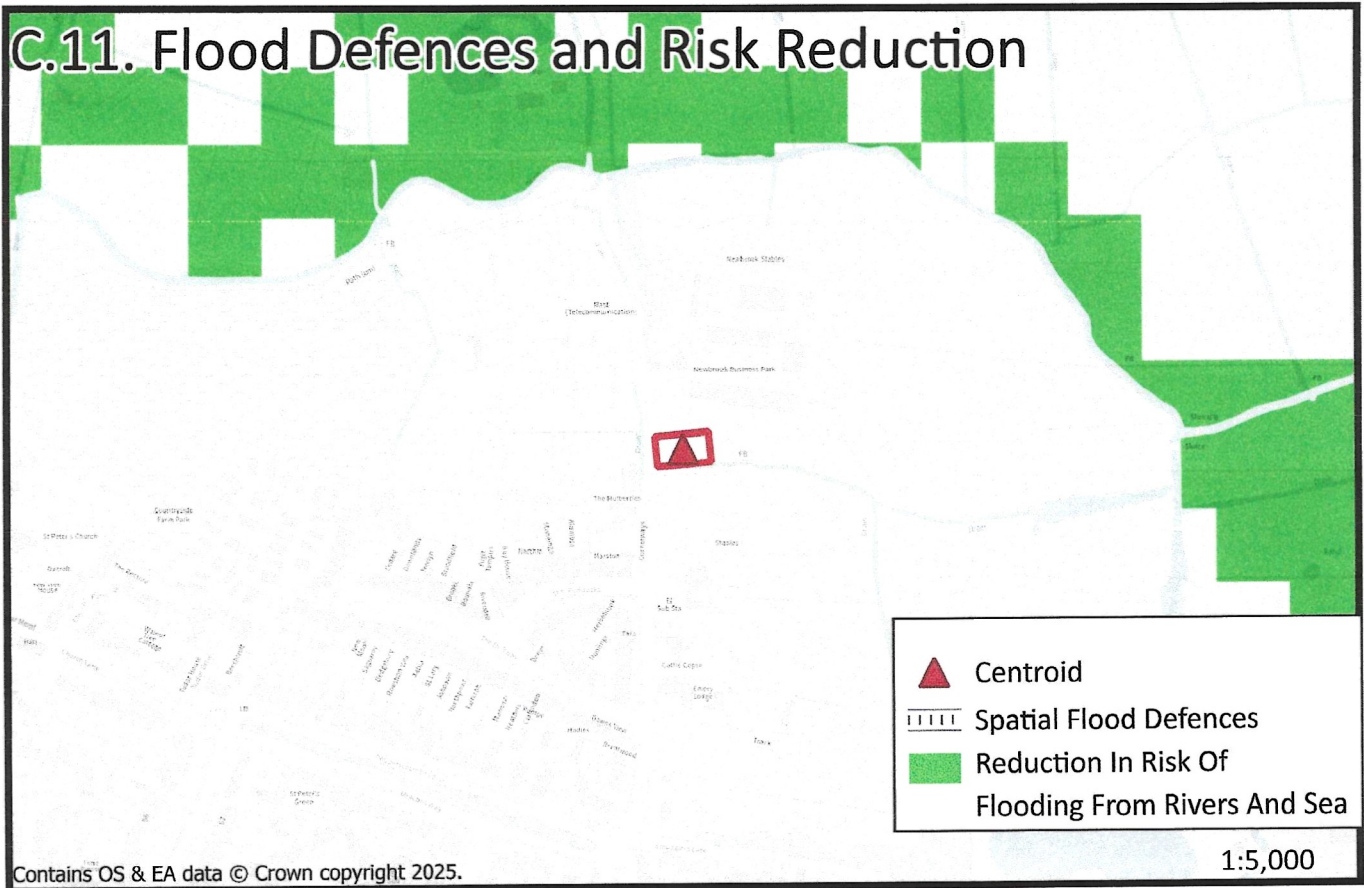
C.10. Historic Flooding Map



Contains OS & EA data © Crown copyright 2025.

