



**RESIDENTIAL EXTENSION
4 WASH LANE CORNER
GREAT FINBOROUGH, STOWMARKET
SUFFOLK**

FLOOD RISK ASSESSMENT

Date:

October 2022

GHB Reference:

203/2022/FRA

Revision:

P3

Status:

PLANNING

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Flood Risk Assessment (FRA) Checklist

This document should be attached to the front of the Flood Risk Assessment (FRA) issued to Local Planning Authorities (LPA) in support of a development proposal which may be at risk of flooding. This document is not a substitute for a FRA. Please note, under our responsibilities as a statutory consultee we will review any submitted FRA only in respect to fluvial and tidal risk. Your FRA should also consider other sources of flooding such as surface water, drainage, and ground water flooding.

1. Development Proposal

Site name	4 Wash Lane Corner, Gt Finborough, Suffolk, IP14 3BJ
National Grid Reference (NGR)	TM 030584
Flood Risk Assessment	Reference/Title: 203/2022/FRA P1 Date: September 2022
Existing site use & vulnerability classification	More Vulnerable (Residential)
Proposed site use & vulnerability classification	More Vulnerable (Residential) Minor Development

2. Flood Risk

Flood Zone(s) affecting the site/property	Flood Zones 2 and 3
Sources of flooding affecting the site	Fluvial, Pluvial
Have you considered flood storage compensation?	No

3. Please provide a node map and accompanying table in the Flood Risk Assessment similar to the example given (see Appendix A). You should clearly demonstrate the highest and most representative flood levels for your proposed development. For example, if it is a small extension (< 250 square metres) then approximately 5-10 nodes would be sufficient. For larger sites, approximately 10 to 20 nodes would be appropriate. Refer to Appendix B and D.

4. Mitigation

Finished floor levels (in m AOD) for each proposed floor.	Yes - 32.24m AOD to match existing
Have you considered a freeboard for these Finished Floor Levels?***	
Drawing reference showing Finished Floor Levels for proposed development	Refer to Appendix E
Have you considered suitable internal and external access for safe refuge above the flood level?	Yes

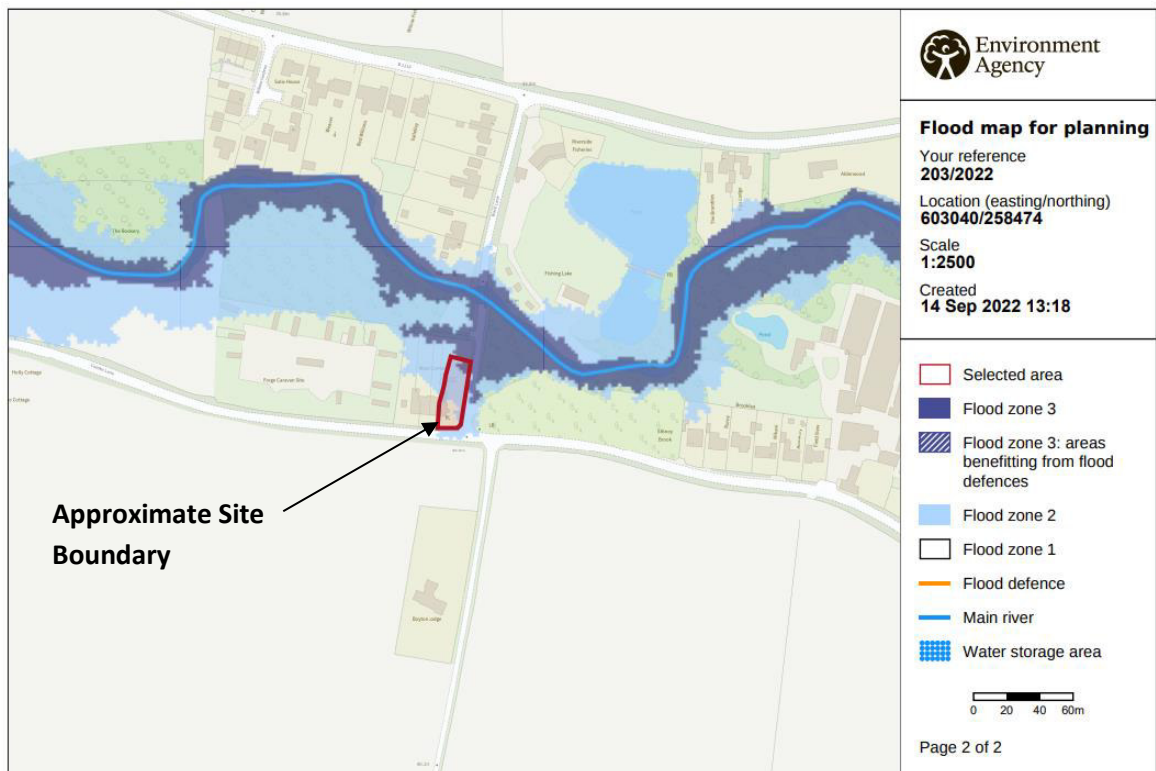
5. Proximity to the watercourse/ flood defence/ culvert

Are the proposed developments on, over, under or within 8 metres of a fluvial main river or 16 metres of a tidal main river or flood defence?	No If yes, please provide a cross section drawing in your planning application showing the distance of the proposed development in relation to the watercourse/flood defence/culvert. If yes, this will require a Flood Risk Activity Permit.
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Map Many of our flood datasets are available online:
[Flood Map For Planning](#) ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#), [Risk of Flooding from Rivers and Sea](#), [Historic Flood Map](#), [Current Flood Warnings](#))

1.0 INTRODUCTION

- 1.1. This flood risk assessment is being submitted to accompany a planning application for a residential extension at 4 Wash Lane Corner, Great Finborough, Suffolk. A site location plan is attached in **Appendix A**.
- 1.2. The report is produced for the sole use by Mr & Mrs Dykes.
- 1.3. The report includes a thorough review of commercially available flood risk and Environment Agency (EA) data indicating potential sources of flood risk to the site.
- 1.4. The information provided within this report is based on the best available data currently recorded or provided by a third party. The accuracy of this report is therefore not guaranteed and does not obviate the need to make additional appropriate searches, inspections and enquiries.
- 1.5. The National Planning Policy Framework (NPPF, July 2021), Section 14 (Meeting the challenge of climate change, flooding and coastal change), Paragraph 159 states that:
"Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere."
- 1.6. The NPPF recommends the Environment Agency (EA) Flood Maps as a starting point for Flood Risk Assessment. An extract from the EA Flood maps is reproduced in Figure 1.1 below.



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Figure 1.1 – Environment Agency Flood Map (Rivers and Seas)

- 1.7. The Environment Agency has produced standing guidance for developments dependent on their size and location. As can be seen from Figure 1.1 above, the site is located within Flood Zones 2 and 3, an area with a high probability of flooding.

- 1.8. Industry best practice requires assessment of all flooding sources to be carried out. Despite this document having now been superseded by the NPPF, Figure 3.2 of the “PPS25: Development and Flood Risk” (PPS25) Practice Guide lists five key sources of flooding:
 - i.* Fluvial (refer to Section 5);
 - ii.* Tidal (refer to Section 6);
 - iii.* Pluvial (refer to Section 7);
 - iv.* Groundwater (refer to Section 8); and
 - v.* Infrastructure Failure (refer to Section 9).

2. POLICY CONTEXT

- 2.1. The purpose of the planning system is to contribute to the achievement of sustainable development – *NPPF, Paragraph 7*
- 2.2. At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development which does not change the statutory status of the development plan as the starting point for decision making – *NPPF, Paragraph 12*
- 2.3. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere – *NPPF, Paragraph 159.*
- 2.4. The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding – *NPPF, Paragraph 162*
- 2.5. Following the Sequential Test, both elements of the Exception Test will have to be passed for development to be allocated or permitted – *NPPF, Paragraph 165*
- 2.6. Babergh and Mid Suffolk Level 1 Strategic Flood Risk Assessment Final Report, August 2020 prepared by JBA Consulting.
- 2.7. The Mid Suffolk Core Strategy (2008), Policy CS 4.
- 2.8. The Mid Suffolk Core Strategy Focused Review (2012) Policies FC1 and FC1.1.
- 2.9. The Environment Agency standing advice guidance for minor extensions and vulnerable developments within zones 2 and 3.
- 2.10. Suffolk County Council, as lead local flood authority, document Suffolk Flood Risk Management Strategy advises on the standards to be used at a local level

3. EXISTING SITE INFORMATION

- 3.1. The site is brownfield with an area of approximately 590m², located at the corner of Combs Lane and Wash Lane in Great Finborough, Suffolk. A site location plan is attached in **Appendix A**.
- 3.2. The site comprises an existing end of terrace residential dwelling with associated garage, driveway access, garden shed and garden. The site is bound by a residential dwelling (No. 3) to the west, a fence and residential garden to the north, Wash Lane to the east and Combs Lane to the south. The existing site layout is shown on the topographical survey in **Appendix B**.
- 3.3. The site can be located from the following information:
 - i. Postcode: IP14 3BJ
 - ii. Grid Reference: TM 030584
 - iii. Elevation: The site levels range between approximately 32m AOD at the south-west to 31.4m AOD at the north-east, sloping at an approximate gradient of 1:68. Refer to the topographical drawing in **Appendix B** for the site levels.
- 3.4. Based on the topographical survey the existing ground finished floor level is 32.24m AOD within the main dwelling, and 32.03m AOD within the existing single storey extension to the north.
- 3.5. The nearest Main River is the River Rattlesden (River Rat) located approximately 30m north of the site, flowing west to east towards the River Gipping (refer to Figure 1.1). There is a lake located approximately 100m north-east of the site (Riverside Fisheries) and Rattlesden Flood Reservoir is located approximately 500m west of the site.
- 3.6. The BGS 1:50,000 scale drift map in Figure 3.1 shows the form of the superficial deposits.

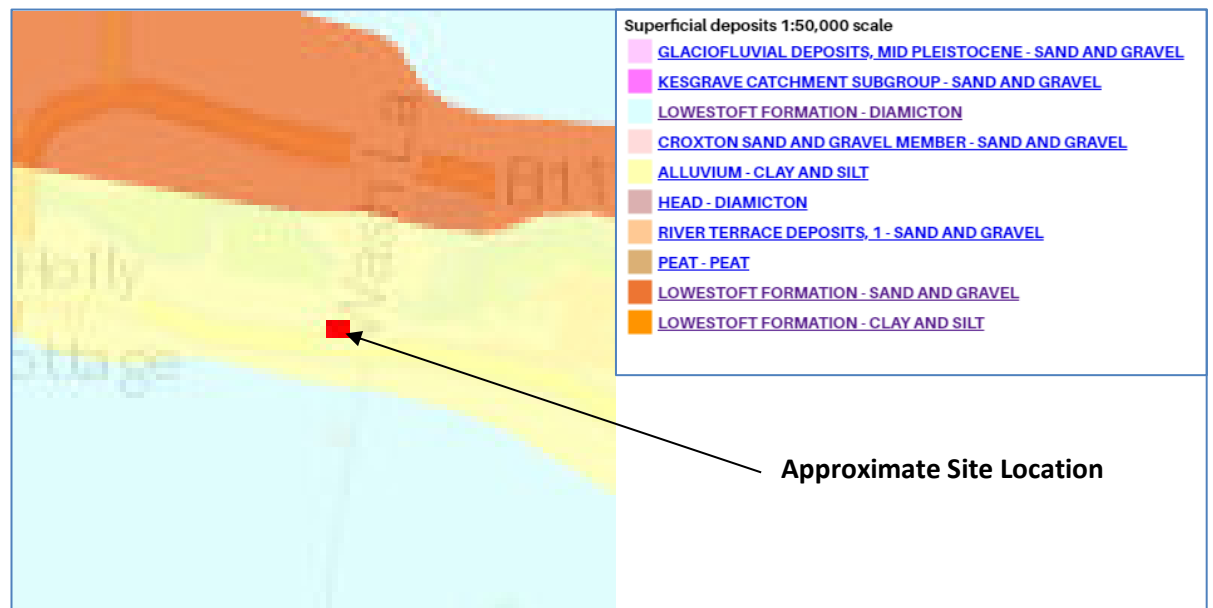


Figure 3.1 - BGS 1:50,000 Scale Superficial Geology Map

- 3.7. The BGS records describe the geology as:
 - i. Superficial: Alluvium - Clay and Silt
 - ii. Bedrock: Crag Group - Sand
- 3.8. Environment Agency Aquifer (Bedrock Geology) mapping shows that the site is located over a Principal Aquifer.
- 3.9. Environment Agency Superficial Drift Geology Aquifer Designations mapping information shows that the site is over a Secondary A Aquifer; permeable layers capable of supporting water

supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

4. PROPOSED DEVELOPMENT

- 4.1. The development comprises a two-storey extension to the existing dwelling, providing a Kitchen/Dining room at ground floor level and two bedrooms and an ensuite at first floor level. The proposed area of the extension is approximately 42m². The main access to the dwelling will be relocated to the existing north extension, and bi-fold doors are to be located within the north elevation of the Kitchen/Dining area. The proposed plans and elevations are attached in **Appendix C**.
- 4.2. The proposed outbuilding is replacing an existing outbuilding and is open to the north half, therefore this has no impact on the predicted flooding.
- 4.3. Based on EA guidance, the development is considered to be Minor Development with the extension classified as *'householder development: For example; sheds, garages, games rooms etc within the curtilage of the existing dwelling, in addition to **physical extensions to the existing dwelling** itself. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling eg subdivision of houses into flats.'*
- 4.4. The development is classified as **More vulnerable**; Buildings used for **dwelling houses**, student halls of residence, drinking establishments, nightclubs and hotels.
- 4.5. The Environment Agency (EA) provide Standing Guidance for minor extensions within Flood Zones 2 and 3.
- 4.6. The design life of the development is 100 years.

5. FLUVIAL FLOODING

- 5.1. Fluvial flooding is the flooding associated with rivers. This can take the form of:
 - iv. Inundation of floodplains from rivers and watercourses
 - v. Inundation of areas outside the floodplain due to influence of bridges, embankments and other features that artificially raise water levels
 - vi. Overtopping of defences
 - vii. Breaching of defences
 - viii. Blockages of culverts
 - ix. Blockages of flood channels or corridors
- 5.2. The Environment Agency (EA) have produced flood maps that show the risk of flooding from Rivers and Seas; the EA Flood Map in Figure 1.1 shows the site is located within Flood Zones 2 and 3 where the likelihood of fluvial flooding is greater than 1%AEP.
- 5.3. Flood data was requested from the Environment Agency and a copy of their response and attached flood information is attached in **Appendix D**.
- 5.4. The EA has provided modelled fluvial flood level information based on the Gipping_2020 Mott MacDonald 1 October 2020 model, relating to the following scenarios;
 - Defended Fluvial
 - Defences Removed Fluvial
 - Defended Climate Change Fluvial
 - Defences Removed Climate Change Fluvial

5.5. The National Planning Policy Framework (NPPF) sets out how the planning system should help to minimise vulnerability and provide resilience to the impacts of climate change. The Environment Agency (EA) provides climate change allowances for peak river flow by river basin management district, and the allowances applicable to this site are shown in Figure 5.1. The EA advises that for more vulnerable development in Flood Zone 3a, the central allowance should be used, which for this site is 19%.

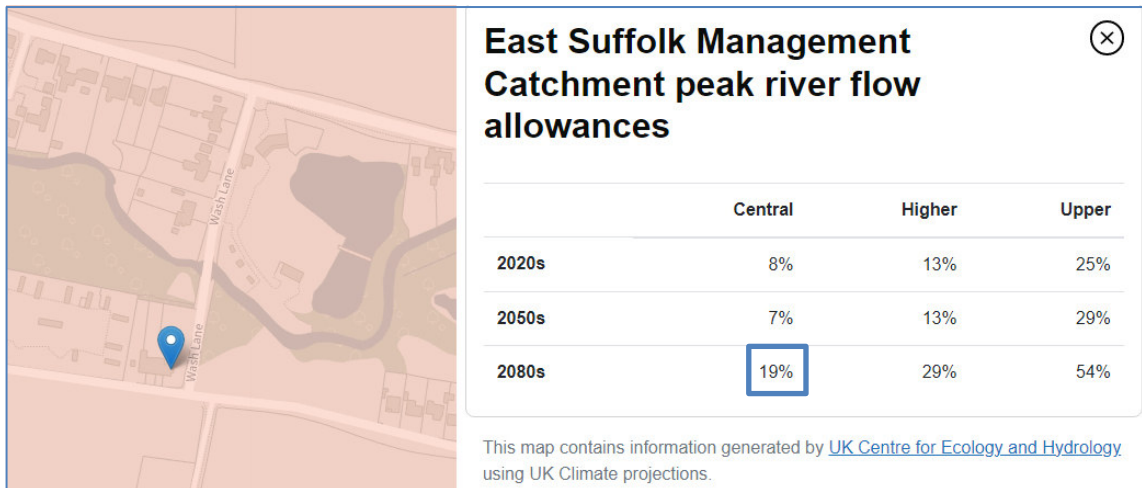


Figure 5.1: Environment Agency peak river flow allowances

5.6. EA flood level data is provided for node locations and the nodes relating to the site are number 7 within the channel model and node 13 for the model extending to the area. Based on this, the modelled fluvial flood level data is summarised in Table 5.1 below. It can be seen that the flood level in the 'Defended' scenario is higher than for the 'Defences Removed' in the 0.1% plus climate change scenario. It is also noted that the climate change allowance used in this report is 25% which is greater (more conservative) than the EA requirement of 19% (Figure 5.1).

Scenario	1% AEP	1% AEP plus 25% CC	0.1% AEP	0.1% AEP plus 25%CC
Defended (Node 7 within river channel)	31.43m AOD	-	31.89m AOD	
Defences Removed plus climate change allowance (Node 7 within river channel)	-	31.62m AOD	-	32.09m AOD
Defended (Node 13 at site)	No flooding	-	32.00m AOD	-
Defended plus climate change (Node 13 at site)	-	No flooding	-	32.21m AOD

Table 5.1: Summary of EA modelled flood levels at Node 7 (within channel) and Node 13 (at the site)

5.7. The flood levels summarised above are shown on the drawing in **Appendix E** in relation to the existing site topography and proposed development layout. The Node 7 level for the 1% AEP

plus 25% CC also confirms the Node 13 data for the same event, which shows No Flooding at the Extension location.

- 5.8. It can be seen from the topographical survey that the existing ground finished floor level (FFL) of the main building is 32.24m AOD and 32.03 for the existing north extension. It is proposed that the FFL of the extension will be 32.24m AOD to match the existing; this is 620mm higher than the 1% AEP plus 25% climate change level and 240mm higher than the 0.1% AEP. The existing floor level in the location of the proposed main entrance is 410mm higher than the 1% AEP plus 25% climate change flood level. Therefore, the fluvial risk to the existing building is considered to be low.
- 5.9. The EA has advised there are flood defences within the vicinity of the site and have provided a map locating these and further asset information has been obtained from the EA website (refer to **Appendix D**). The defences upstream of the site comprise the Open Channel (River Rattlesden) and the Rattlesden Flood Storage reservoir embankments; the records describe the channel in 'Fair' condition and the embankments of 'Adequate' condition and are all maintained by the Environment Agency.
- 5.10. A drawing showing the proposed development, flood extents and flow paths is attached in **Appendix E**.

6. TIDAL FLOODING

- 6.1. Tidal flooding is a risk of water levels from the sea or an estuary exceeding the normal tidal range. This can take the form of:
 - i.* Overtopping of defences
 - ii.* Breaching of defences
 - iii.* Other flows (fluvial surface water) that could pond due to tide locking
 - iv.* Wave action
- 6.2. As outlined in 5.2, the Environment Agency Flood Map for Rivers and Seas shows the site is located within Flood Zones 2 and 3, however the site is located too far from the sea to be affected by tidal flooding.

7. PLUVIAL FLOODING

- 7.1. Pluvial flooding is a risk of overland flows and ponding associated with extreme rainfall events. This can take the form of:
 - i.* Sheet runoff from adjacent land (urban or rural)
 - ii.* Surcharged sewers
- 7.2. As rain falls everywhere within the United Kingdom, there will always be a residual risk of flooding from extreme rainfall events.
- 7.3. The Environment Agency (EA) has produced maps with risk classifications that show the risk of flooding from surface water runoff and this is shown in Figure 7.1. The Environment Agency risk classifications are reproduced in Table 7.1.