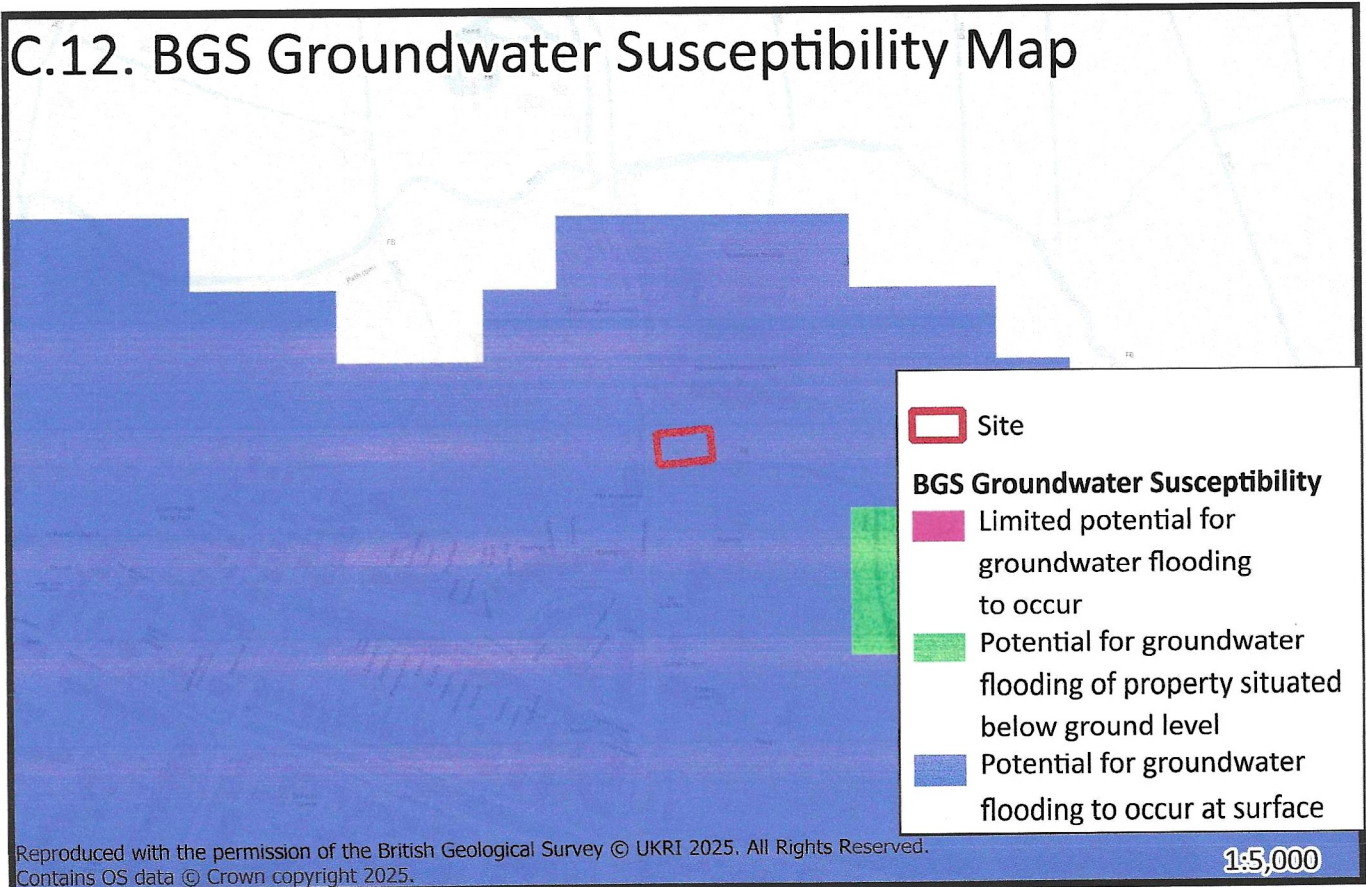
1:5,000

C.11. Flood Defences and Risk Reduction