Risk Classification	Probability	
Very Low	<0.1% AEP	(<1:1000)
Low	0.1% AEP - 1% AEP	(1:1000 to 1:100)
Medium	1% AEP - 3.3% AEP	(1:100 to 1:30)
High	>3.3% AEP	(>1:30)

Table 7.1: Pluvial Flood Risk Classification

- 7.4. Figure 7.1 below shows that the site is at Low to High risk of flooding with the higher risk of flooding at the north-east part of the site, with Low to Medium Risk within the area of the proposed extension; this correlates with the site topography.
- 7.5. An extract for the area showing the extent of flooding in the Medium Risk Scenario is reproduced in Figure 7.2. This shows the area in the location of the proposed extension is not at risk of surface water flooding, with the immediate perimeter of the proposed extension at risk of flooding below 300mm depth increasing to 300mm to 900mm depth to the east and north-east. The FFL of the north part of the building with the proposed main access is



Figure 7.1: Surface water flood risk

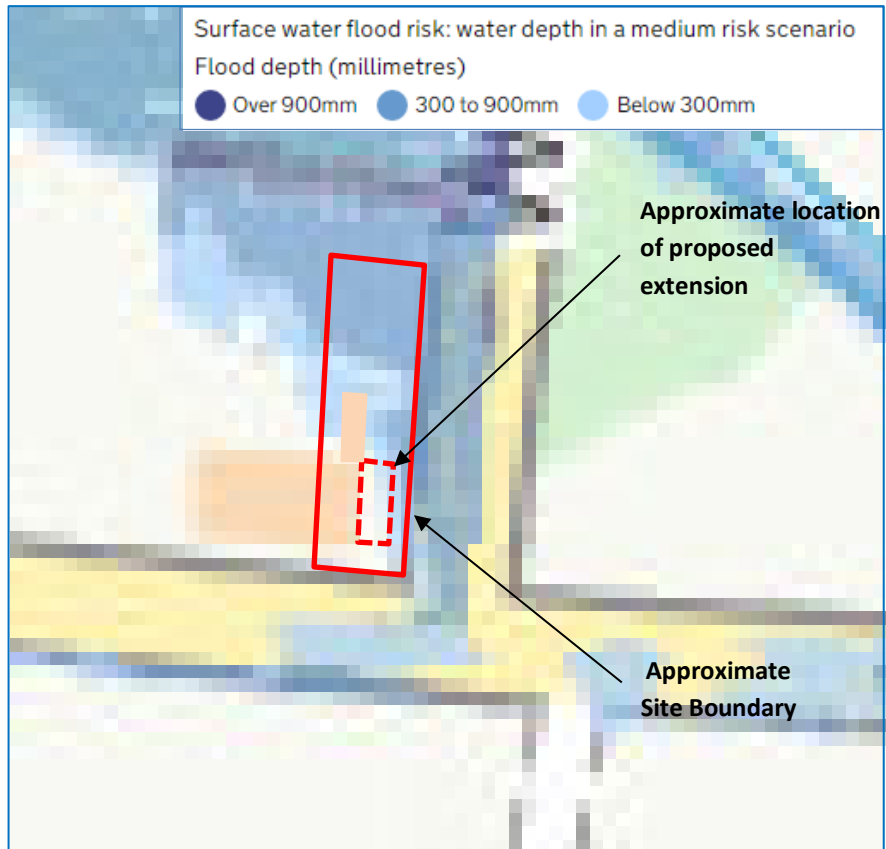


Figure 7.2: Surface water flooding extents 1% to 3.33% AEP

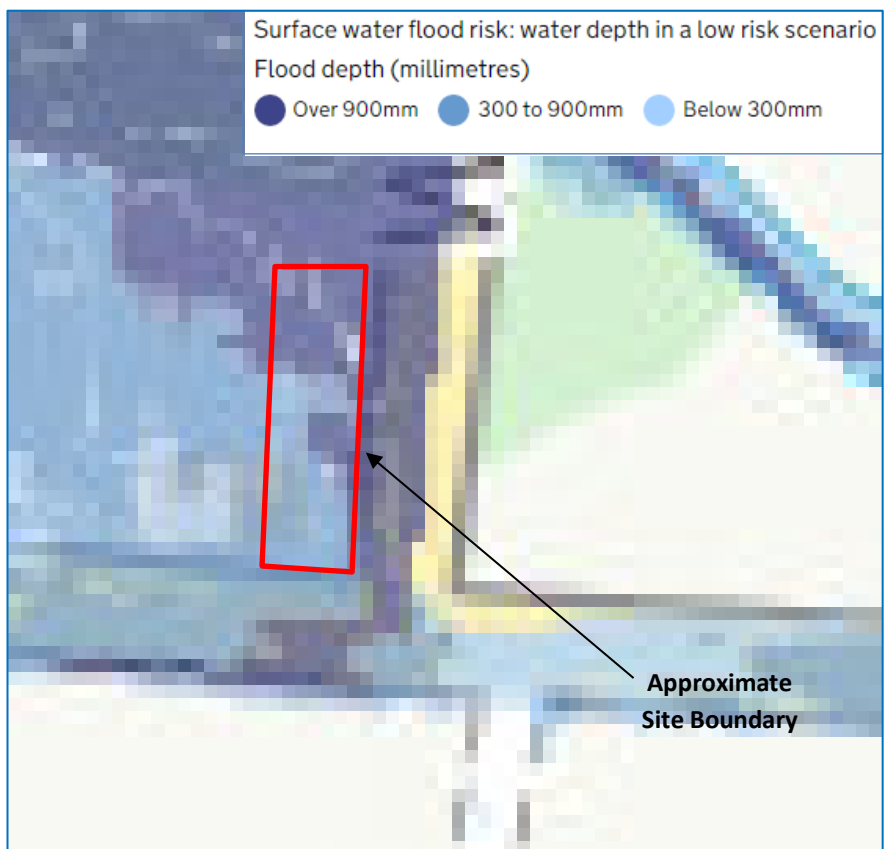


Figure 7.3: Surface water flooding extents 0.1% to 1% AEP

- 7.6. To consider the impact of climate change on the risk of surface water flooding, an extract for the low risk scenario is reproduced in Figure 7.3. This shows the site is at risk of flooding between 300mm to 900mm depth at in the location of the proposed extension, increasing to over 900mm depth at the north-east of the site. During this scenario, safe refuge is available at the first floor level.
- 7.7. The occupants are currently at risk of pluvial flooding and the extension will not increase this risk to the occupants. The Environment Agency advise that minor developments are unlikely to raise significant flood risk issues unless the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows. Given the site location, extent of pluvial flood plain and the scale of the development, the proposed extension is not considered to have a significant effect on the local flood storage capacity.
to residential dwellings for fluvial flood risk, therefore the same principles should apply for the pluvial flood risk. Using the same principle advice as
- 7.8. Any flooding from surcharged sewers would currently flow to the north-east of the site and follow the site contours to the river.

8. GROUNDWATER FLOODING

- 8.1. Groundwater flooding is a risk of the water table rising after prolonged rainfall to emerge above ground level remote from a watercourse. It is most likely to occur in low lying areas underlain by aquifers of high vulnerability.
- 8.2. The Environment Agency has mapped groundwater vulnerability and Figure 8.1 shows the site is located over an aquifer of Medium vulnerability.
- 8.3. The Babergh and Mid-Suffolk Level 1 Strategic Flood Risk Assessment, August 2020 has mapped the risk of flooding from Groundwater, which indicates that the site is deemed as having negligible risk from groundwater flooding due to the nature if the local geological deposits. Refer to **Appendix F** for the associated Groundwater Map.

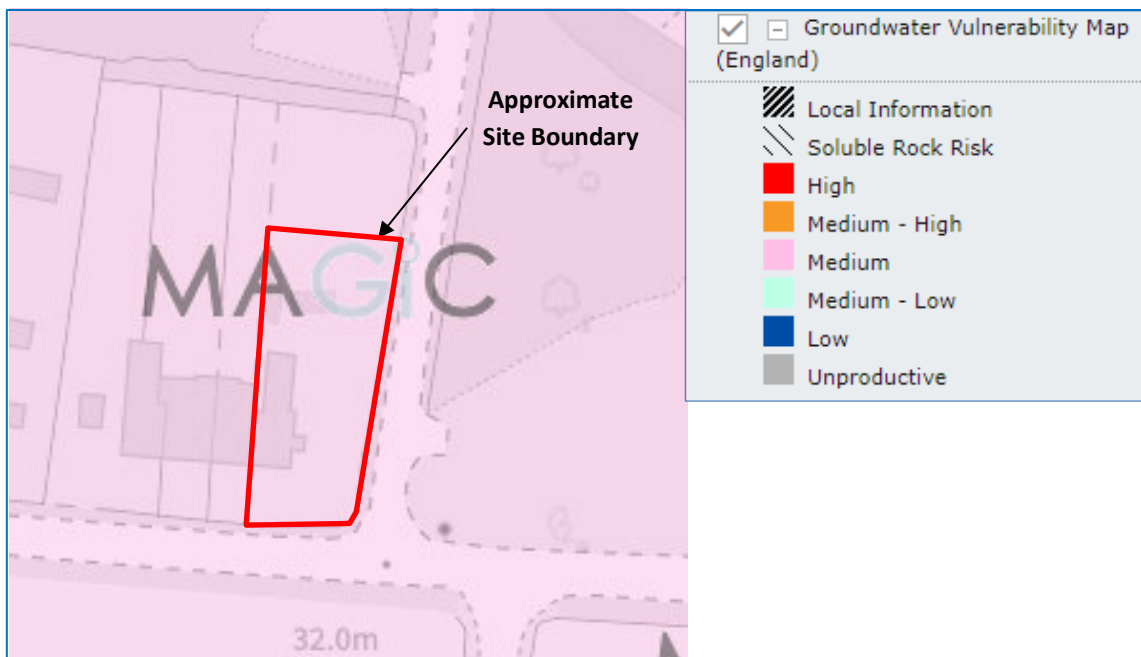


Figure 8.1: Groundwater Vulnerability Mapping

9. INFRASTRUCTURE FAILURE FLOODING

- 9.1. Infrastructure failure flooding is a risk of collapse, failure or surcharging of man-made structures and drainage systems. This could take the form of:
- i. Reservoirs
 - ii. Canals
 - iii. Burst water mains
 - iv. Blocked sewers
 - v. Failed pumping stations
- 9.2. The Environment Agency have mapped failure of reservoirs and an extract is shown in Figure 9.1. This indicates the site north-east part of the site is located within the maximum extent of flooding from reservoirs when the river levels are normal and the whole site is located within the maximum extent of flooding when there is also flooding from rivers.
- 9.3. Based on the information provided on the EA and Defra linked websites, the likelihood of a reservoir failure occurring at the same time as a fluvial flood is considered to be very low. The EA website advises that in the site location “flooding from reservoirs is extremely unlikely, and that an area is considered at risk is peoples’ lives could be threatened in the event of a dam or reservoir failure.” The Defra website advises that the Reservoir Flood Extents Wet Day (National) mapping “represents a prediction of a credible worst case scenario, however it’s unlikely that any actual flood would be this large”.
- 9.4. The EA website advises that the Rattlesden Flood Reservoir (grid reference TM0250058600), owned by the EA is the reservoir that could affect the site; this is a Flood Storage Area to provide fluvial flood protection, which appears to be controlled via a sluice gate.
- 9.5. The risk of flooding from blocked sewers is considered to be very low as any flood water would flow to the north-east towards the river, following the existing flow paths.

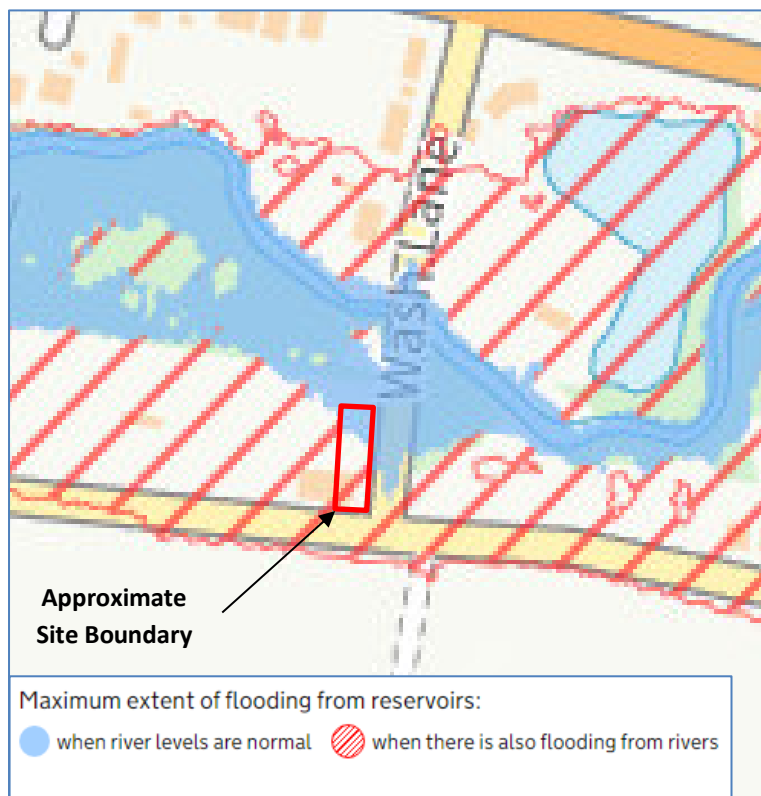


Figure 9.1: Maximum extent of flooding from reservoirs

10. EXCEPTION TEST

- 10.1. Access to the dwelling will be via the main door which will be re-located to the north part of the existing building, with a finished floor level of 32.03m AOD. Based on the EA Fluvial flood levels shown on the drawing in **Appendix E**, the dwelling is not at risk of fluvial flooding during the 1% AEP plus climate change event, with safe access available from Combs Lane.
- 10.2. Based on Figure 7.2, the pluvial flood depth at the proposed dwelling entrance and the access from Combs Lane within the site during the Medium Risk Scenario is shown to be less than 300mm.
- 10.3. Based on the advice given in the Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purposes, (Clarification of the Table 13.1 of FD2320/TR2 and Figure 3.2 of FD2321/TR1) dated May 2008, the Hazard to People Classification would be 'Very Low Hazard - Caution'. This assessment is based on water depths up to 0.3m, with velocities up to 0.3m/s. Refer to Figure 11.1.

Table 4 – Hazard to People Classification using Hazard Rating ($HR = d \times (v + 0.5) + DF$) for (Source Table 13.1 of FD2320/TR2 - Extended version)

HR	Depth of flooding - d (m)												
	DF = 0.5				DF = 1								
Velocity v (m/s)	0.05	0.10	0.20	0.25	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	2.50
0.0	0.03+0.5 = 0.53	0.05+0.5 = 0.55	0.10+0.5 = 0.60	0.13+0.5 = 0.63	0.15+1.0 = 1.15	0.20+1.0 = 1.20	0.25+1.0 = 1.25	0.30+1.0 = 1.30	0.40+1.0 = 1.40	0.50+1.0 = 1.50	0.75+1.0 = 1.75	1.00+1.0 = 2.00	1.25+1.0 = 2.25
0.1	0.03+0.5 = 0.53	0.06+0.5 = 0.56	0.12+0.5 = 0.62	0.15+0.5 = 0.65	0.18+1.0 = 1.18	0.24+1.0 = 1.24	0.30+1.0 = 1.30	0.36+1.0 = 1.36	0.48+1.0 = 1.48	0.60+1.0 = 1.60	0.90+1.0 = 1.90	1.20+1.0 = 2.20	1.50+1.0 = 2.55
0.3	0.04+0.5 = 0.54	0.08+0.5 = 0.58	0.15+0.5 = 0.65	0.19+0.5 = 0.69	0.23+1.0 = 1.23	0.30+1.0 = 1.30	0.38+1.0 = 1.38	0.45+1.0 = 1.45	0.60+1.0 = 1.60	0.75+1.0 = 1.75	1.13+1.0 = 2.13	1.50+1.0 = 2.50	1.88+1.0 = 2.88
0.5	0.05+0.5 = 0.55	0.10+0.5 = 0.60	0.20+0.5 = 0.70	0.25+0.5 = 0.75	0.30+1.0 = 1.30	0.40+1.0 = 1.40	0.50+1.0 = 1.50	0.60+1.0 = 1.60	0.80+1.0 = 1.80	1.00+1.0 = 2.00	1.50+1.0 = 2.50	2.00+1.0 = 3.00	2.50+1.0 = 3.50
1.0	0.08+0.5 = 0.58	0.15+0.5 = 0.65	0.30+0.5 = 0.80	0.38+0.5 = 0.88	0.45+1.0 = 1.45	0.60+1.0 = 1.60	0.75+1.0 = 1.75	0.90+1.0 = 1.90	1.20+1.0 = 2.20	1.50+1.0 = 2.50	2.25+1.0 = 3.25	3.00+1.0 = 4.00	3.75+1.0 = 4.75
1.5	0.10+0.5 = 0.60	0.20+0.5 = 0.70	0.40+0.5 = 0.90	0.50+0.5 = 1.00	0.60+1.0 = 1.60	0.80+1.0 = 1.80	1.00+1.0 = 2.00	1.30+1.0 = 2.30	1.60+1.0 = 2.60	2.00+1.0 = 3.00	3.00+1.0 = 4.00	4.00+1.0 = 5.00	5.00+1.0 = 6.00
2.0	0.13+0.5 = 0.63	0.25+0.5 = 0.75	0.50+0.5 = 1.00	0.63+0.5 = 1.13	0.75+1.0 = 1.75	1.00+1.0 = 2.00	1.25+1.0 = 2.25	1.50+1.0 = 2.50	2.00+1.0 = 3.00	3.50	4.75	6.00	7.25
2.5	0.15+0.5 = 0.65	0.30+0.5 = 0.80	0.60+0.5 = 1.10	0.75+0.5 = 1.25	0.90+1.0 = 1.90	1.20+1.0 = 2.20	1.50+1.0 = 2.50	1.80+1.0 = 2.80	3.40	4.00	5.50	7.00	8.50
3.0	0.18+0.5 = 0.68	0.35+0.5 = 0.85	0.70+0.5 = 1.20	0.88+0.5 = 1.38	1.05+1.0 = 2.05	1.40+1.0 = 2.40	1.75+1.0 = 2.75	3.10	3.80	4.50	6.25	8.00	9.75
3.5	0.20+0.5 = 0.70	0.40+0.5 = 0.90	0.80+0.5 = 1.30	1.00+0.5 = 1.50	1.20+1.0 = 2.20	1.60+1.0 = 2.60	3.00	3.40	4.20	5.00	7.00	9.00	11.00
4.0	0.23+0.5 = 0.73	0.45+0.5 = 0.95	0.90+0.5 = 1.40	1.13+0.5 = 1.63	1.35+1.0 = 2.35	1.80+1.0 = 2.80	3.25	3.70	4.60	5.50	7.75	10.00	12.25
4.5	0.25+0.5 = 0.75	0.50+0.5 = 1.00	1.00+0.5 = 1.50	1.25+0.5 = 1.75	1.50+1.0 = 2.50	2.00+1.0 = 3.00	3.50	4.00	5.00	6.00	8.50	11.00	13.50
5.0	0.28+0.5 = 0.78	0.60+0.5 = 1.10	1.10+0.5 = 1.60	1.38+0.5 = 1.88	1.65+1.0 = 2.65	3.20	3.75	4.30	5.40	6.50	9.25	12.00	14.75
Flood Hazard Rating (HR)	Colour Code		Hazard to People Classification										
Less than 0.75			Very low hazard - Caution										
0.75 to 1.25			Danger for some – includes children, the elderly and the infirm										
1.25 to 2.0			Danger for most – includes the general public										
More than 2.0			Danger for all – includes the emergency services										

Figure 11.1 Extract from Supplementary Note on Flood Hazard Ratings and Thresholds for Development Planning and Control Purposes

Flood Emergency Evacuation Plan

- 10.4. As the site is located within a Fluvial and Pluvial flood zone then an emergency flood plan is required in the event of a flood scenario.
- 10.5. An emergency flood plan deals with matters of evacuation and refuge and demonstrates that people will not be exposed to flood hazards. The site owner should develop an emergency flood plan that includes receiving flood warnings, preparing and evacuating the site area prior to the flood event, which should be provided to the occupants.
- 10.6. The site owner/occupants should sign up with the Environment Agency to receive 24 hour Flood Warnings to enable preparation and safe evacuation before a flood event occurs (**Floodline-0345 988 1188**).