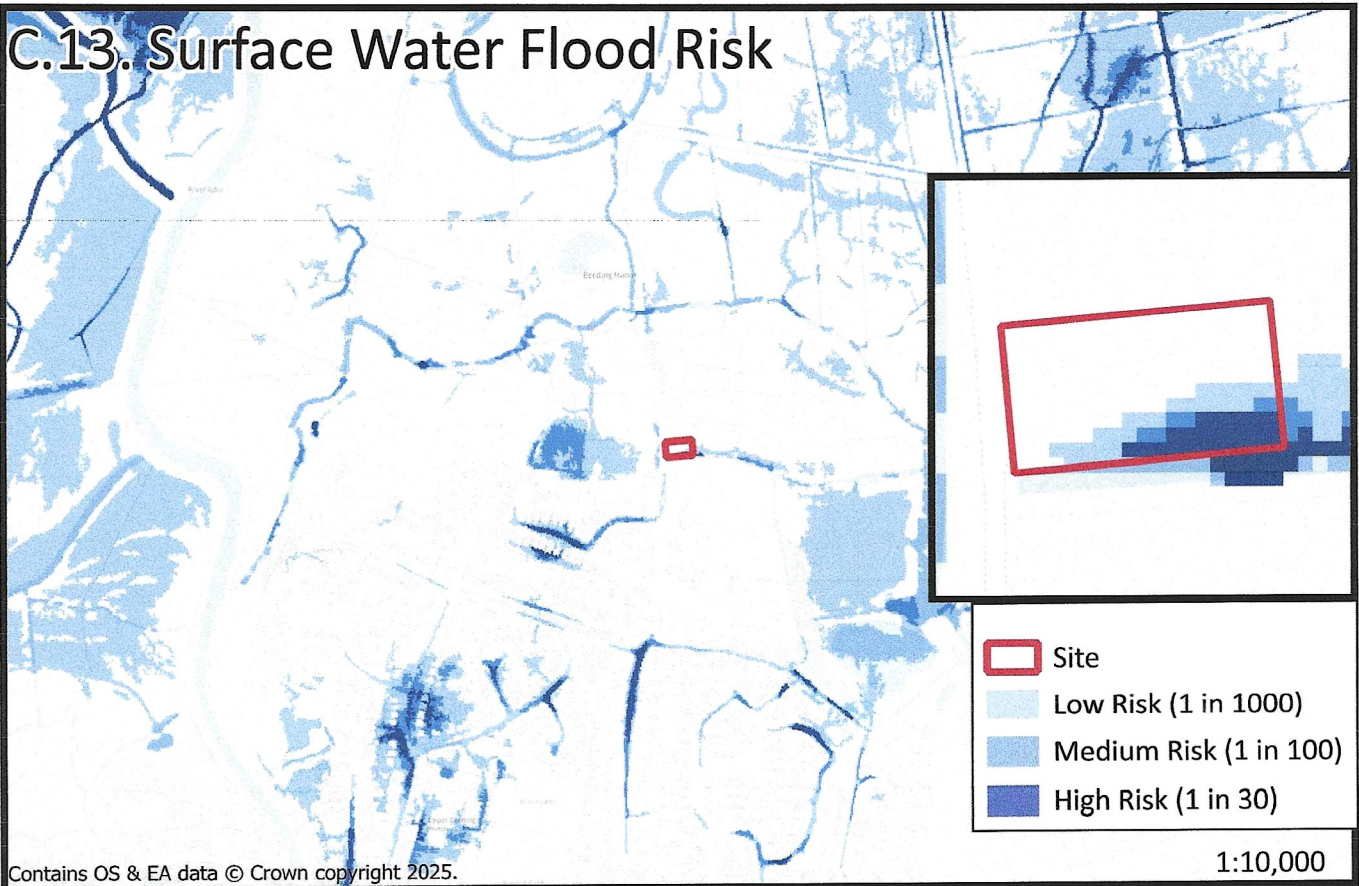
Contains OS & EA data © Crown copyright 2025.