Flood Resilience and Resistance Measures

- 10.7. To reduce the risk and impact of flooding on the development, flood resilience and mitigation measures are proposed.
- 10.8. The proposed ground floor finished floor level (FFL) is **34.24m AOD** to match the existing main FFL.
- 10.9. To minimise the disruption and cost implications of a pluvial flood event, flood resilience measures are encouraged up to 600mm above the existing ground level. These resilience measures are subject to structural assessment, using materials with low permeability and raising electrical sockets above the floor level as far as is practical. Further guidance regarding flood resistance measures is provided within the Government document:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7730/flood_performance.pdf.

11. SUMMARY

- 11.1. It has been demonstrated that the site area is located within Flood Zone 2 and 3 at a high probability of flooding.
- 11.2. Table 11.1 summarises the probability of the site flooding from the five key sources as listed in PPS25.

Source	Description	Risk	
Fluvial	Rivers	Flood Zone 2 and 3	(0.1% to >1% AEP)
Tidal	Seas		
Pluvial	Surface Water	Low to High	(0.1% to >3.3%)
Groundwater	Aquifers	Low	-
Infrastructure failure	Reservoirs	Very Low	-
	Blocked Sewers	Low	

Table 11.1 – Flood Risk Summary

- 11.3. Based on Environment Agency guidance, the development is considered to be Minor Development.
- 11.4. Environment Agency fluvial modelling shows that proposed extension is not at risk of flooding during the 1% AEP plus 25% climate change event, with the proposed floor level of **32.24m AOD** located 620mm higher than the modelled event (with defences removed) and 240mm higher than the modelled 0.1% AEP event. The modelling shows that safe access to the dwelling and extension (via the relocated main entrance) is available during the 1% AEP plus 25% climate change event.
- 11.5. The pluvial risk to the extension is the same as currently exists for the existing dwelling; the occupants are currently at risk of pluvial flooding and the extension will not increase this risk to the occupants.
- 11.6. The pluvial flood depth at the proposed dwelling entrance and the access from Combs Lane within the site during the Medium Risk Scenario is shown in the EA flood mapping to be less than 300mm, with an associated risk of 'Very Low Hazard – Caution'.
- 11.7. Safe refuge is available at the first floor in during a future fluvial event including for climate change.
- 13.1. To minimise the disruption and cost implications of a pluvial flood event, flood resilience measures are encouraged up to 600mm above the existing ground level. These resilience measures are subject to structural assessment, using materials with low permeability and raising electrical sockets above the floor level as far as is practical.
- 13.2. The Environment Agency advise that minor extensions are unlikely to raise significant flood risk issues unless the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows. Given the site location, extent of pluvial flood plain and the scale of the development, the proposed extension is not considered to have a significant effect on the local flood storage capacity.

- 13.3. Using the same principal advice as the Environment Agency, they accept minor developments to residential dwellings for fluvial flood risk, therefore the same principles should apply for the pluvial flood risk.
- 13.4. As the site is located within a flood zone the site occupants should sign up with the Environment Agency to receive 24-hour Flood Warnings to enable preparation and safe evacuation before a flood event occurs.
- 13.5. In accordance with government policy, SuDS should be used on site where possible and surface water drainage carried out in a sustainable way.
- 13.6. As long as maintenance of the new drainage systems are correctly carried out, the risk of flooding and the subsequent risks from infrastructure failure is very low.
- 13.7. It is considered that the risk of flooding to the site has been adequately considered and therefore development of the site does not pose an unacceptable flood risk to occupants of the site.
- 13.8. The Environment Agency accepts that extreme floods will occur, and it will never be possible to eliminate flood risk altogether.

LIST OF APPENDICES

- Appendix A** - Site Location Plan
- Appendix B** - Topographical Survey
- Appendix C** - Proposed Plans and Elevations
- Appendix D** - Environment Agency Flood Data and Asset Information
- Appendix E** - Proposed site layout and flood extents
- Appendix F** - Babergh and Mid-Suffolk Level 1 SFRA Groundwater Flood Risk Map

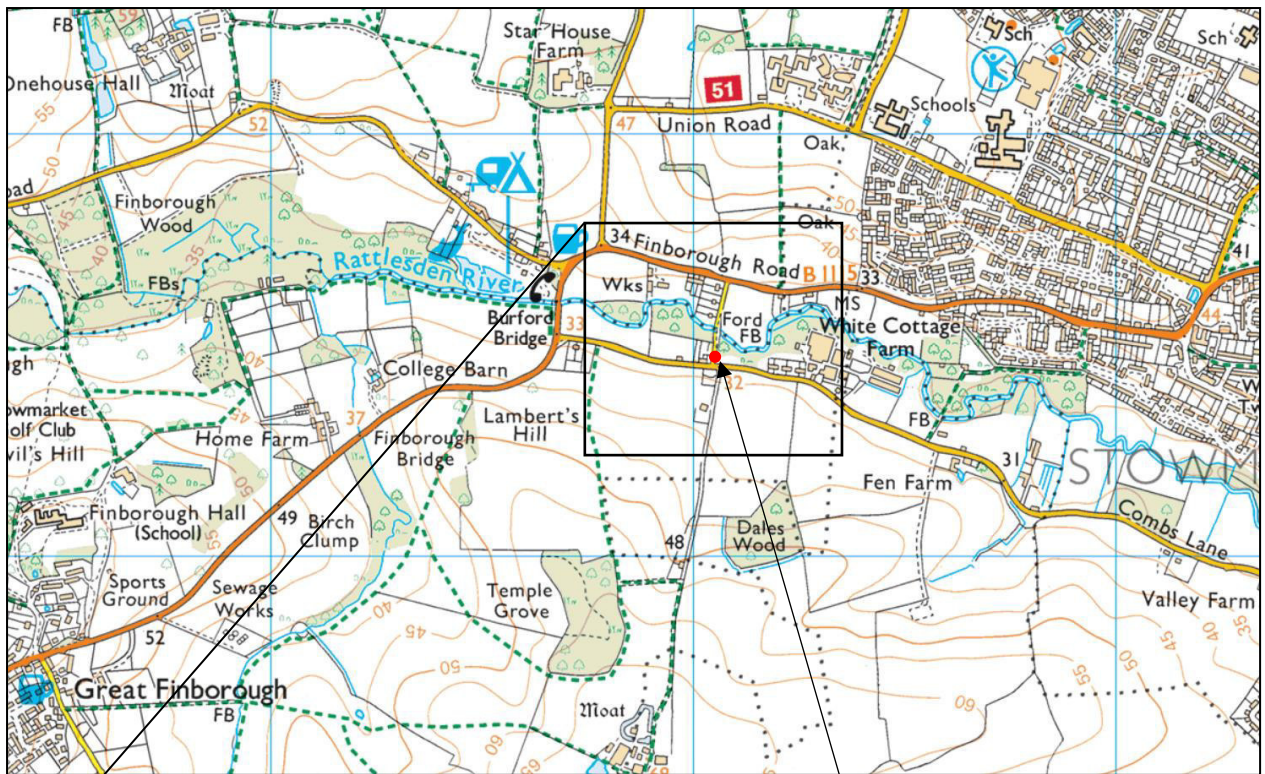
FLOOD RISK ASSESSMENT

APPENDIX A

Site Location Plan

203/2022: 4 Wash Lane Corner, Great Finborough, Stowmarket, Suffolk IP14 3BJ

Site Location Plan

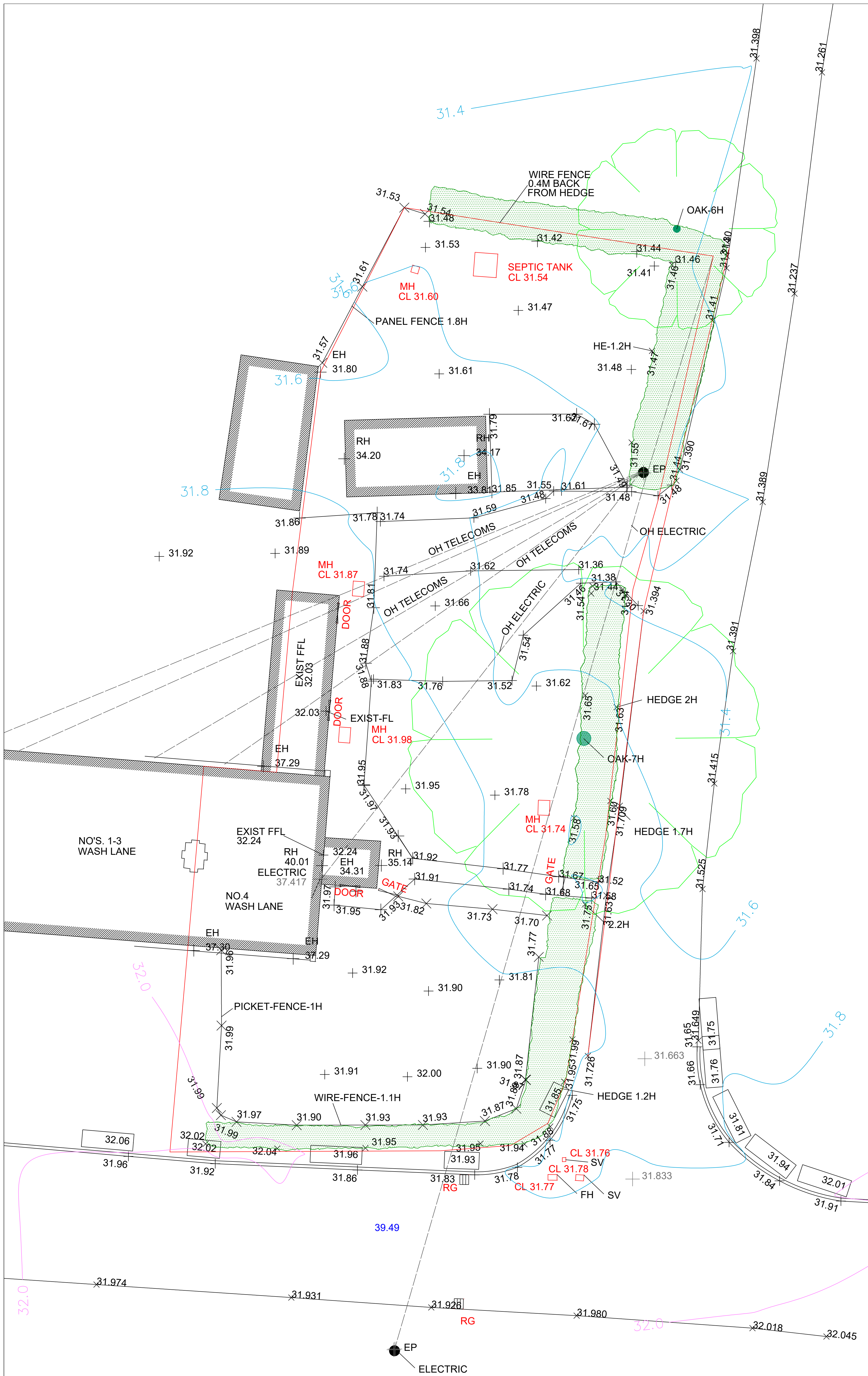


Approximate Site Location

FLOOD RISK ASSESSMENT

APPENDIX B

Topographical Survey



Notes
 THIS DRAWING REMAINS THE COPYRIGHT OF SC CONSTRUCTION SOLUTIONS LTD AND IS NOT TO BE COPIED, ALTERED OR CHANGED WITHOUT PERMISSION TREE SPECIES (WHERE SHOWN) TO BE TREATED WITH CAUTION AND EXPERT IDENTIFICATION IS ADVISED ALL DIMENSIONS IN METRES UNLESS SHOWN
 SURVEY COORDINATES RELATE TO OSTN15 & OSTGM15 DATUMS
 BUILDING LOCATIONS & LEVELS TAKEN USING REMOTE MEASURING METHODS

LEGEND	
ACU	Air Conditioning Unit
AV	Air Valve
BB	Belisha Beacon
BOD	Base of Ditch
BO	Bollard
BH	Borehole
BS	Bus Stop
BU	Bush
BT	British Telecom
CBASE	Concrete Base
CCTV	Close Circuit TV
COL	Column
CBF	Close Board Fence
DC	Drainage Channel
DP	Downpipe
EL	Eaves Level
EP	Electricity Pole
ER	Earth Road
FH	Fire Hydrant
FL	Floor Level
FP	Feeder Pillar
FWS	Foul Water Sewer
G	Gully
GV	Gas Valve
HH	Head Height
IL	Invert Level
LP	Lampost
KO	Kerb Offset
MH	Manhole
MP	Marker Post
OHW	Overhead Wires
PRF	Post & Rail Fence
RE	Ridge Level
RS	Road Sign
RSJ	Rolled Steel Joist
RG	Road Gully
RS	Road Sign
TAC	Tactile Paving
TL	Traffic Light
TOW	Top of Wall
UC	Unknown Cover
UTL	Unable to Lift
VP	Vent Pipe
WL	Water Level
WF	Wire Fence
W	Water

MANHOLES SHOWN WITH DIRECTION OF FLOW DIAMETERS TO BE TREATED WITH CAUTION AS ONLY VIEWED FROM SURFACE

MH CL x.xx
 IL x.xx

KERB LEVELS / ALIGNMENTS LEVELS / LINE
 21.02 20.99 20.95

EXISTING GROUND LEVELS +92.19

CONTROL STATION

TREE DECIDUOUS

VEGETATION / CANOPY LINE

TOP OF BANK / BOTTOM OF BANK LINE
 20.70 19.87 20.28
 20.47 21.24

REV	DESCRIPTION	DATE

Client
MR & MRS DYKES

Project
NO. 4 WASH LANE CORNER GREAT FINBOROUGH IP14 3BJ

Title
TOPOGRAPHICAL SURVEY

SC CONSTRUCTION SOLUTIONS LTD
 • Topographical Surveying • Setting Out • 3D Modelling
 • Earthworks Volumes • As Built Surveys
 • Project Management • Site Management



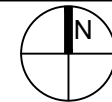
FELIXSTOWE SUFFOLK Mob: 07894 853672 Email: steve@scs-ld.co.uk

Date	Scale	Dwg Status
26/08/22	NTS	FOR ISSUE
Job No.	Dwg. No.	Rev.
1599	SC/001	-

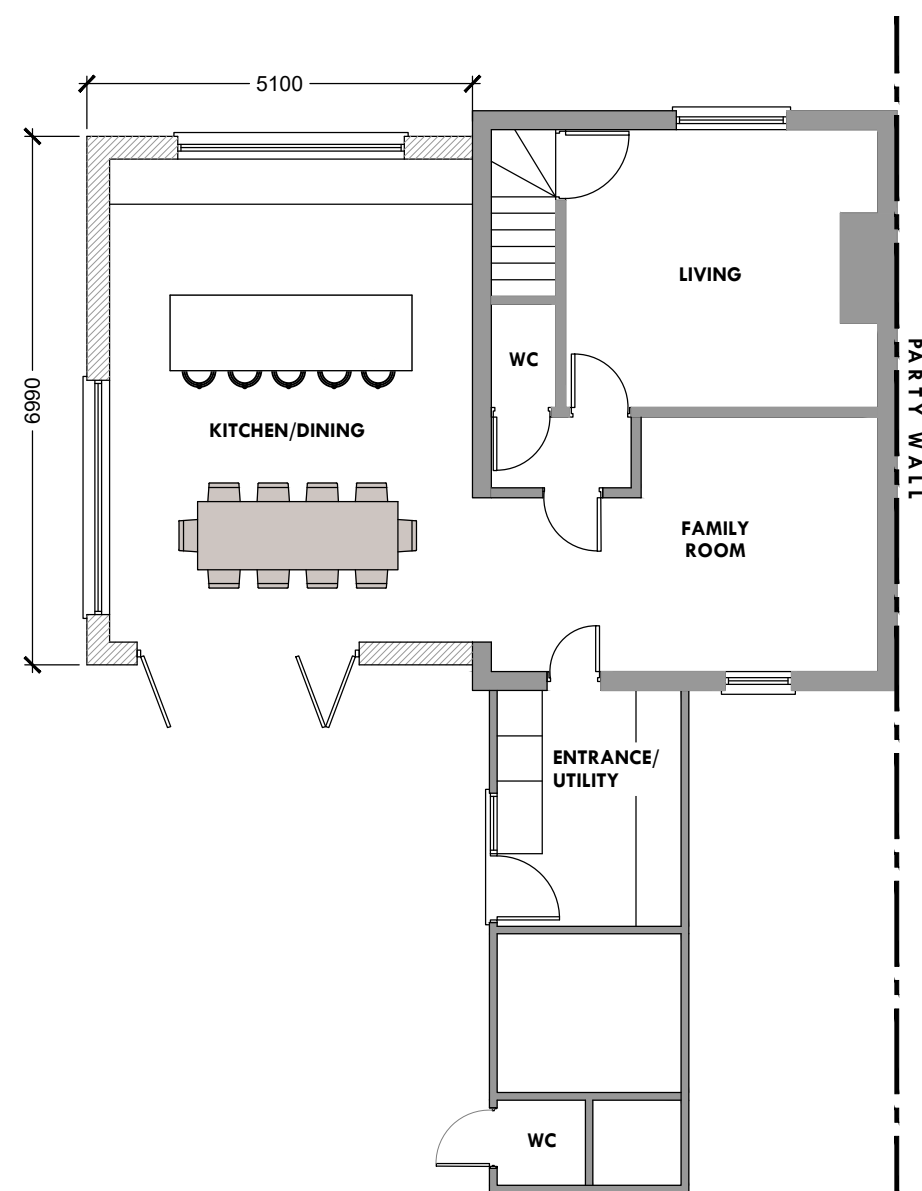
FLOOD RISK ASSESSMENT

APPENDIX C

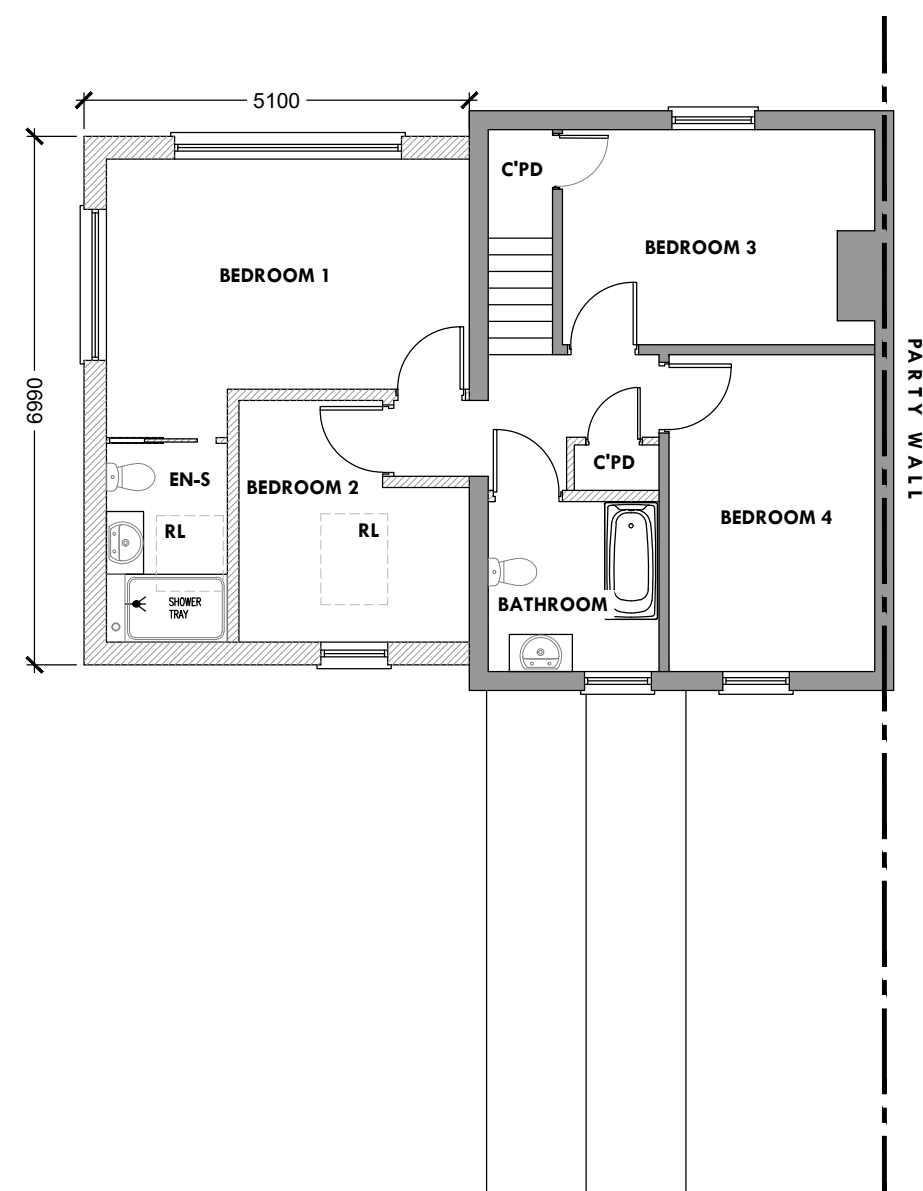
Proposed Plans and Elevations



Do not scale from this drawing
Check all dimensions on site before construction



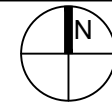
PROPOSED GROUND FLOOR PLAN
1:00 @ A3



PROPOSED FIRST FLOOR PLAN
1:00 @ A3

Date	Revision Description	By

DYKES	
4, WASH LANE CORNER GREAT FINBOROUGH STOWMARKET, SUFFOLK IP14 3BJ	
AS PROPOSED - FLOOR PLANS	
PLANNING	
AS SHOWN	MAY 2022
A3	C350
-	03