C.12. BGS Groundwater Susceptibility Map

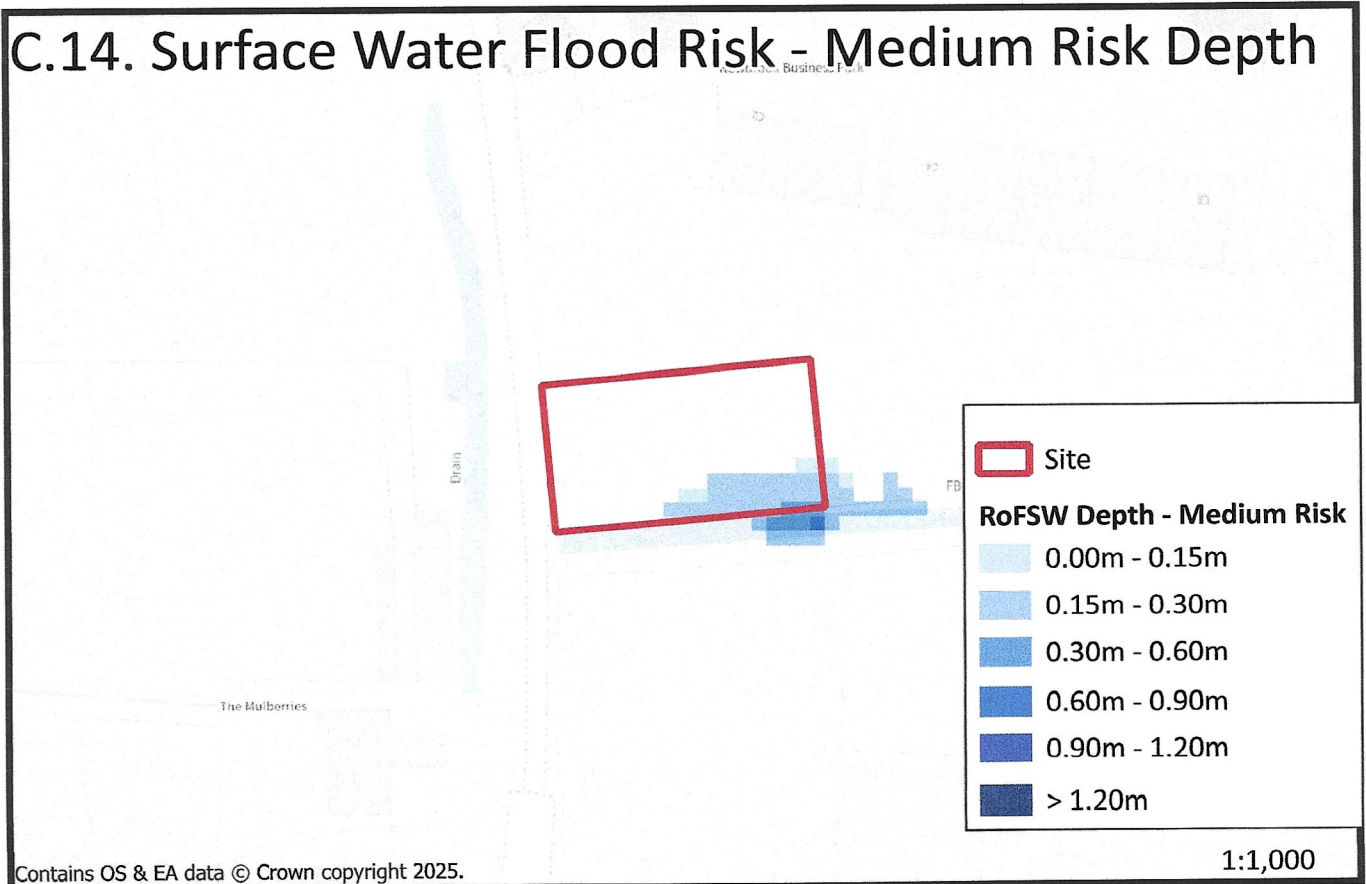


Reproduced with the permission of the British Geological Survey © UKRI 2025. All Rights Reserved.
Contains OS data © Crown copyright 2025.

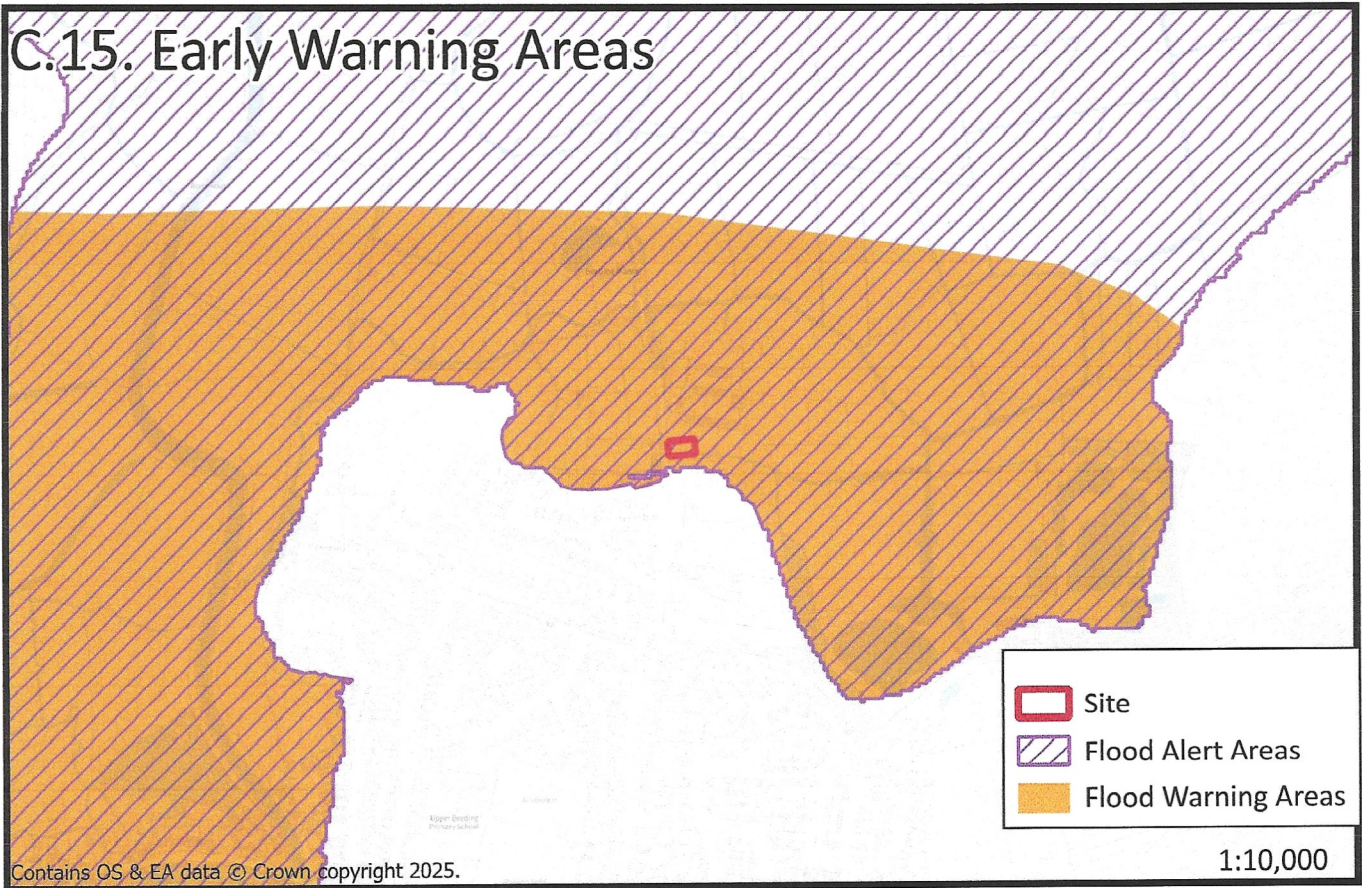
C.13. Surface Water Flood Risk



C.14. Surface Water Flood Risk - Medium Risk Depth



C.15. Early Warning Areas



Flood map for planning

Your reference	Location (easting/northing)	Created
0416	519737/111191	2 Jan 2025 18:30