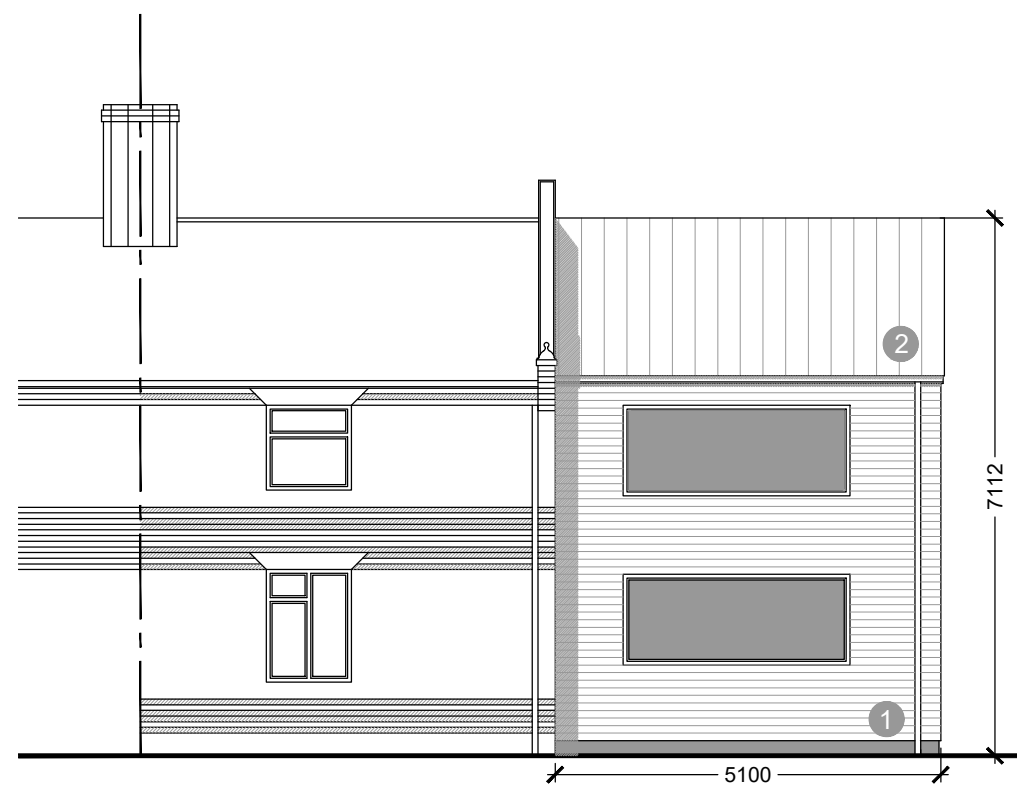


Do not scale from this drawing
Check all dimensions on site before construction

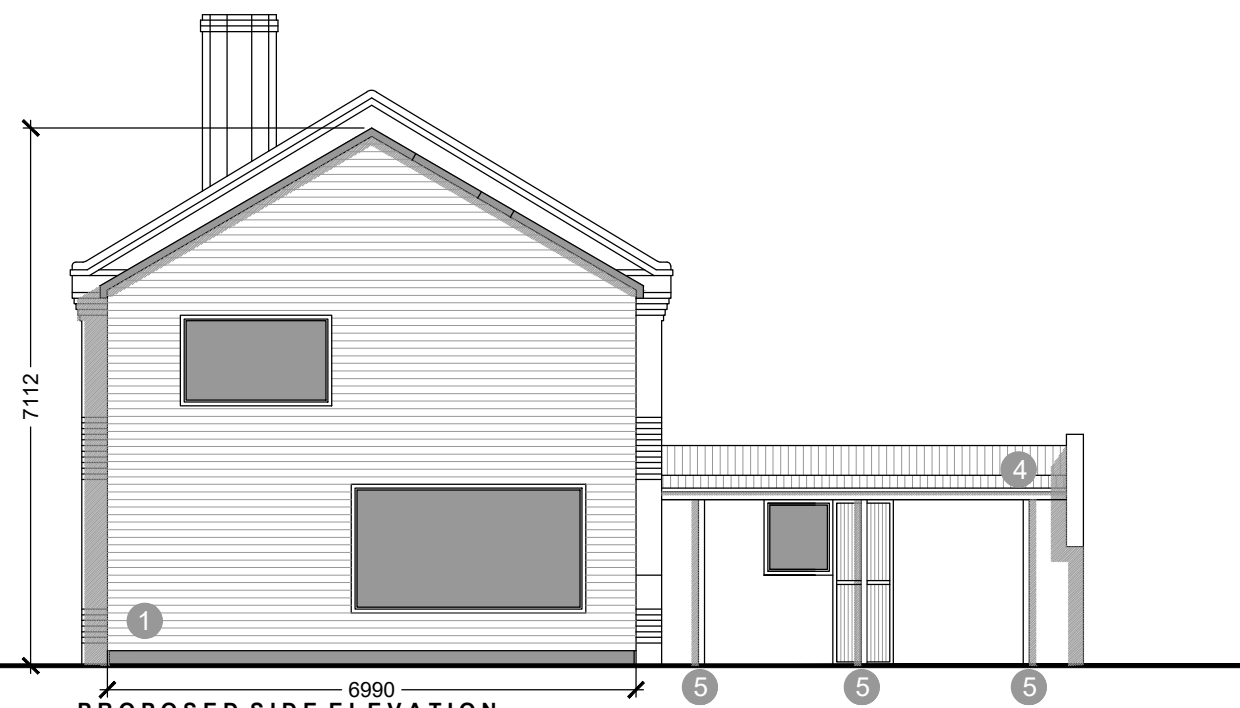
LEGEND

- ① LARCH CLADDING
- ② STANDING SEAM ROOF
- ④ CLAY ROOF TILES
- ⑤ TIMBER POST

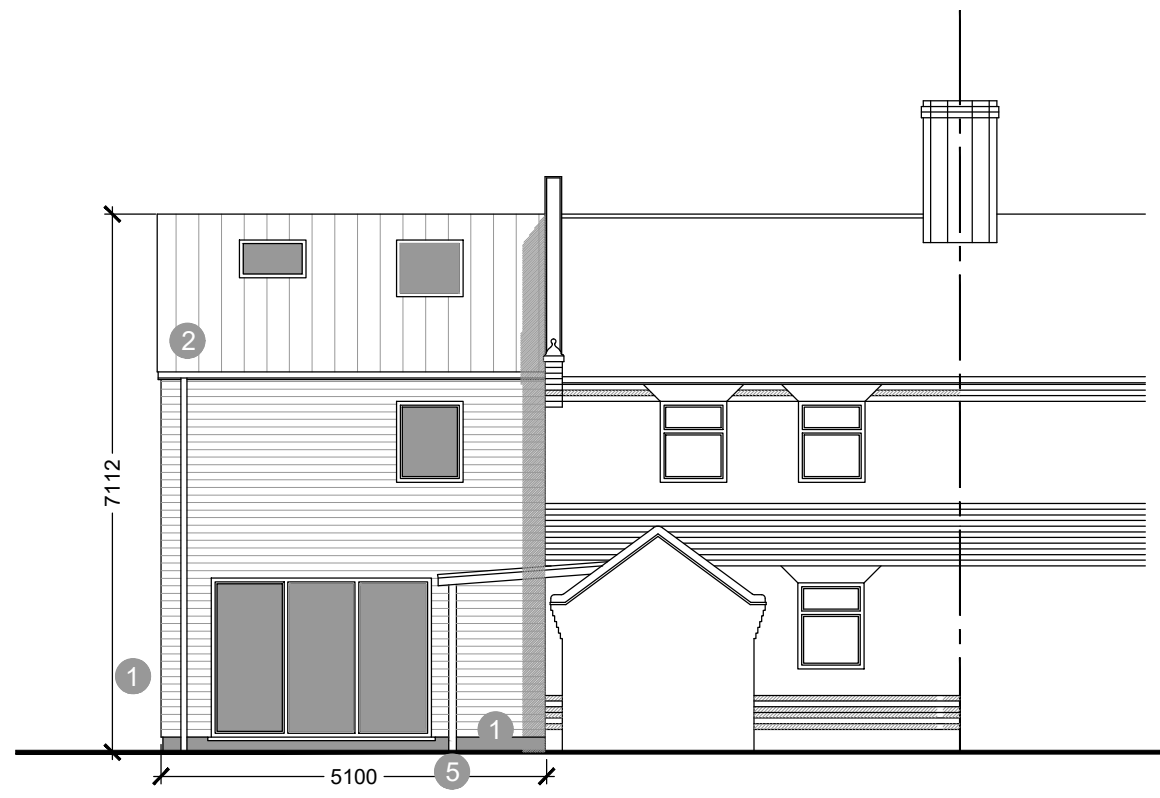
WINDOWS:
DARK GREY/BLACK



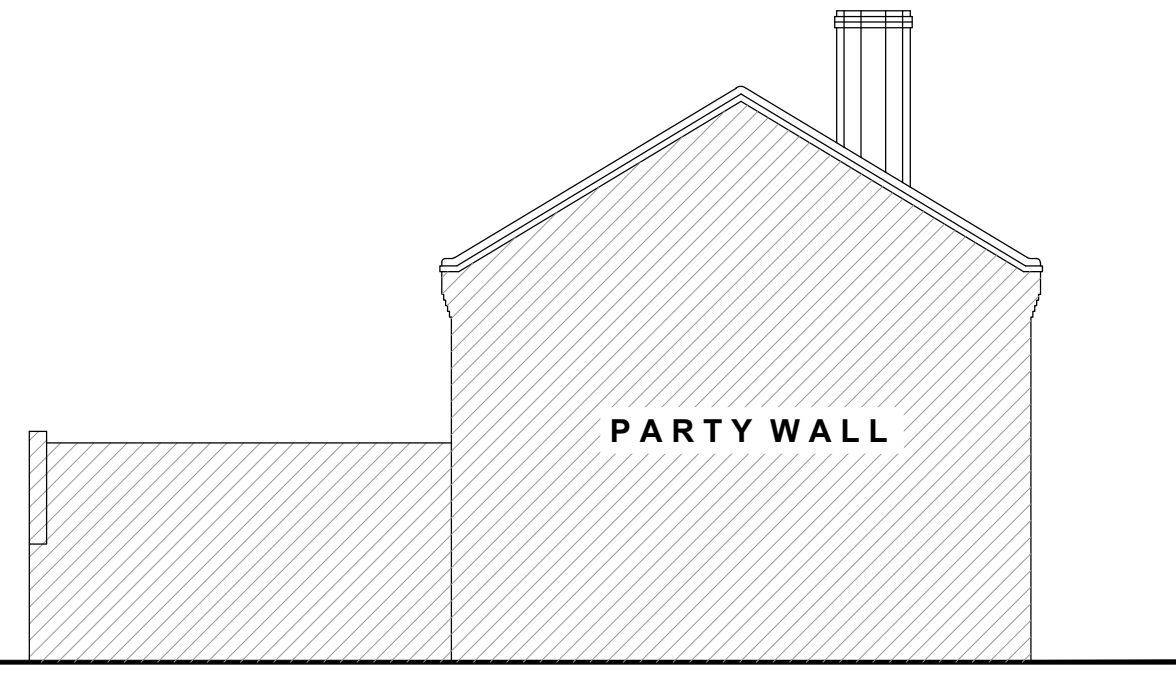
PROPOSED FRONT ELEVATION
1:00 @ A3



PROPOSED SIDE ELEVATION
1:100 @ A3



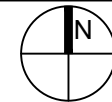
PROPOSED REAR ELEVATION
1:00 @ A3



PROPOSED SIDE ELEVATION (PARTY WALL)
1:00 @ A3

Rev	Date	Revision Description	By

DYKES	
4, WASH LANE CORNER GREAT FINBOROUGH STOWMARKET, SUFFOLK IP14 3BJ	
AS PROPOSED - ELEVATIONS	
PLANNING	
AS SHOWN	MAY 2022
IP14 3BJ	04

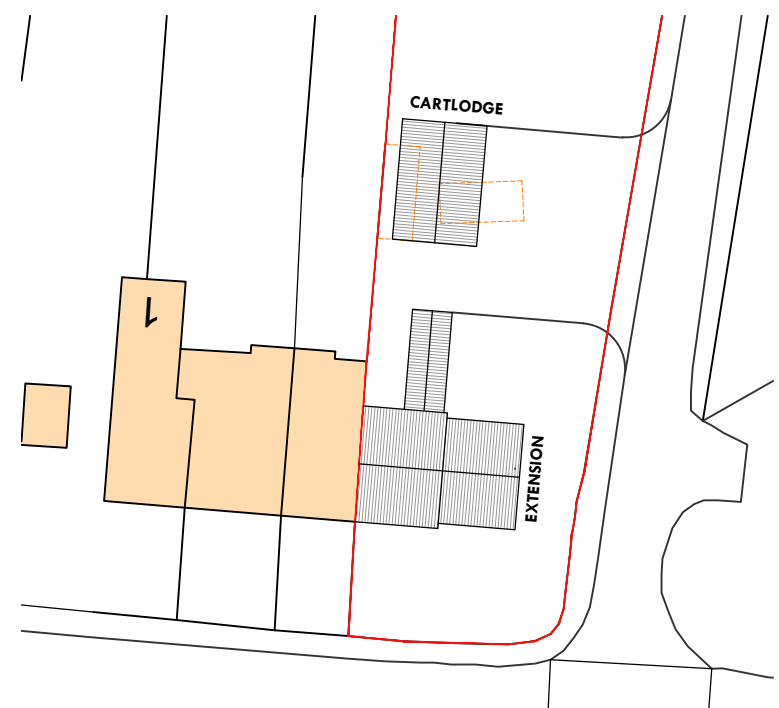


Do not scale from this drawing
Check all dimensions on site before construction

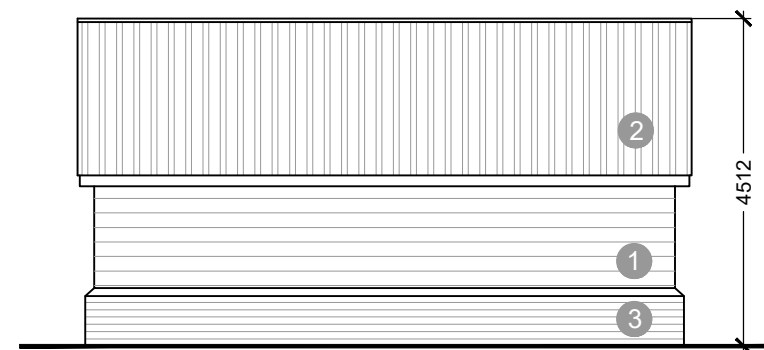
LEGEND

- ① WOOD CLADDING
- ② CLAY ROOF TILES
- ③ BRICK PLINTH
- ④ TIMBER POST

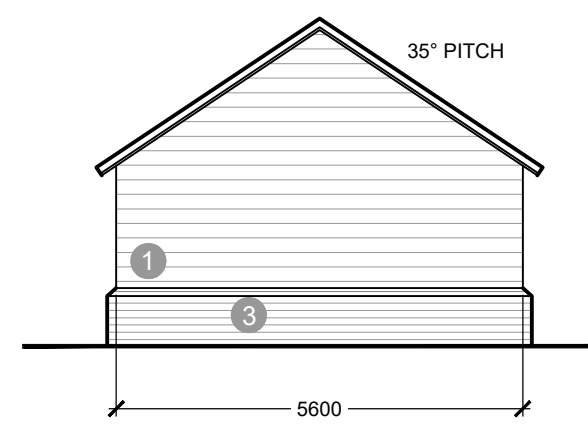
DOORS:
WOOD



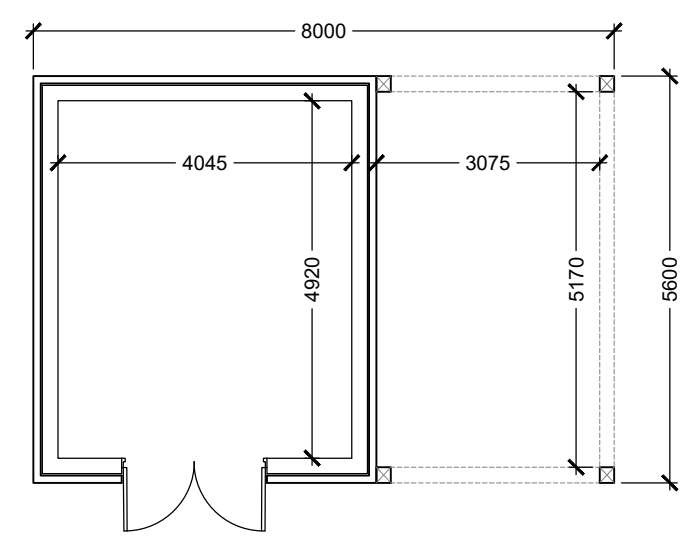
SITE LOCATION PLAN
1:500 @ A3



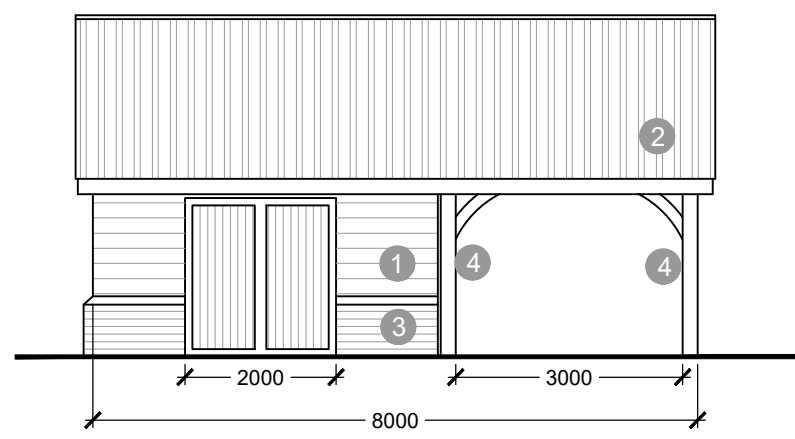
PROPOSED REAR ELEVATION
1:00 @ A3



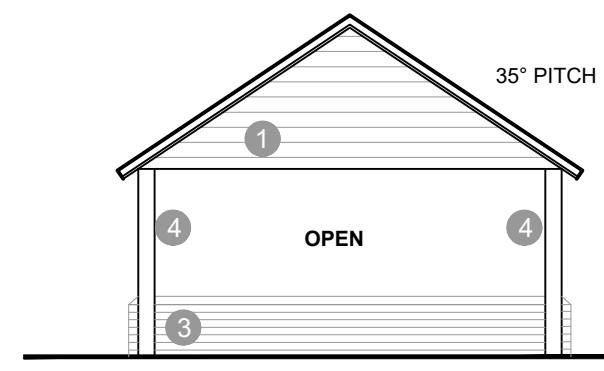
PROPOSED SIDE ELEVATION
1:00 @ A3



PROPOSED FLOOR PLAN
1:00 @ A3



PROPOSED FRONT ELEVATION
1:00 @ A3



PROPOSED SIDE ELEVATION
1:00 @ A3

Rev	Date	Revision Description	By

Client	DYKES
Project	4, WASH LANE CORNER GREAT FINBOROUGH STOWMARKET, SUFFOLK IP14 3BJ
Drawing	AS PROPOSED - CART LODGE
Series	PLANNING
Scale	AS SHOWN
Date	MAY 2022
Page	05