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

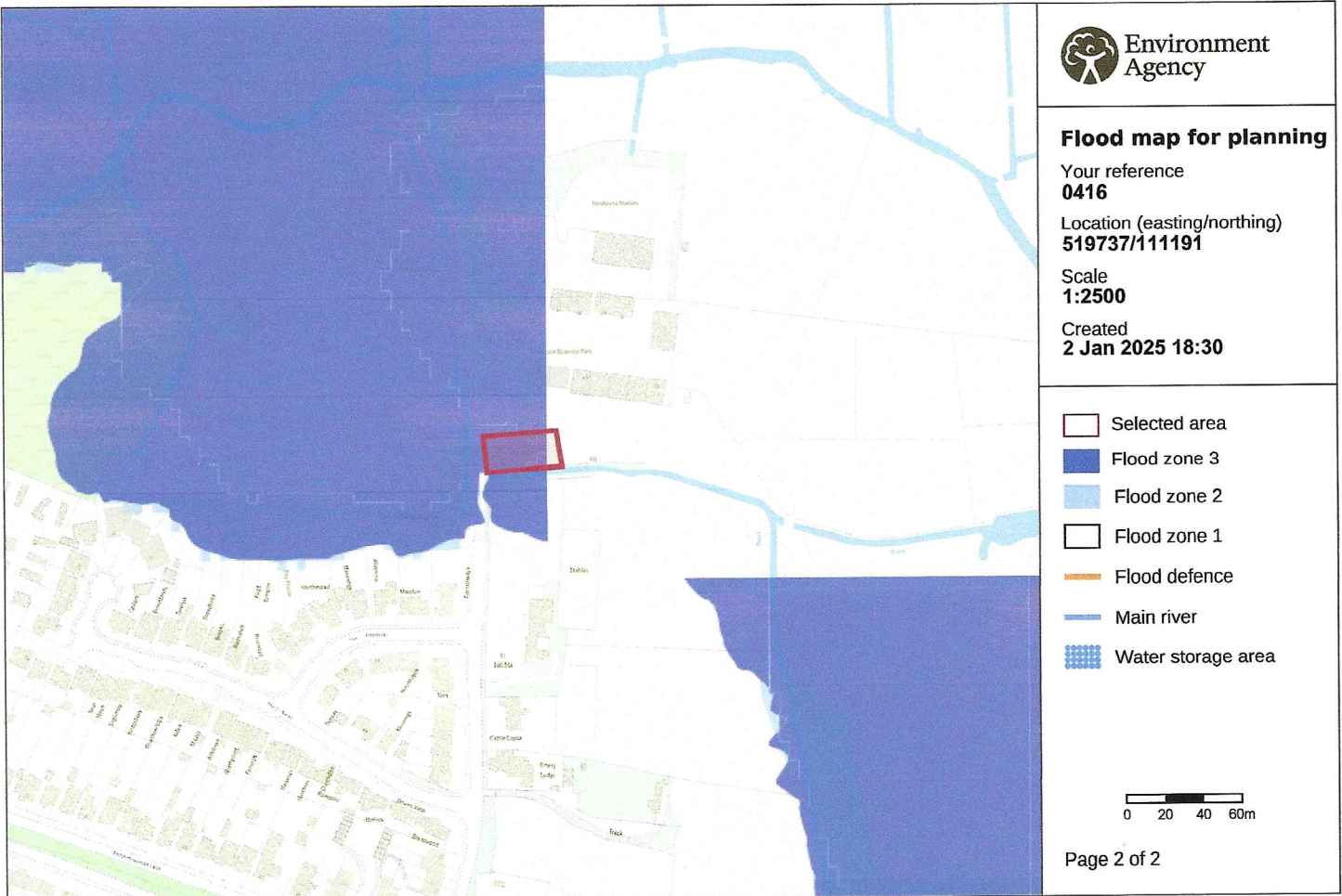
Notes

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.