FLOOD RISK ASSESSMENT

APPENDIX D

Environment Agency Flood Data and Asset Information

Flood risk assessment data

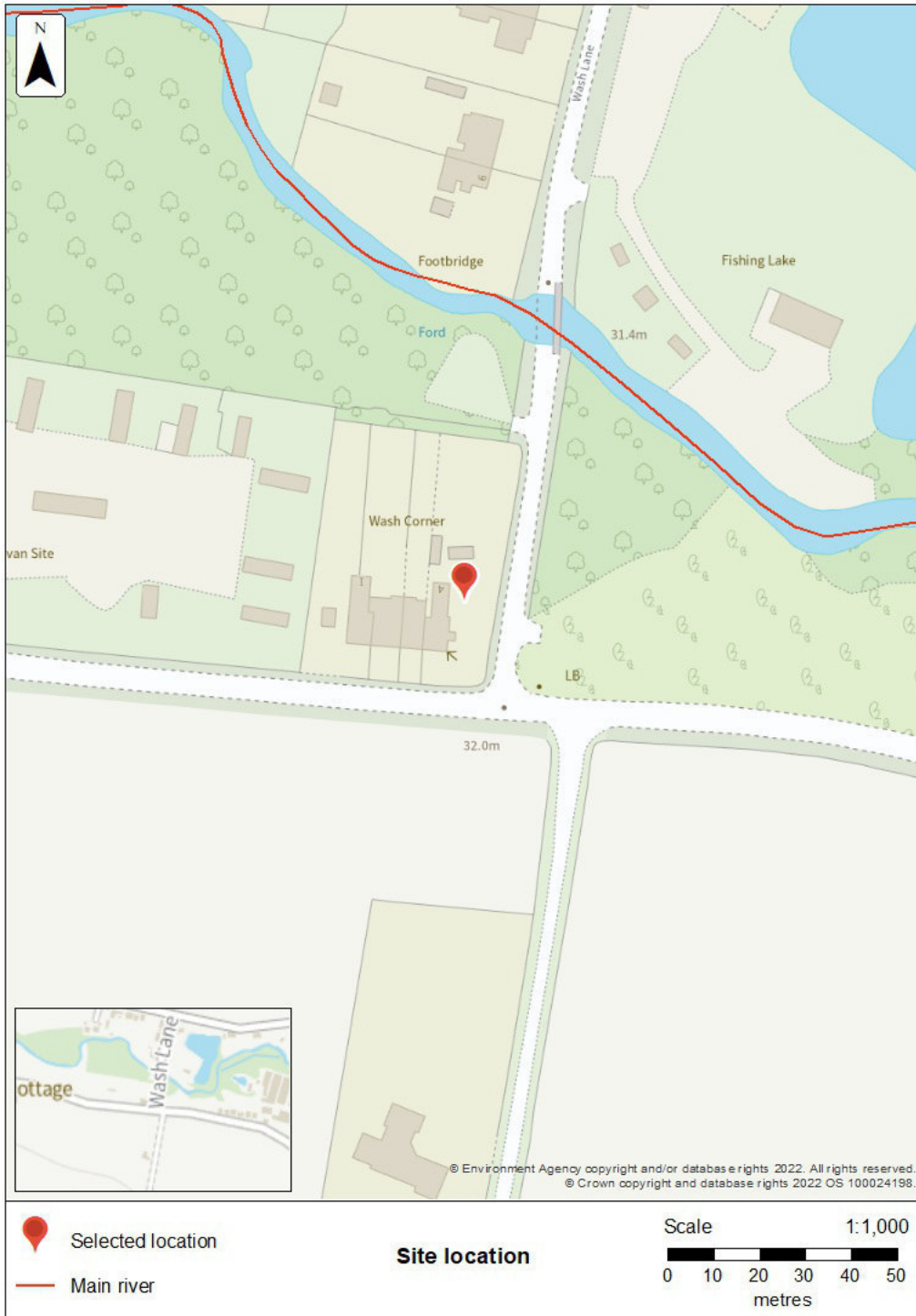
Location of site: 603039 / 258471 (shown as easting and northing coordinates)

Document created on: 9 August 2022

This information was previously known as a product 4.

Customer reference number: DD8DYVJCVKPE

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- flood defences and attributes
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- historic flooding

We do not have historic flooding data for this location.

Please note that:

- flooding may have occurred that we do not have records for
- flooding can come from a range of different sources
- we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Gipping_2020 Mott MacDonald

Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial, defences removed climate change fluvial

Date: 1 October 2020

These models contain the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 2.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

This data is updated on a quarterly basis as better data becomes available.








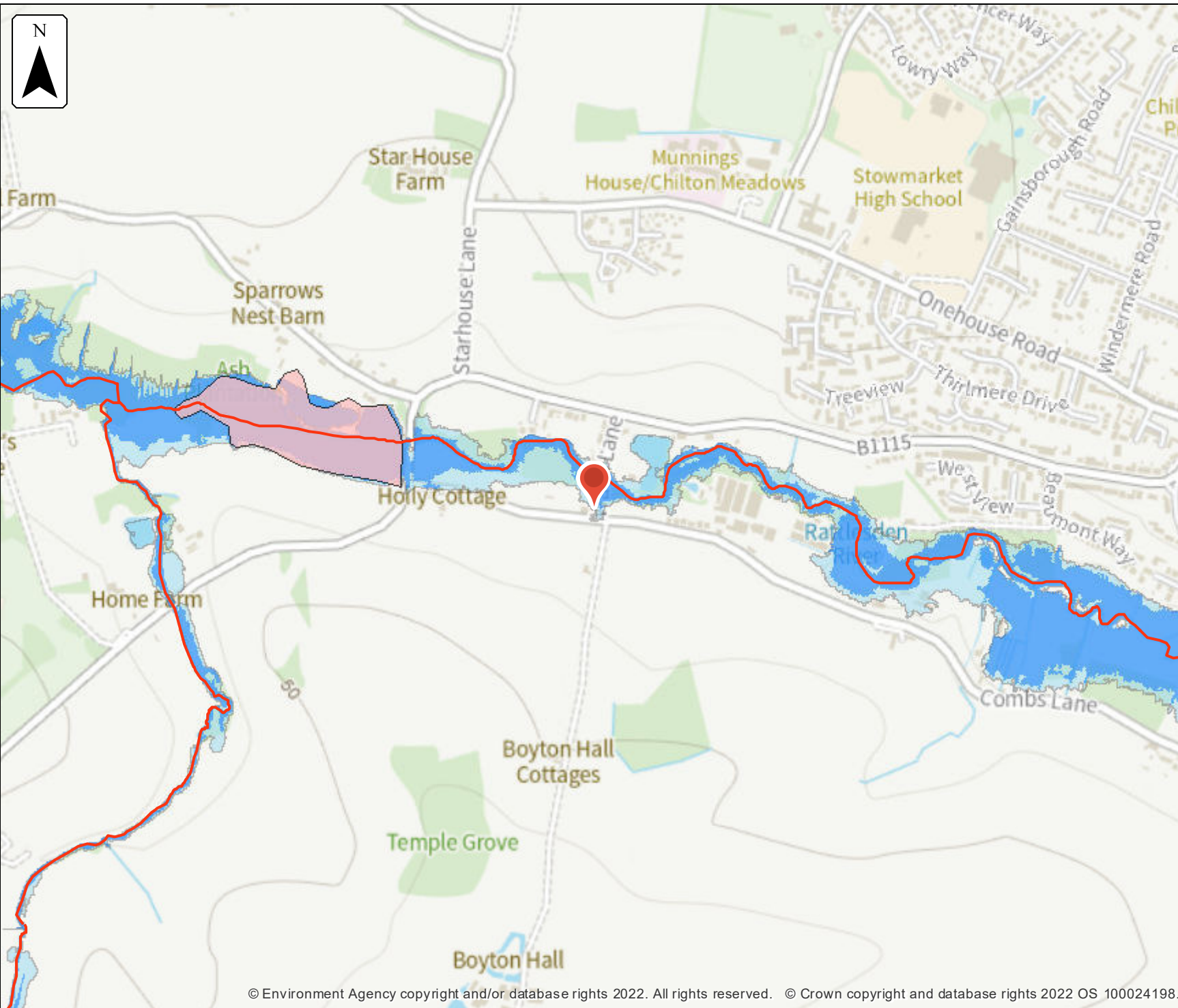
Flood map for planning

Location (easting/northing)
603039/258471

Scale
1:10,000

Created
9 Aug 2022

-  Selected location
-  Main river
-  Water storage area
-  Flood zone 3
-  Flood zone 2



Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change



Defended modelled fluvial extent

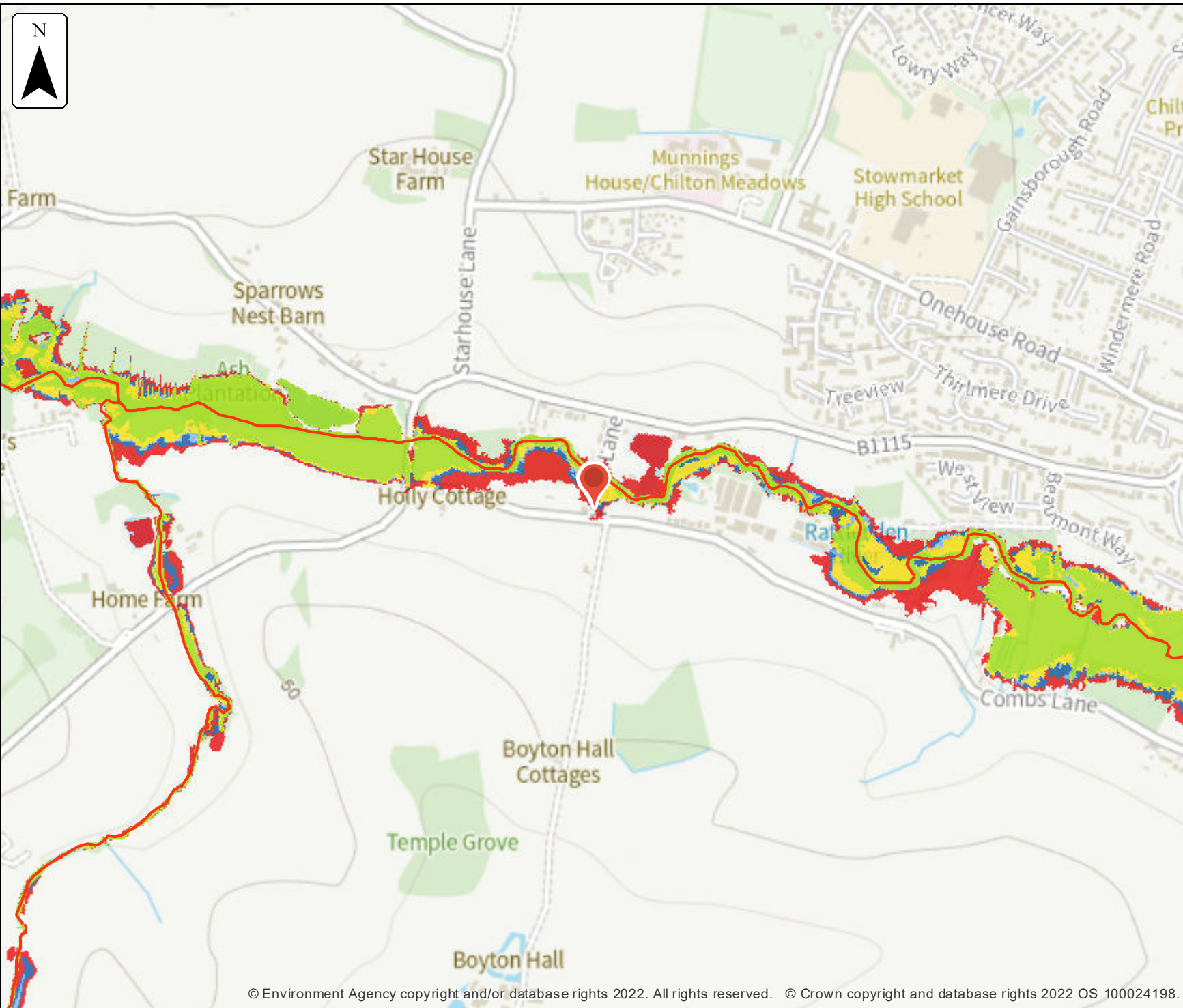
Location (easting/northing)
603039/258471

Scale Created
1:10,000 9 Aug 2022

Model name
Gipping 2020 Mott MacDonald

- Selected location
- Main river
- Modelled flood extent
 - 5% AEP
 - 1.33% AEP
 - 1% AEP
 - 0.5% AEP
 - 0.1% AEP

Flood extents may not be visible where they overlap other return periods










Defences removed modelled fluvial extent

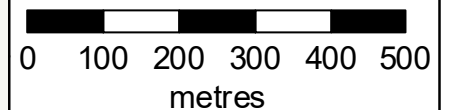
Location (easting/northing)
603039/258471

Scale Created
1:10,000 9 Aug 2022

Model name
**Gipping 2020 Mott
MacDonald**

-  Selected location
-  Main river
- Modelled flood extent
 -  5% AEP
 -  1% AEP
 -  0.1% AEP

Flood extents may not be visible where they overlap other return periods











Defended climate change modelled fluvial extent

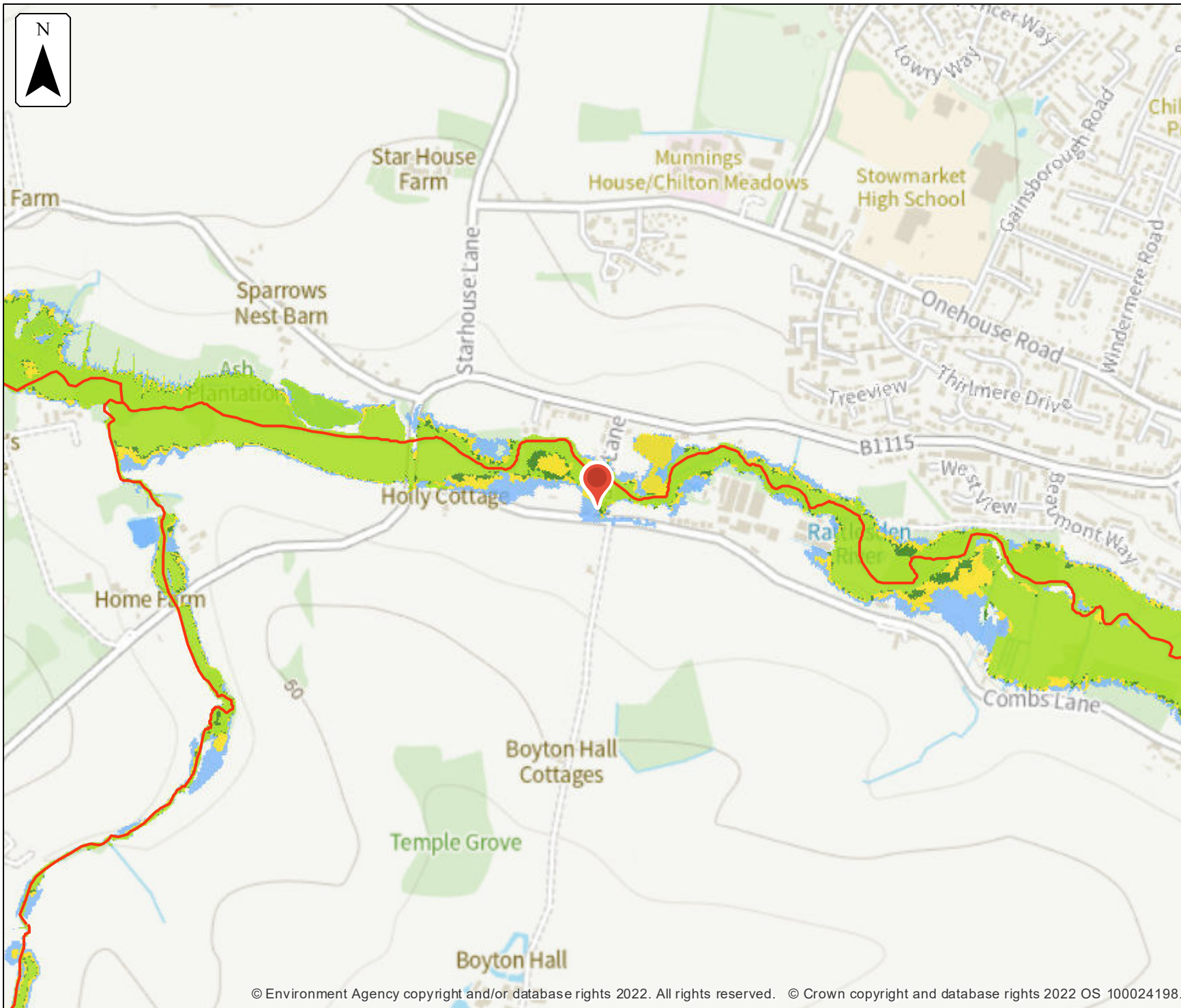
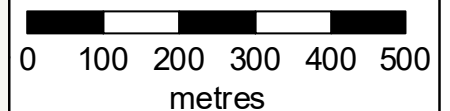
Location (easting/northing)
603039/258471

Scale Created
1:10,000 9 Aug 2022

Model name
Gipping 2020 Mott MacDonald

-  Selected location
-  Main river
- Modelled flood extent
 -  1.0% AEP (+25%)
 -  1.0% AEP (+35%)
 -  1.0% AEP (+65%)
 -  0.1% AEP (+25%)

Flood extents may not be visible where they overlap other return periods








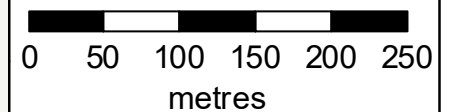
Defended modelled fluvial node locations

Location (easting/northing)
603039/258471

Scale Created
1:5,000 9 Aug 2022

Model name
River Gipping 2020

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	1167893	602641	258594	32.65	12.25			32.77	16.18	32.82	17.35	32.87	20.58	33.0	31.67
2	1167819	602688	258597	31.90	10.92			32.14	11.54	32.21	11.58	32.37	11.57	32.73	11.61
3	1167789	602710	258602	31.83	10.97			32.09	11.98	32.16	12.15	32.33	12.18	32.72	12.31
4	1167753	602768	258584	31.61	12.29			31.87	16.23	31.93	17.40	32.08	20.65	32.43	29.39
5	1167675	602867	258541	31.42	12.29			31.66	16.15	31.72	17.24	31.86	20.19	32.19	27.51
6	1168418	602923	258601	31.22	12.15			31.47	15.11	31.53	16.02	31.67	18.42	32.02	22.12
7	1168419	603058	258529	31.14	12.26			31.38	15.87	31.43	16.82	31.57	19.26	31.89	25.56
8	1167634	603099	258500	30.67	12.25			30.90	15.96	30.96	16.81	31.10	19.23	31.42	26.13
9	1167786	603226	258572	30.33	12.19			30.55	15.91	30.60	16.99	30.74	19.93	31.06	26.73
10	1167932	603408	258506	30.19	12.24			30.38	16.20	30.42	17.37	30.52	20.54	30.75	29.77

Data in this table comes from the River Gipping 2020 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.






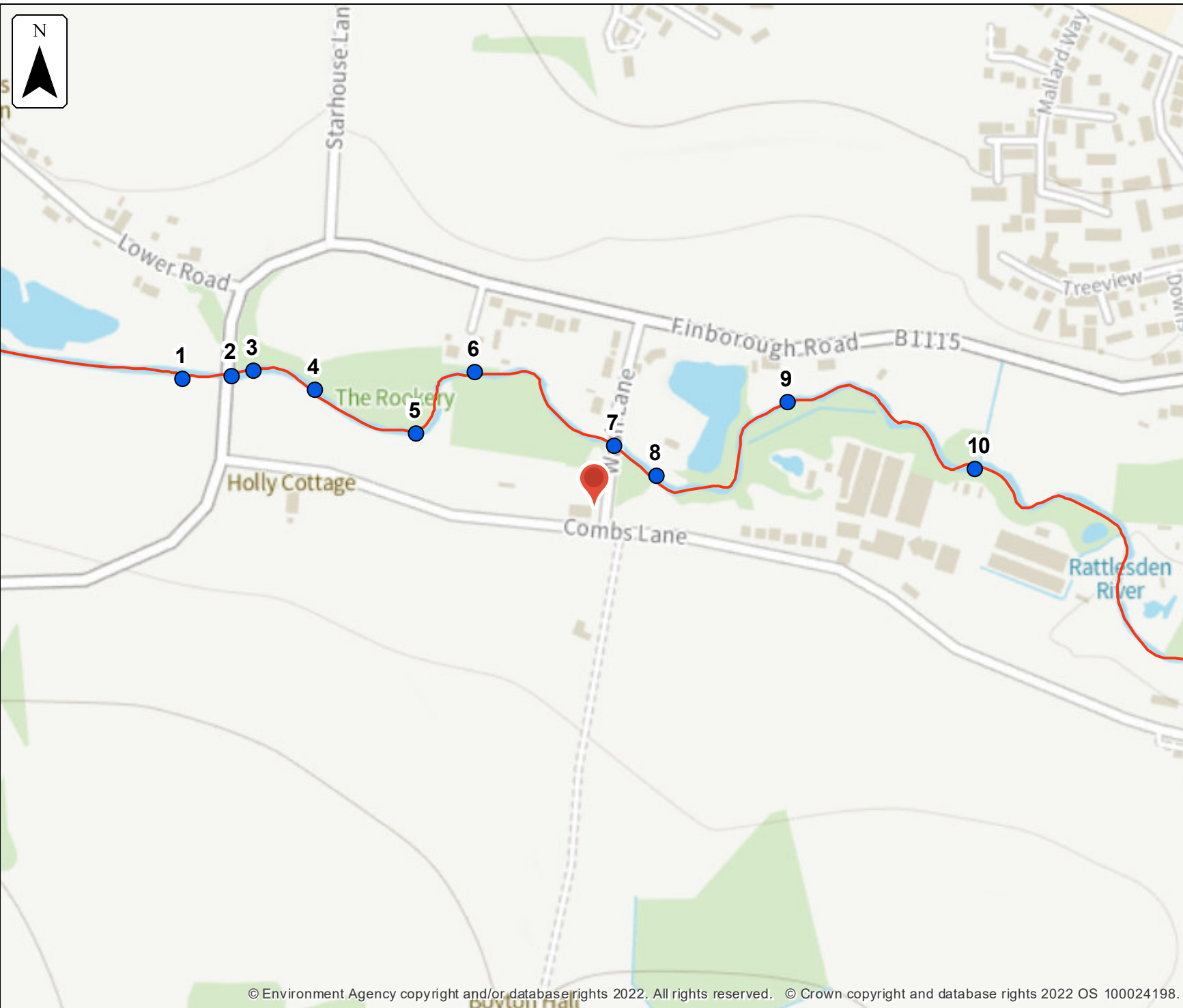
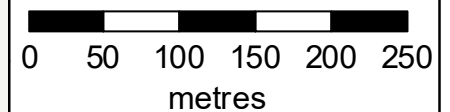
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
603039/258471

Scale Created
1:5,000 9 Aug 2022

Model name
River Gipping 2020

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+25%)		1.0% AEP (+35%)		0.1% AEP (+25%)	
				Level	Flow	Level	Flow	Level	Flow
1	1167893	602641	258594	32.98	29.38	32.91	23.96	33.16	40.36
2	1167819	602688	258597	32.67	11.59	32.50	11.58	32.90	12.54
3	1167789	602710	258602	32.40	12.19	32.48	12.21	32.90	12.87
4	1167753	602768	258584	32.37	27.86	32.22	23.60	32.59	33.15
5	1167675	602867	258541	31.92	21.46	31.99	23.07	32.37	30.33
6	1168418	602923	258601	31.73	19.34	31.79	21.13	32.22	24.48
7	1168419	603058	258529	31.62	20.28	31.68	21.59	32.09	28.93
8	1167634	603099	258500	31.16	20.20	31.22	21.48	31.60	30.95
9	1167786	603226	258572	30.79	21.38	30.85	22.60	31.25	29.86
10	1167932	603408	258506	30.72	28.0	30.62	23.66	30.87	36.15

Data in this table comes from the River Gipping 2020 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.




Defended modelled fluvial extent and height

Location (easting/northing)
603039/258471










Scale Created
1:2,500 9 Aug 2022

Model name
Gipping 2020 Mott MacDonald

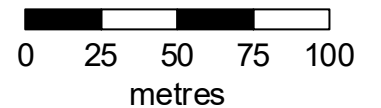
 Selected location

 Main river

Modelled 2D grid
Water level in mAOD

-  0 - 31.0
-  31.0 - 31.25
-  31.25 - 31.5
-  31.5 - 31.75
-  31.75 - 32.0
-  32.0 - 32.25
-  32.25 - 32.5
-  32.5 - 32.75
-  32.75 - 33.0

This map shows the 0.1% AEP height data



Sample point data

Defended

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	602989	258421	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	603014	258421	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	603039	258421	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	603064	258421	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	603089	258421	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	602989	258446	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	603014	258446	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
8	603039	258446	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
9	603064	258446	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	603089	258446	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	602989	258471	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	603014	258471	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
13	603039	258471	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	0.11	32.00
14	603064	258471	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	603089	258471	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
16	602989	258496	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	603014	258496	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	0.12	32.03
18	603039	258496	NoData	NoData			NoData	NoData	NoData	NoData	0.12	31.66	0.47	32.01
19	603064	258496	NoData	NoData			NoData	NoData	0.12	31.52	0.24	31.64	0.59	31.99
20	603089	258496	NoData	NoData			0.26	31.39	0.31	31.44	0.45	31.57	0.77	31.90
21	602989	258521	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	0.14	32.07
22	603014	258521	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	0.26	32.04
23	603039	258521	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	0.34	32.02
24	603064	258521	0.12	31.20			0.37	31.45	0.42	31.51	0.56	31.65	0.91	31.99
25	603089	258521	NoData	NoData			NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Data in this table comes from the Gipping 2020 Mott MacDonald model.

Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.



Defended climate change modelled fluvial extent and height

Location (easting/northing)
603039/258471

Scale Created
1:2,500 9 Aug 2022

Model name
**Gipping 2020 Mott
MacDonald**

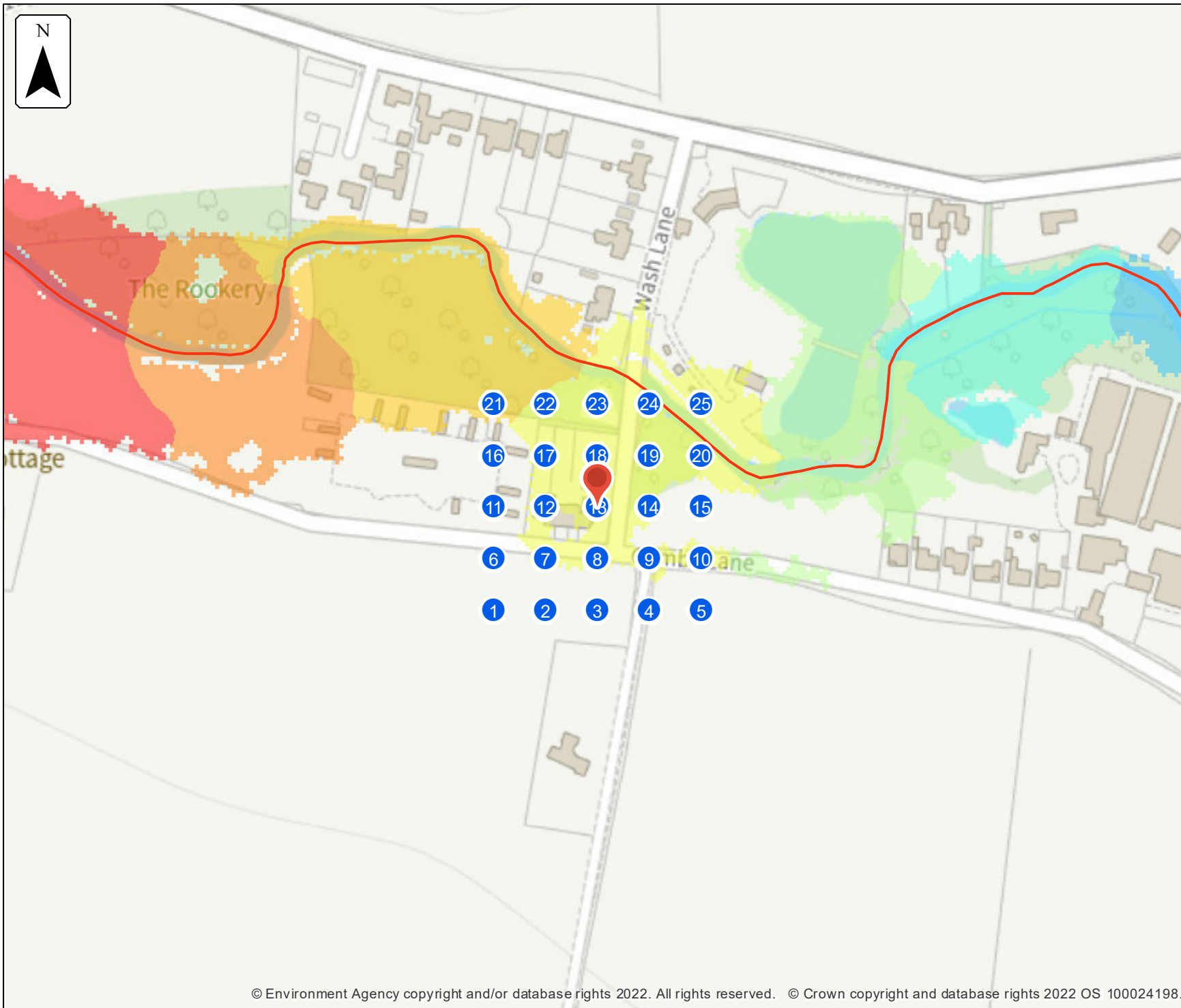
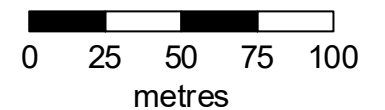
Selected location

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 31.0
- 31.0 - 31.25
- 31.25 - 31.5
- 31.5 - 31.75
- 31.75 - 32.0
- 32.0 - 32.25
- 32.25 - 32.5
- 32.5 - 32.75
- 32.75 - 33.0

This map shows the
0.1% AEP +25% height data



Sample point data

Defended climate change

Label	Easting	Northing	1% AEP (+25%)		1% AEP (+35%)		1% AEP (+65%)		0.1% AEP (+25%)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	602989	258421	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	603014	258421	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	603039	258421	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	603064	258421	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	603089	258421	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	602989	258446	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	603014	258446	NoData	NoData	NoData	NoData	NoData	NoData	0.22	32.21
8	603039	258446	NoData	NoData	NoData	NoData	NoData	NoData	0.22	32.21
9	603064	258446	NoData	NoData	NoData	NoData	NoData	NoData	0.06	32.21
10	603089	258446	NoData	NoData	NoData	NoData	NoData	NoData	0.01	32.16
11	602989	258471	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	603014	258471	NoData	NoData	NoData	NoData	NoData	NoData	0.07	32.22
13	603039	258471	NoData	NoData	NoData	NoData	0.03	31.93	0.32	32.21
14	603064	258471	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	603089	258471	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
16	602989	258496	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	1% AEP (+25%)		1% AEP (+35%)		1% AEP (+65%)		0.1% AEP (+25%)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	603014	258496	NoData	NoData	NoData	NoData	0.04	31.95	0.32	32.23
18	603039	258496	0.17	31.70	0.23	31.77	0.40	31.94	0.68	32.22
19	603064	258496	0.29	31.68	0.35	31.75	0.51	31.91	0.79	32.19
20	603089	258496	0.50	31.62	0.56	31.68	0.70	31.83	0.97	32.10
21	602989	258521	NoData	NoData	NoData	NoData	0.07	32.00	0.34	32.27
22	603014	258521	NoData	NoData	0.02	31.80	0.18	31.96	0.46	32.24
23	603039	258521	0.03	31.71	0.10	31.78	0.26	31.95	0.54	32.22
24	603064	258521	0.61	31.70	0.68	31.76	0.83	31.92	1.11	32.19
25	603089	258521	NoData	NoData	NoData	NoData	NoData	NoData	0.17	32.12

Data in this table comes from the Gipping 2020 Mott MacDonald model.

Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the East Anglia Environment Agency team at enquiries_eastanglia@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

203/2022: 4 Wash Lane Corner, Great Finborough, Stowmarket, Suffolk IP14 3BJ

Environment Agency Asset Information

Open Channel: 377718

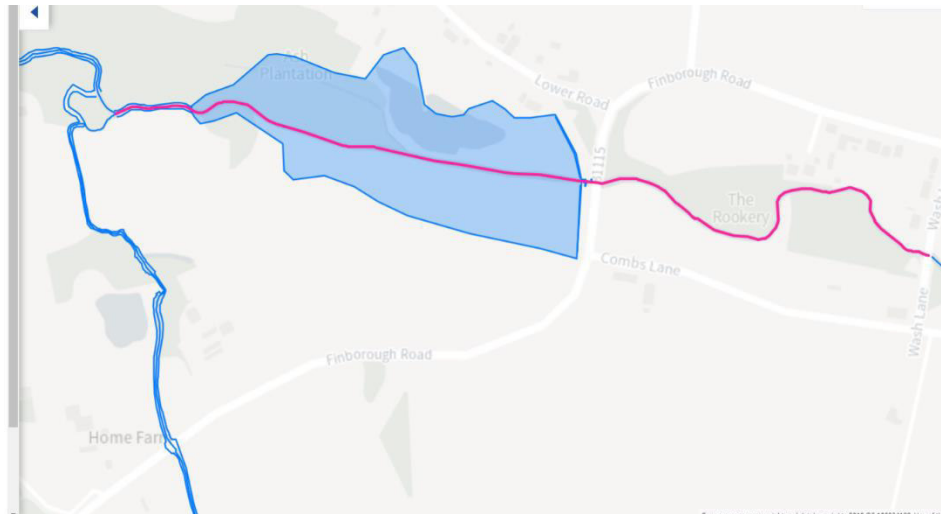
Asset Maintenance History

Basics

Asset Name Open Channel: 377718
Asset ID 377718
Asset Category Channel
Asset Type Open Channel
Actual Condition Fair
Asset Maintainer Environment Agency
Last Inspection Date 2021-11-03
Next Inspection Date 2023-11-02
Primary Purpose flood risk management
Protection Type fluvial
Target Condition Fair
More info [View asset type in Data Requirements Library](#)
Additional asset information [View additional asset information](#)

Management

EA Area Essex Norfolk and Suffolk
East Anglia
Regional Flood Committee Anglian Eastern RFCC
Westminster Constituency Bury St. Edmunds Co Const

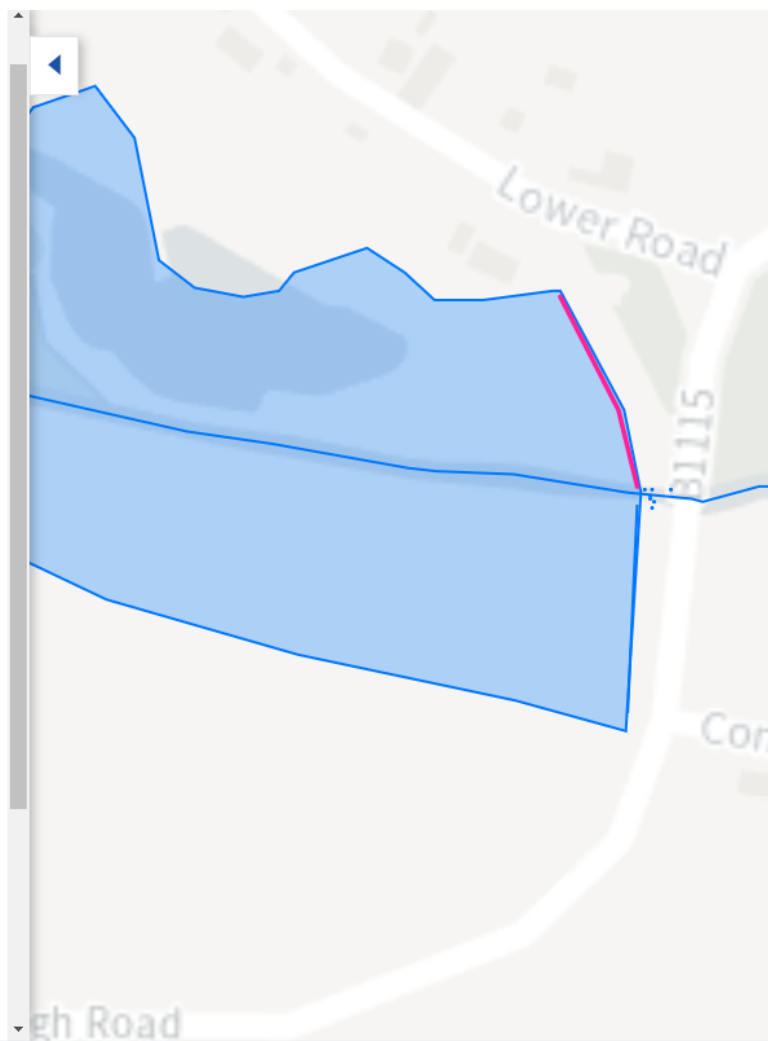


Rattlesden FSR left bank embankment

Asset

Basics

Asset Name Rattlesden FSR left bank embankment
Asset ID 179960
Asset Category Defence
Asset Type **Embankment**
Actual Downstream Crest Level 33.25m
Actual Downstream Crest Level Data Quality Flag Adequate
Actual Upstream Crest Level 33.55m
Actual Upstream Crest Level Adequate Data Quality Flag
Asset Maintainer Environment Agency
Bank Left
Designed Downstream Crest Level 100m
Effective Crest Level 33.25m
Effective Crest Level Data Quality Flag Adequate
Include in Floodmap not_yet_considered
Last Inspection Date 2022-07-06
Next Inspection Date 2023-01-06
Primary Purpose flood risk management
Protection Type fluvial
More info [View asset type in Data Requirements Library](#)
Additional asset information [View additional asset information](#)