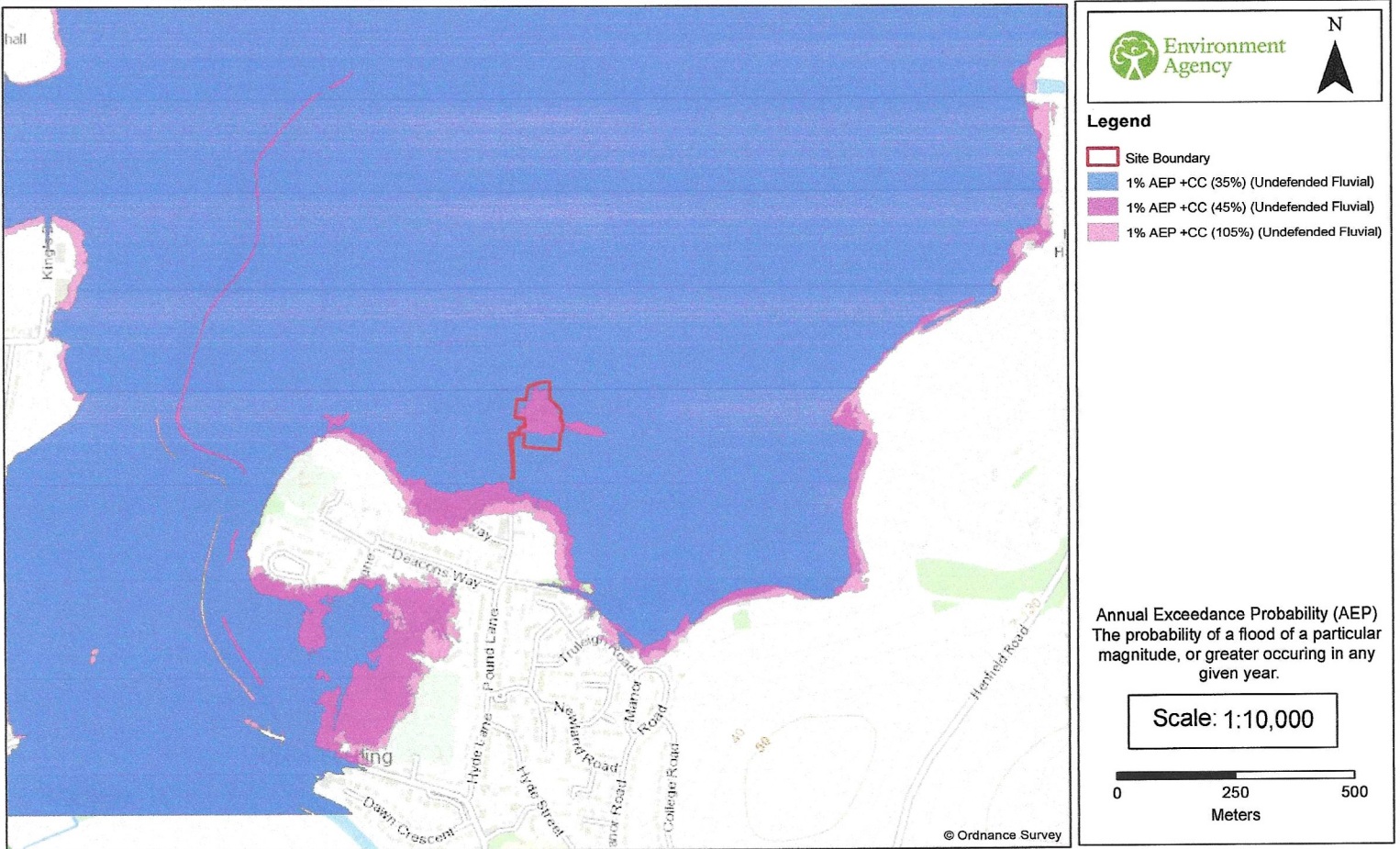
Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2024 OS AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>