Rattlesden FSR right bank spillway embankment

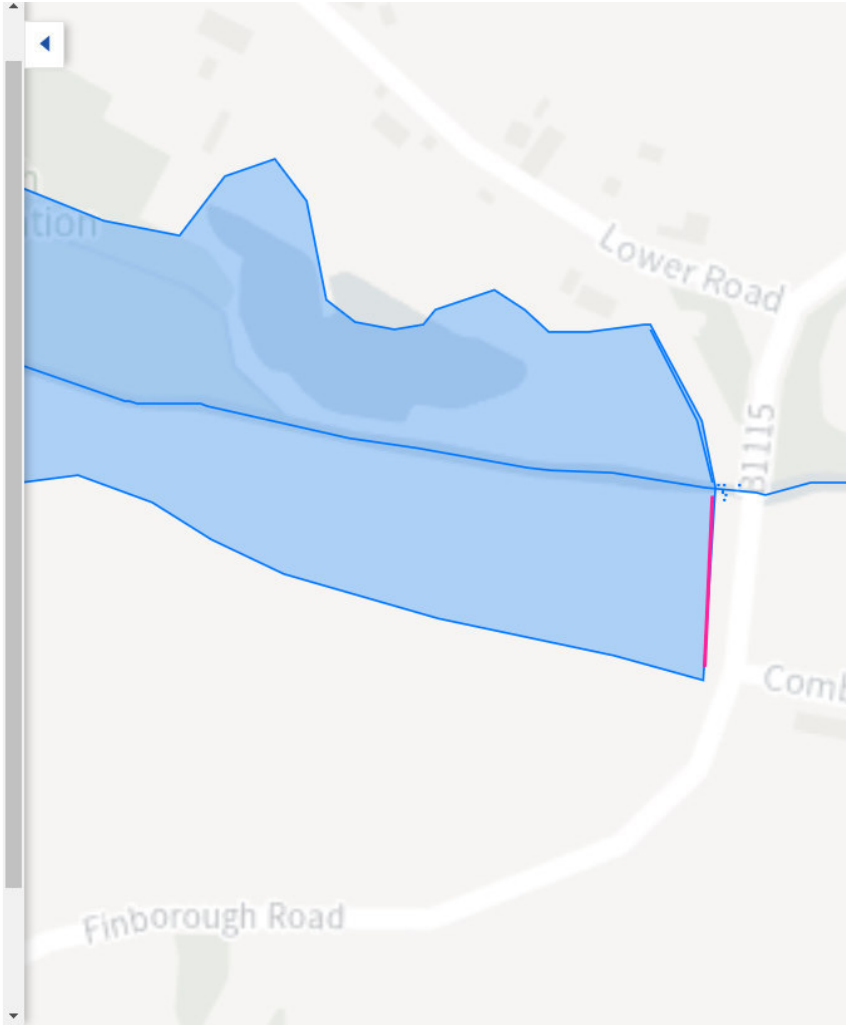
< Asset Maintenance Programme Maintenance >

Basics

Asset Name	Rattlesden FSR right bank spillway embankment
Asset ID	179961
Asset Category	Defence
Asset Type	Embankment
Actual Downstream Crest Level	33.15m
Actual Downstream Crest Level Data Quality Flag	Adequate
Actual Upstream Crest Level	33.02m
Actual Upstream Crest Level Data Quality Flag	Adequate
Asset Maintainer	Environment Agency
Bank	Right
Designed Downstream Crest Level	100m
Effective Crest Level	32.51m
Effective Crest Level Data Quality Flag	Adequate
Include in Floodmap	not_yet_considered
Last Inspection Date	2022-07-06
Next Inspection Date	2021-04-01
Primary Purpose	flood risk management
Protection Type	fluvial
More info	View asset type in Data Requirements Library
Additional asset information	View additional asset information

Management

EA Area	Essex Norfolk and Suffolk East Anglia
Regional Flood Committee	Anglian Eastern RFCC
Westminster Constituency	Bury St. Edmunds Co Const



Rattlesden FSR flood storage area

Asset Maintenance History

Basics

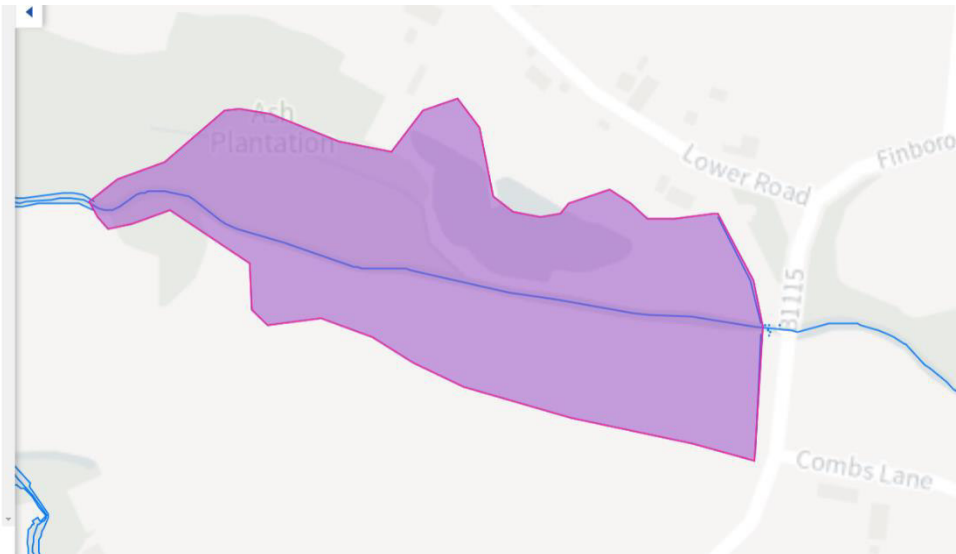
Asset Name	Rattlesden FSR flood storage area
Asset ID	343085
Asset Category	Land
Asset Type	Water Storage Area
Asset Maintainer	Environment Agency
Include in Floodmap	considered_and_accepted
Last Inspection Date	2022-07-06
Next Inspection Date	2023-01-06
Primary Purpose	flood risk management
Protection Type	fluvial
More info	View asset type in Data Requirements Library
Additional asset information	View additional asset information

Management

EA Area	East Anglia Essex Norfolk and Suffolk
Regional Flood Committee	Anglian Eastern RFCC
Westminster Constituency	Bury St. Edmunds Co Const

Temporal

Asset Start Date	2012-01-10
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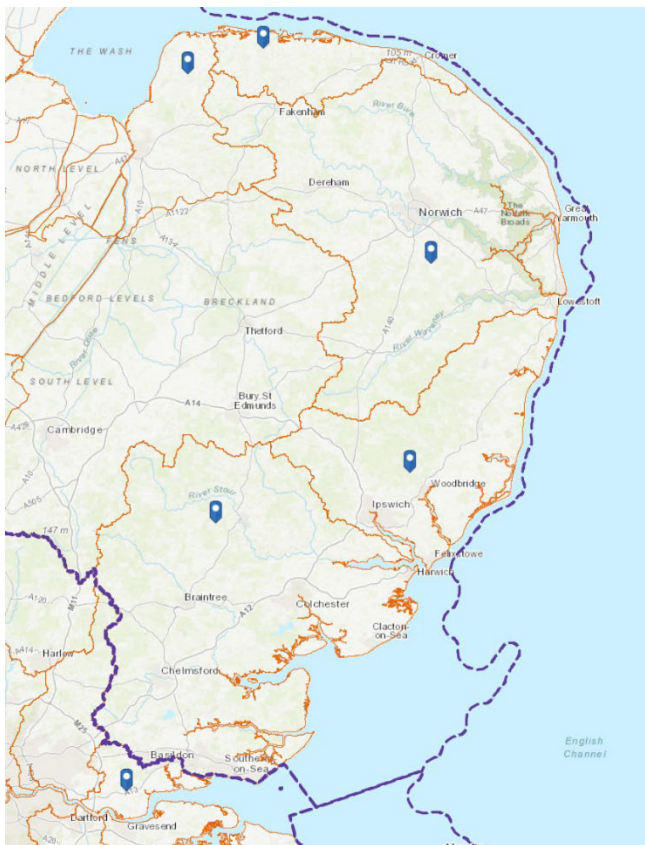
Climate Change Scenarios for Modelling – East Anglia

Here is the guidance and allowances for our area for the 2080s epoch.

[Flood risk assessments: climate change allowances](#)

[Flood and coastal risk projects, schemes and strategies: climate change allowances](#)

2080s Epoch	NW Norfolk	N Norfolk	Broadland	E Suffolk	Essex	S Essex	Old Anglian	Old Thames
Central	23%	14%	11%	19%	25%	17%	25%	25%
Higher Central	33%	24%	20%	29%	38%	26%	35%	35%
Upper End	57%	48%	44%	54%	72%	48%	65%	70%



Capital Scheme Project Guidance:

Fluvial:

We need to use the central climate change allowance as the design allowance (for each design option and baseline) and the scheme needs to be designed to provide protection for the lifetime of the scheme to the planned standard of protection + central allowance (so if a scheme provides protection for a 90 year period, and is designed to protect to a 1% AEP, then it must protect all properties that we want to claim in the 1% AEP + central allowance event until the year 2111 (90 years' time)).

OM2A can only be claimed for present day risk, but the scheme must protect properties at risk in both the present day and central allowance event for the period of benefits (so in this example the scheme must protect properties in the 1% AEP and 1% AEP + central allowance in 2111 (90 years' time)) for them to be claimed.

OM2B can be used to claim any additional properties that are protected by the scheme if they are at risk by 2040 (central allowance) but not at risk in the present day event (so not at risk in the 1% AEP

event but are at risk in the 1% AEP. Properties at risk after 2040 cannot be claimed as OM2 (could their benefits be claimed as OM1 though?).

We need to use the higher central allowance to test the impacts to identify potential extra resilience / mitigation (for leading design options only and the baseline scenario). This will enable us to amend the scheme design if required.

If we do amend the design to cope with the higher central event, then we could also run the higher central allowance to 2040 to claim additional OM2 (not confirmed if this is allowed or not).

Finally we need to use the extreme (upper end) allowance to test upper end impacts (for final design only but generally no need to amend design following this – there isn't a requirement here to run the baseline scenario without the scheme).

Coastal:

The same rules apply as above except the higher central should be used as the design allowance, and the upper end allowance should be used for more severe climate change. H++ should be used to test the more extreme climate change version.

Flood Risk Assessment Guidance:

Fluvial:

For fluvial assessments, the FRA guidance states that for all but essential infrastructure, the central allowance should be used to assess climate change impacts (presumably on the 1% AEP).

For refuge the central allowance should also be used (presumably the 0.1% AEP).

For essential infrastructure the higher central allowance should be used.

The upper end allowances are only needed where a credible maximum scenario is required (NSIP, new settlement, urban extension).

Coastal:

For coastal impacts, both the higher central and upper end allowances need to be assessed.

H++ is only required where a credible maximum scenario is required (NSIP, new settlement, urban extension).

Assuming for all of these a 100 year period of development.

SFRA Guidance:

Updated flood zones to the 2080s epoch (for 100 years' time) are required for the 5% AEP (fluvial and coastal – FZ3b – functional floodplain), 1% AEP (fluvial only – FZ3a), 0.5% AEP (coastal only – 3a) and 0.1% AEP (fluvial and coastal – FZ2).

There is no specific guidance on what allowances (central / higher central / upper end) should be used to create these flood zones, and depending on the development requirements for FRAs different allowances should be used. Ultimately this is a decision for the LPA.

What have we run previously?

In terms of our requirements for modelling, currently we are modelling the following four climate change scenarios as part of a fluvial model:

- 1% AEP: Central (50th) and Higher Central (70th) fluvial increases with Higher Central (70th) sea level rise.
- 1% AEP: Upper End (95th) fluvial increase with Upper End (95th) sea level rise.
- 0.1% AEP Central (50th) fluvial increase with Higher central (70th) sea level rise.

For a coastal model we currently request:

- 0.5% AEP: Higher Central (70th) and Upper End (95th) sea level rise
- 0.1% AEP: Higher Central (70th) and Upper End (95th) sea level rise

These requirements were only to satisfy the requirements for flood risk assessments and did not really cover the requirements for scheme design (standard baseline runs were included).

What do we need to model and when based on the new guidance?

Split this into a number of stages as you would require a phased approach to delivery to avoid running unnecessary scenarios.

Stage 1 Baseline

- 5%, 2%, 1% and 0.5% AEPs (baseline scenario for OM2A for projects) (with and without defences if defences are present).
- 5% AEP + central estimate (with higher central tidal increase) to 2121 (for FZ 3b for SFRAs) (with and without defences if defences are present). [For coastal projects it is the 5% AEP + higher central tidal increase.](#)
- 5% AEP + central estimate (with upper end tidal increase) to 2121 (for FZ 3b for SFRAs) (with and without defences if defences are present). [For coastal projects it is the 5% AEP + upper end tidal increase.](#)
- 1% AEP + central estimate (with higher central tidal increase) to 2121 (for planning and SFRAs) (with and without defences if defences are present). [For coastal projects it is the 1% AEP + higher central tidal increase.](#)
- 1% AEP + central estimate (with upper end tidal increase) to 2121 (for planning and SFRAs) (with and without defences if defences are present). [For coastal projects it is the 1% AEP + upper end tidal increase.](#)
- 0.1% AEP + central estimate (with upper end tidal increase) to 2121 (for planning and SFRAs) (would assume higher central tidal increase is not required as we would use the upper end sea level rise for refuge?) (with and without defences if defences are present). [For coastal projects it is the 1% AEP + upper end tidal increase.](#)

And if we need information for essential infrastructure:

- 5% AEP + higher central estimate (with higher central tidal increase) to 2121 (for FZ3b for SFRAs, essential infrastructure) (with and without defences if defences are present). [For coastal projects this scenario would already have been run.](#)
- 5% AEP + higher central estimate (with upper end tidal increase) to 2121 (for FZ3b for SFRAs, essential infrastructure) (with and without defences if defences are present). [For coastal projects this scenario would already have been run.](#)
- 1% AEP + higher central estimate (with higher central tidal increase) to 2121 (for planning, essential infrastructure, and SFRAs) (with and without defences if defences are present). [For coastal projects this scenario would already have been run.](#)
- 1% AEP + higher central estimate (with upper end tidal increase) to 2121 (for planning, essential infrastructure, and SFRAs) (with and without defences if defences are present). [For coastal projects this scenario would already have been run.](#)
- 0.1% AEP + higher central estimate (with upper end tidal increase) to 2121 (for planning, essential infrastructure) (would assume higher central tidal increase is not required as we would use the upper end sea level rise for refuge?, and SFRAs) (with and without defences if defences are present). [For coastal projects this scenario would already have been run.](#)

We wouldn't routinely run the upper end scenario (as only required for credible maximum scenario).

Stage 2 Scheme Assessment

Once we know we are going to investigate a scheme in more detail we need to know the probable SOP to be provided and the benefits period the scheme will provide protection for.

- Proposed scheme SOP AEP (baseline scenario without scheme – only required if SOP is not 5%, 2%, 1% or 0.5% AEP).

- Proposed scheme SOP AEP + central estimate (with higher central tidal increase) to the benefits period of the scheme (baseline scenario without scheme – only required if SOP is not 5%, 2%, 1% or 0.5% and the benefits period is not 100 years to 2121). [For coastal projects the higher central allowance for sea level rise would be considered.](#)
- 5%, 2%, 1% and 0.5% AEPs + central estimate (with higher central tidal increase) to 2040 (baseline scenario for OM2B for projects). The 5% could be cut as it is unlikely that additional OM2B could be claimed for the very significant category if the property wasn't at risk in the present day 0.5% AEP. [For coastal projects it is these AEPs + higher central tidal increase.](#) Could run these scenarios earlier as part of the baseline if we know a scheme is likely).
- Proposed scheme SOP AEP and selection of AEPs (present day scheme scenario to satisfy any FRA – presumably 5%, 2%, 1% and 0.5%?).
- Proposed scheme SOP AEP + central estimate (with higher central tidal increase) to the benefits period of the scheme (scheme scenario to confirm that it provides protection to the required SOP for the benefits period of the scheme). [For coastal projects the higher central allowance for sea level rise would be considered.](#)
- 5%, 2%, 1% and 0.5% AEPs + central estimate (with higher central tidal increase) to the benefits period of the scheme (scheme scenario to work out what can be claimed for OM2A and OM2B and where the properties can be moved to). [For coastal projects it is these AEPs + higher central tidal increase.](#)

Stage 3 Severe Scenario

To assess impacts of dealing with this increased risk and to identify additional benefits that could be claimed.

- Proposed scheme SOP AEP + higher central estimate (with upper end tidal increase) to the benefits period of the scheme (baseline scenario) (not sure we need the baseline scenario here? – only required if SOP is not 5%, 2%, 1% or 0.5% and the benefits period is not 100 years to 2121). [For coastal projects the upper end allowance for sea level rise would be considered.](#)
- Proposed scheme SOP AEP + higher central estimate (with upper end tidal increase) to the benefits period of the scheme (scheme scenario to identify sensitivity to help inform preferred option). [For coastal projects the upper end allowance for sea level rise would be considered.](#)
- 5%, 2%, 1% and 0.5% AEPs + higher central estimate (with upper end tidal increase) to 2040 (baseline scenario to work out if there is additional OM2B that could be claimed if we design to the severe scenario) (if we can't claim additional OM2 by using the severe climate change then these don't need to be run). [For coastal projects the upper end allowance for sea level rise would be considered.](#)
- 5%, 2%, 1% and 0.5% AEPs + higher central estimate (with upper end tidal increase) to the benefits period of the scheme (scheme scenario to work out what can be claimed for OM2A and OM2B and where the properties can be moved to) (if we can't claim additional OM2 by using the severe climate change then these don't need to be run). [For coastal projects the upper end allowance for sea level rise would be considered.](#)

Following these runs, if the scheme design changes at all then stage 2 and stage 3 scenarios with the scheme included would need to be re-run.

Stage 4 Extreme Scenario

To show the impacts of extreme climate change, once design finalised and scheme decided.

- Proposed scheme SOP AEP + upper end estimate (with H++ tidal increase) to the benefits period of the scheme (baseline scenario) (not sure we need the baseline scenario here?). [For coastal projects the H++ allowance for sea level rise would be considered.](#)
- Proposed scheme SOP AEP + upper end estimate (with H++ tidal increase) to the benefits period of the scheme (scheme scenario). [For coastal projects the H++ allowance for sea level rise would be considered.](#)

Following finalising of the scheme additional runs may be required to support our normal mapping products for our usual product requests (scheme with selection of AEPs and any updates to

climate change runs to support planning). If the scheme is a conveyance scheme / passive then it may require an update to the without defences outputs as well (5%, 1% and 0.1% AEPs).

Flood Zone 3 Factsheet

East Anglia (East)

Oct 2017 - v.6

This factsheet provides information to assist with the preparation of a Flood Risk Assessment (FRA) in support of development proposals reviewed by the East Anglia (East) teams, based at Ipswich. It should be read alongside the Environment Agency's general FRA advice ([FRA Guidance note 3](#)). For information relating to proposals managed by East Anglia (West) teams based at Brampton, please contact: planning.brampton@environment-agency.gov.uk.

This factsheet covers issues relating to FRAs only and does not address other matters we may take into account when considering development proposals (e.g. proximity to a watercourse, contaminated land, Water Framework Directive and biodiversity requirements). For further information on those issues, please contact: planning.ipswich@environment-agency.gov.uk

Sequential Test and Exception Test

The Local Planning Authority (LPA) will need to be satisfied that the proposed development passes the flood risk Sequential Test, and if applicable, the first part of the Exception Test, in line with requirements of the National Planning Policy Framework (NPPF). We therefore strongly suggest you speak to them prior to commencing work on an FRA. Information regarding the [aim of the Sequential Test](#), [applying the Sequential Test](#) and the [Exception Test](#) can all be found in the Practice Guide supporting the NPPF.

Inappropriate development

[Table 2](#) of the Practice Guide categorizes developments according to their vulnerability and [table 3](#) sets out which vulnerabilities are inappropriate in Flood Zone 3. You should be aware that we are likely to object in principle where it is indicated that a development is not compatible in Flood Zone 3. Please note that Flood Zone 3b is defined by the Local Planning Authority's Strategic Flood Risk Assessment, or by the 5% (1 in 20 year) modelled flood outlines and levels held by the Environment Agency.

More detail on what should be in the FRA (additional to that highlighted in Guidance Note 3):

The FRA should assess all sources of flooding and provide sufficient information on the characteristics of flooding at the site, such as frequency, depth, velocity, speed of onset, and duration. As a minimum the FRA needs to assess the flood risk on site by comparing our modelled flood levels with a GPS verified topographical survey of the site to determine the anticipated flood depths during the 5% (1 in 20), 1% / 0.5% (1 in 100 / 200) (design) and 0.1% (1 in 1000) (extreme) events including allowances for climate change. Climate change allowances can be found on [our website](#). If the area is protected by defences then the FRA should consider both the actual flood risk to the site through overtopping of the defences, and the residual risk posed by the defences being breached.

- **Sequential approach on site**

If the site contains a range of Flood Zones, the sequential approach should be applied within the site to direct development to the areas of lowest flood risk. If it isn't possible to locate all development in Flood Zone 1, then the most vulnerable elements should be located in the lowest risk parts of the site.

- **Finished Floor Levels**

Proposals for 'more vulnerable' development should include floor levels set no lower than 300 mm above the level of any flooding that would occur if defences were overtopped in a 1% / 0.5% flood event (including allowances for climate change). Safe refuge should also be provided above the 0.1% undefended/breach flood level (including allowances for climate change). We are likely to raise an objection where these requirements are not achieved.

We recommend 'less vulnerable' development also meets this requirement to minimize disruption and costs in a flood event. If this is not achievable then it is recommended that a place of refuge is provided above the 0.1% flood level (including allowances for climate change). Where safety is reliant on refuge it is important that the building is structurally resilient to withstand the pressures and forces (hydrostatic & hydrodynamic) associated with flood water. The LPA may need to receive supporting information and calculations to provide certainty that the buildings will be constructed to withstand these water pressures.

- **Safe Access**

During a flood, the journey to safe, dry areas completely outside the extent of a 1% / 0.5% flood event (including allowances for climate change), should not involve crossing areas of potentially fast flowing water. Those venturing out on foot in areas where flooding exceeds 100 millimetres or so would be at risk from a wide range of hazards, including, for example unmarked drops, or access chambers where the cover has been swept away. Safe access and egress routes should be assessed in accordance with the guidance document '[FD2320 \(Flood Risk Assessment Guidance for New Developments\)](#)'.

- **Emergency Flood Plan**

Where safe access cannot be achieved, or if the development would be at actual flood risk or residual risk of flooding in a breach, an emergency flood plan must be provided. The plan should deal with matters of evacuation and refuge, and should demonstrate that people will not be exposed to flood hazards. The emergency flood plan should be submitted as part of the FRA and will need to be agreed with the Local Planning Authority.

- **Flood Resilience / Resistance Measures**

To minimize the disruption and cost implications of a flood event we encourage development to incorporate flood resilience/resistance measures up to the extreme 0.1% climate change flood level. Information on preparing property for flooding can be found in the documents '[Improving the Flood performance of new buildings](#)' and '[Prepare your property for flooding](#)'.

- **Betterment**

Every effort should be made by the applicant to improve the flood risk to the local area, especially if there are known flooding issues. Opportunities should also be taken to provide environmental enhancements as part of the design, for example naturalizing any rivers on the site with a buffer zone on both sides.

- **Increases in Built Footprint (excluding open coast situations)**

It will need to be shown that any increase in built footprint within the extent of a 1% flood event (including allowances for climate change), can be directly compensated for on a volume-for-volume and level-for-level basis to prevent a loss of floodplain storage. If there are no available areas for compensation above the design flood level and compensation will not be possible, then a calculation of the offsite flood risk impacts will need to be undertaken. If this shows significant offsite impacts then no increases in built footprint will be allowed. Further guidance on the provision of compensatory flood storage is provided in section A3.3.10 of the CIRIA document C624.

Flood Defence Consent

Flood Defence Consents now fall under the Environmental Permitting (England and Wales) Regulations 2010 system (EPR). You may need an environmental permit for flood risk activities if you want to do work in, under, over or within 8 metres of a fluvial river or any flood defence structure or culvert / 16m from a tidal river or any flood defence structure or culvert. New forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>.

Local policies and recommendations

You will need to demonstrate to the Local Planning Authority that the requirements of any local flood risk planning policies have been met and the recommendations of the relevant Strategic Flood Risk Assessment, Shoreline Management Plans and Catchment Flood Management Plans have been considered.

Further Information:

If you require the flooding information we hold for this site then please email our local Customers and Engagement Team: enquiries_eastanglia@environment-agency.gov.uk. For further details on our flood map products please visit our website at: www.environment-agency.gov.uk/research/planning/93498.aspx.



Product 4: Supporting Documentation

GUIDANCE INCLUDED:

1. PRODUCT 4 FACT SHEET.
2. FLOOD ZONE 3 FACTSHEET - EAST ANGLIA (EAST)
3. FLOOD RISK ASSESSMENT (FRA) CHECKLIST
4. NEW TIDAL CLIMATE CHANGE ALLOWANCES FOR ESSEX, NORFOLK AND SUFFOLK
5. UPDATED FLUVIAL CLIMATE CHANGE ALLOWANCES FOR ESSEX, NORFOLK AND SUFFOLK

PARTNERSHIP AND STRATEGIC OVERVIEW TEAM – EAST ANGLIA (EAST)

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
03459 88 11 88

Product 4 Fact Sheet

Thank you for your enquiry.

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

Please refer to the Open Government Licence available here:

<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> which explains the permitted use of this information.

You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

Please be aware that flooding can come from different sources. Examples of these are:

- from rivers or the sea
- surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system)
- overflowing or backing up of sewer or drainage systems which have been overwhelmed
- groundwater rising up from underground aquifers

Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea.

Areas Benefiting from Flood Defences

Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences specifically in the event of flooding from rivers with a 1% (1 in 100) chance in any given year or flooding from the sea with a 0.5% (1 in 200) chance in any given year.

If the defences were not there, these areas would be flooded. An area of land may benefit from the presence of a flood defence even if the defence has overtopped, if the presence of the defence means that the flood water does not extend as far as it would if the defence were not there.

Flood Risk Assessment Checklist

If you are planning on using this data within a Flood Risk Assessment, we recommend that you take the time to fill in the attached FRA checklist, and to read the attachments which contain information relevant to the area that interests you.

We would like to stress the importance of filling in the Flood Risk Assessment check list and providing up-to-date and correct data. The data will be checked against our records when we review the Flood Risk Assessment in our role as statutory consultee.

It is important that you provide a map in section 2 of the FRA checklist (See Appendix A), including the highest and most representative flood levels for your site. We recommend using a number of nodes that provide a fair representation of the modelled data across your site. For example, if it is a small extension (< 250 square metres) then approximately 5-10 nodes would be sufficient. For larger sites, approximately 10 to 20 nodes would be appropriate.

If you have a new enquiry or would like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months by email at Enquiries_EastAnglia@environment-agency.gov.uk

East Anglia Area

Ipswich Office, Icen House, Cobham Road, Ipswich, Suffolk, IP3 9JD

General Enquiries: 03708 506506

Email: enquiries@environment-agency.gov.uk

Website: <https://www.gov.uk/government/organisations/environment-agency>



Flood Zone 3 Factsheet

East Anglia (East)

Oct 2017 - v.6

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Flood Defence Consent

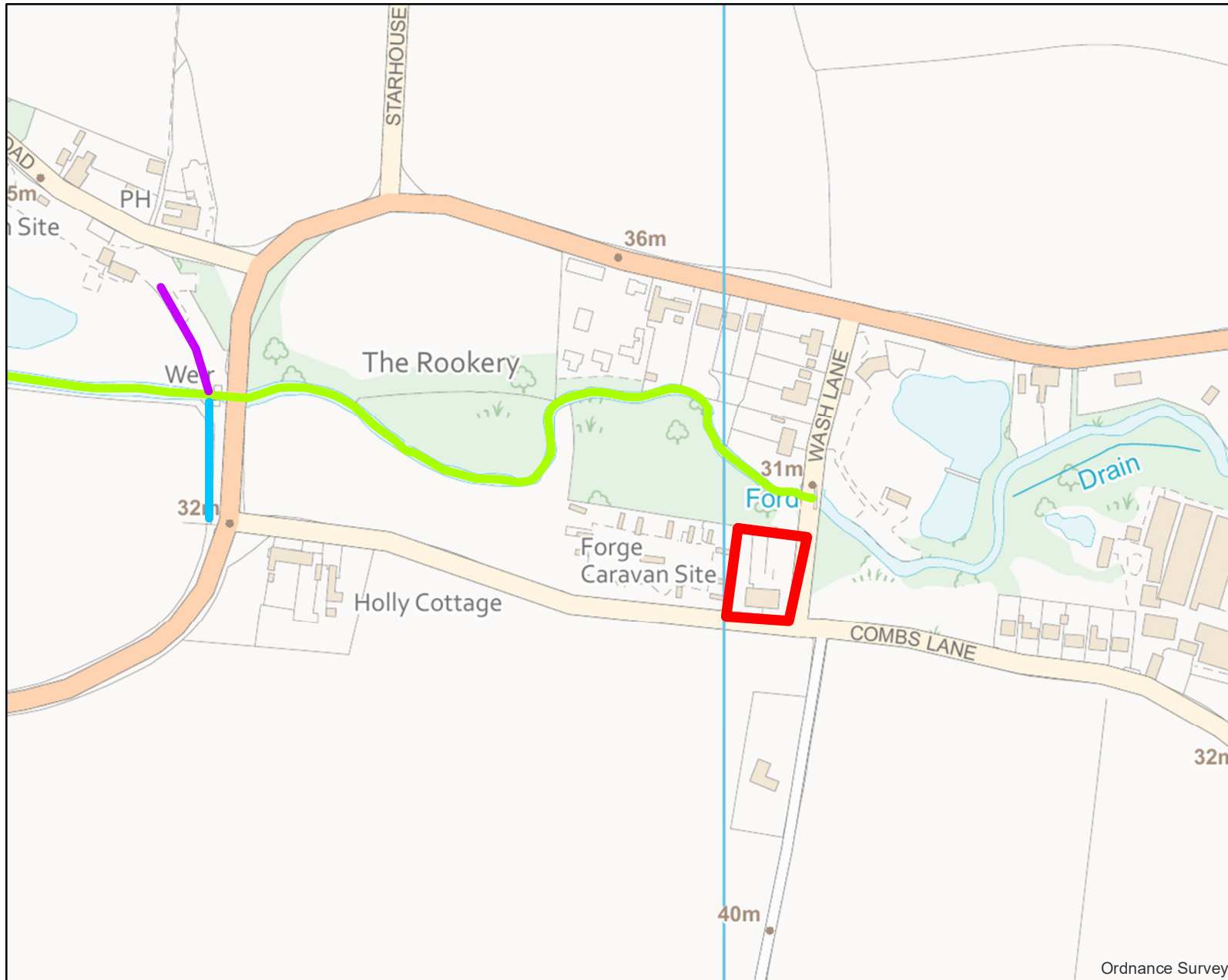
Flood Defence Consents now fall under the Environmental Permitting (England and Wales) Regulations 2010 system (EPR). You may need an environmental permit for flood risk activities if you want to do work in, under, over or within 8 metres of a fluvial river or any flood defence structure or culvert / 16m from a tidal river or any flood defence structure or culvert. New forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>.

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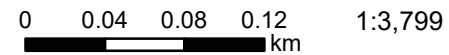


Legend

AIMSID

- 179960
- 179961
- 377718
- Site

Ordnance Survey

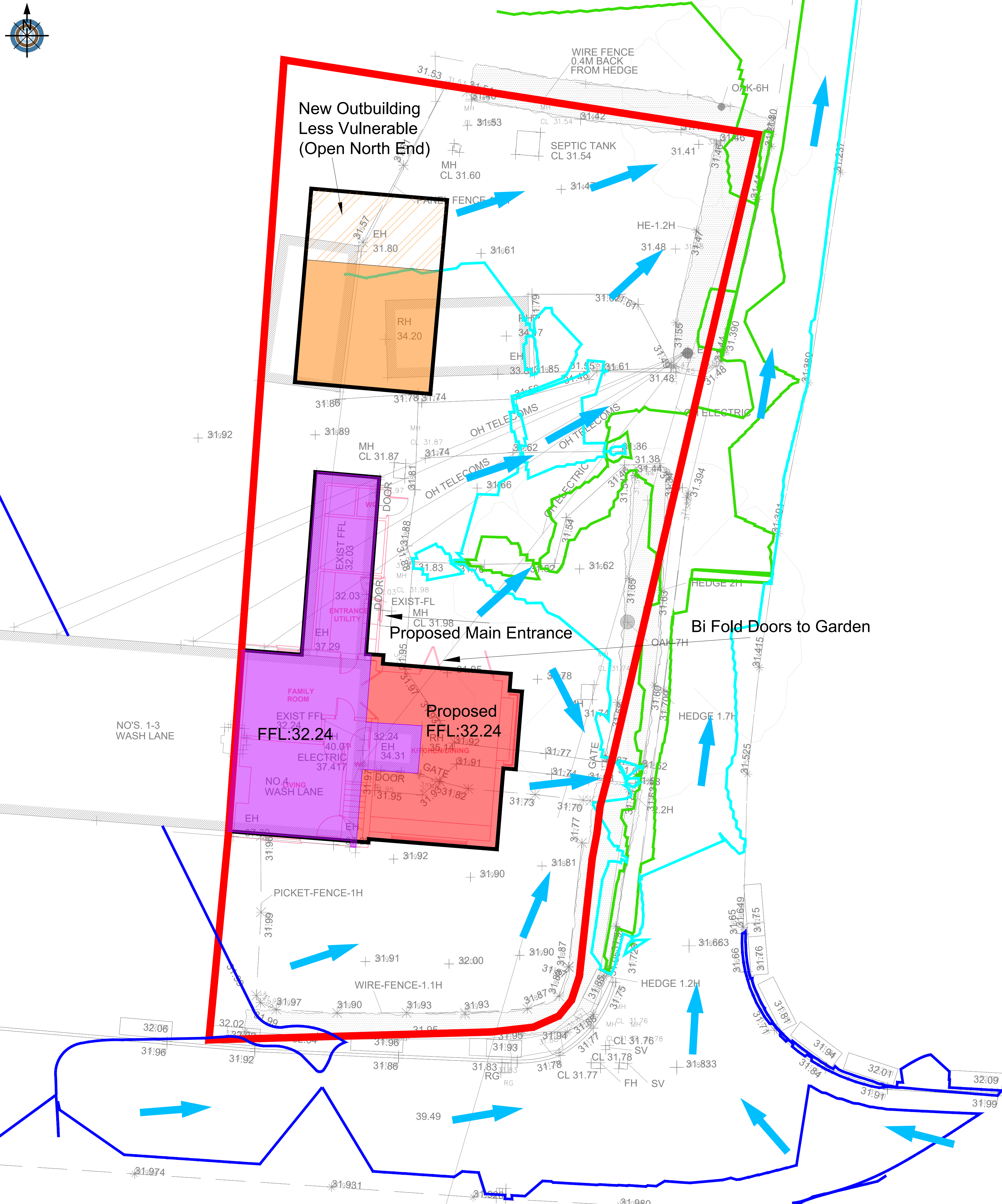


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FLOOD RISK ASSESSMENT

APPENDIX E

Proposed Site Layout and Flood Extents



- NOTES:**
1. This drawing is to be read in conjunction with GHB series 203/2022 drawings and documents and any other relevant project team documents.
 2. Preliminary Issue - This drawing is not to be used for construction or detailed pricing purposes. Any work undertaken before approvals are received (in writing) are at risk of abortive works.
 3. This drawing has been prepared solely for the purpose of obtaining a Planning Consent based on information available and planning requirements at the date of issue only.

P2	12/10/22	Cart Lodge Added
P1	15/09/22	Initial Issue
Revision Date Description		
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GHBullard & Associates LLP Civil and Traffic Engineering Consultants		
T: (01359) 235071		27 Barton Road,
F: (01359) 231138		Thurston,
W: http://www.ghbullard.co.uk		Suffolk,
Partnership No. OC38330, Registered in England and Wales		IP31 3PA
Client: MRS K DYKES		
Project: 4 WASH LANE CORNER, GREAT FINBOROUGH STOWMARKET, SUFFOLK		
Drawing Title: FLOOD RISK ASSESSMENT PROPOSED SITE LAYOUT AND FLUVIAL FLOOD EXTENTS		
Scale: NTS @ A1		
Date: SEP 2022	Drawn: BAF	Checked: JAH
DWG Reference: 203-2022.DWG		
Status: FOR INFORMATION		
Drawing Number: 203/2022/011	Revision: P2	
<small>PH = Preliminary, CF = Construction, AB# = As Built</small>		

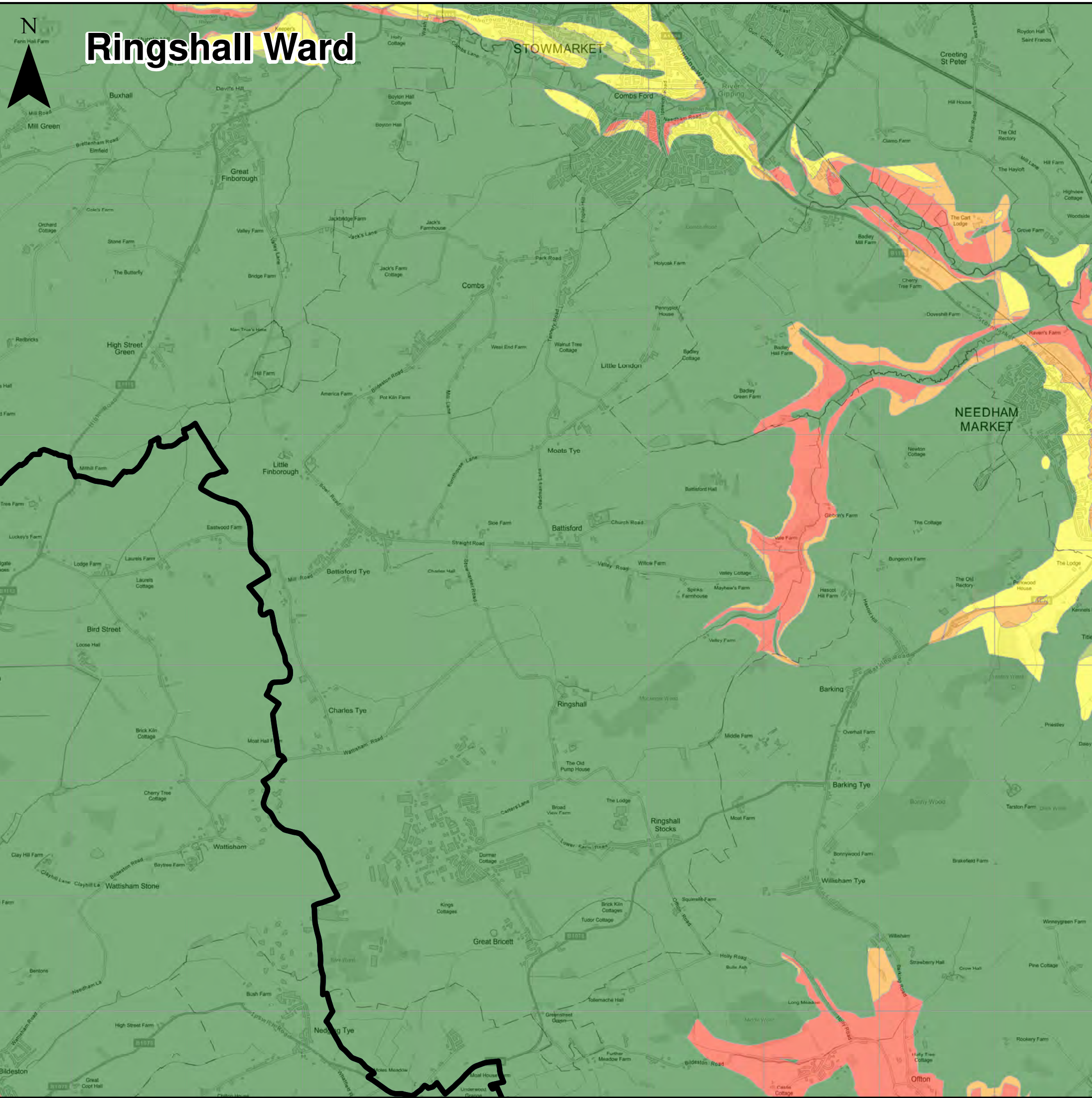
Legend-

- Site Boundary- Area:0.05ha
- Extension: 42.0m²
- Existing Dwelling: 66.8m²
- 1in100 Year Defended Fluvial Flood Level 31.43mAOD
- 1in100+25% Year Undefended Fluvial Flood Level 31.62mAOD
- 1in1000 Year Defended Fluvial Flood Level 32.00mAOD
- ➔ Existing Flowpath
- Proposed Cart Lodge

FLOOD RISK ASSESSMENT

APPENDIX F









Babergh and Mid-Suffolk Level 1 SFRA Groundwater Flood Risk Map



Ringshall Ward



Legend

-  Babergh District
-  Mid Suffolk District
-  Ward Boundary
-  This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits
-  Flooding from groundwater is not likely
-  There is a risk of flooding to subsurface assets but surface manifestation of groundwater is unlikely
-  Within this zone there is a risk of groundwater flooding to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally
-  Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots



Appendix G - JBA Groundwater Map

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DATE DRAWN:
20/08/2020