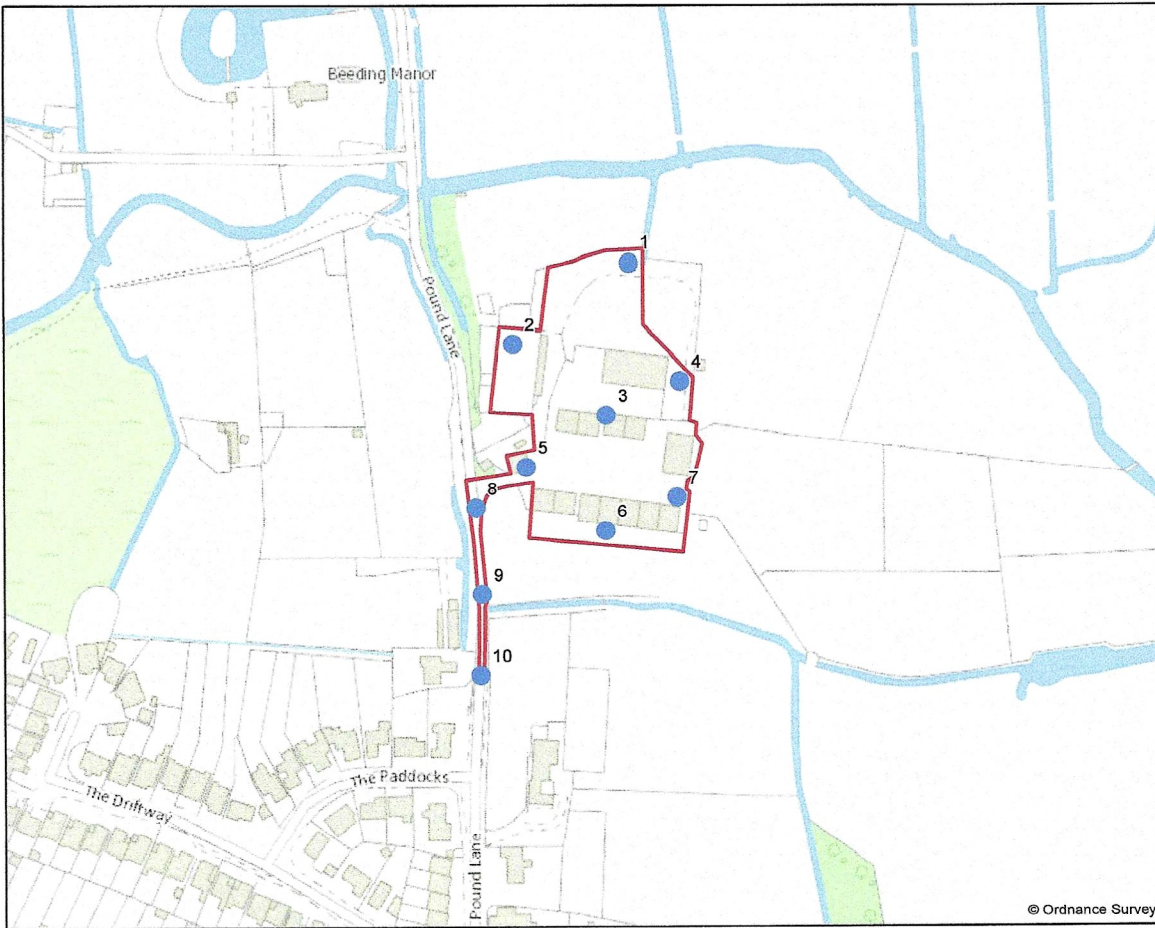


Appendix D

Modelled Flood Outlines (Climate Change Undefended). Centred BN44 3JD. Created 31/01/2023.



FRA Site Boundary & Node Points. Centred BN44 3JD. Created 31/01/2023.

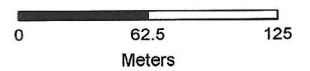


Legend

- Site Nodes
- Site Boundary

Annual Exceedance Probability (AEP)
The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:2,500



Product 4 Flood Risk Data Requested by: RIDA Reports Limited

Site: Newbrook Business Park, Pound Lane, Upper Beeding, Steyning, BN44 3JD

Table 1: Water Levels: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD		
	Eastings	Northings	Undefended Annual Exceedance Probability		
			1% +CC (35%)	1% +CC (45%)	1% +CC (105%)
1	519788	111344	4.56	5.07	5.66
2	519732	111306	4.07	4.57	5.16
3	519777	111272	-	4.54	5.13
4	519813	111289	4.12	4.63	5.22
5	519739	111248	-	4.50	5.09
6	519777	111217	4.08	4.59	5.18
7	519811	111233	3.93	4.44	5.03
8	519714	111228	4.03	4.53	5.12
9	519717	111186	4.03	4.54	5.13
10	519716	111147	4.04	4.55	5.14

Table 2: Water Depths: Fluvial Undefended

Node Ref	NGR		Modelled Flood Depths in Metres		
	Eastings	Northings	Undefended Annual Exceedance Probability		
			1% +CC (35%)	1% +CC (45%)	1% +CC (105%)
1	519788	111344	0.12	0.63	1.22
2	519732	111306	0.10	0.61	1.20
3	519777	111272	-	0.09	0.68
4	519813	111289	0.15	0.66	1.25
5	519739	111248	-	0.41	1.00
6	519777	111217	0.38	0.88	1.48
7	519811	111233	0.18	0.68	1.27
8	519714	111228	0.80	1.31	1.90
9	519717	111186	0.87	1.37	1.97
10	519716	111147	0.61	1.12	1.71

All levels taken from: Upper Adur Climate Change Modelling (2016) by JBA Consulting.

Produced on: 31/01/2023

Office Address: Guildbourne House, Chatsworth Road, Worthing BN11 1LD.
 Customer services line: 03708 506 506. Email: enquiries@environment-agency.gov.uk
www.gov.uk/government/organisations/environment-agency

* Climate Change allowances for this model only show the superseded 20% increase in flows. The current allowances should be checked here:
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>.

** The flood risk data provided is based on existing EA hydraulic models with an allowance for climate change. Please note the climate change allowances provided are not up to date. These were updated on 17 December 2019.
You should refer to '[Flood risk assessments: climate change allowances](#)' for the most up to date allowances. You will 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.
There is no additional information or health warnings for these levels/depths or the model from which they have been produced.

