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Preliminary Flood Risk Assessment

15 December 2025

MAC Developments & Construction Ltd
Land south of Lindley Wood, Fenn Lanes, Fenny Drayton, Nuneaton, CV13 6BJ

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CONTENTS

1. Introduction

The following document is a Preliminary Flood Risk Assessment carried out by Oakshire Environmental, and includes details of the site, vulnerability classification, flood linkages and an evaluation of risk.

1.1 Project Overview

The client's proposed project involves the change of use of the site from residential to commercial storage on land south of Lindley Wood, Fenn Lanes, Fenny Drayton, Nuneaton CV13 6BJ. Oakshire Environmental have carried out a Preliminary Flood Risk Assessment as described below.

1.2 Purpose of Investigation

The objectives of the Preliminary Flood Risk Assessment were to:

- Develop a detailed assessment of the site.
- Identify potential flood sources, receptors and pathways at the site.
- Assess the level of potential flood risk.
- Determine the requirement or scope of further investigations or mitigation measures.

1.3 Scope of Work

- Desk studies will be carried out to develop a detailed assessment of the site location, setting and vulnerability classification, through analysis of information obtained from sources including the Environment Agency, Local & National Authorities, Strategic Flood Risk Assessments and Digital Terrain Model (DTM) LiDAR topographical surveys.
- This information will be used to identify potential flood sources, receptors and pathways at the site, as part of an initial Conceptual Site Model.
- To assess the level of potential flood risk, a Conceptual Site Model will be produced to categorise the potential severity of the impact of the flood linkage on the receptor and the probability of the flood linkage being present.
- Following the assessment of flood linkages, an evaluation of flood risk, mitigation measures, surface water management and safe access and egress will be conducted to determine the requirement or scope of further investigations.
- Supporting appendix to include photographs, maps and plans of the site.

1.4 Limitations

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This report excludes consideration of potential hazards arising from any activities at the site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities. Oakshire Environmental does not warrant or guarantee that the site is free of hazardous or potentially hazardous materials or conditions. It should be noted that this report has been produced for environmental purposes only.

2. Site

The following section provides a description of the site, location, proposed development and vulnerability classification, utilising information obtained from the client and publicly available sources.

2.1 Site Description and Location

The site is located on a track off Fenn Lanes to the east of Fenny Drayton, Leicestershire, and covers an area of approximately 3.2ha. The site comprises a roughly rectangular vacant plot covered by hardcore, tarmac and concrete. A topographical survey shows that the northern western half of the site slopes from north to south while the south eastern half slopes very gradually from east to west.

The site is bordered by areas of woodland to the north west, south east and west and agricultural fields to the north east and south west.

National Grid Reference: SP 36402 96871

2.2 Proposed Development

The proposed development involves the change of use of the land for the siting of 240 storage containers and an area for caravan storage at the south east. The existing site is covered entirely by hardstanding which is to be retained.

2.3 Vulnerability Classification

The NPPF technical guidance determines the suitability of a proposed development in a particular location based on its flood risk vulnerability. Based on Annex 3 of the NPPF, the proposed commercial development falls within the category of 'less vulnerable'.

The flood map for planning indicates that the site falls within Flood Zone 1. Less vulnerable developments are permitted in Flood Zone 1, therefore, a Sequential Test is not considered necessary.

It should be noted that these Flood Zones do not take into account the impact of any flood defences or site specific mitigation measures.

Table 1: Flood Risk Vulnerability Classification table from National Planning Policy Framework Technical Guidance

Flood Risk Vulnerability Classification					
Flood Zones	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	●	●	●	●	●
Zone 2	●	Exception Test required	●	●	●
Zone 3a	Exception Test required	x	Exception Test required	●	●
Zone 3b	Exception Test required	x	x	x	●

Key: ● Development is appropriate
X Development should not be permitted

3. Flood Risk Assessment

The following section outlines potential flood sources, pathways and receptors, utilising information gathered in the previous sections.

3.1 Potential Flood Sources

Rivers & Seas

The site is not located near any main rivers and, therefore, the Environment Agency's flood map for planning shows that the site would not flood in a 0.1% flood AEP if flood defences did not exist.

Climate change projections show an increased chance of warmer, wetter winters and hotter, drier summers with a higher likelihood of more frequent and intense rainfall. This is likely to make severe flooding happen more often. It is necessary to ensure that a development will be safe from flooding for its lifetime, which is generally considered to be a minimum of 75 years for a commercial development. Environment Agency guidance recommends that the impacts of climate change on peak river flow are assessed based on management catchments and recommends the use of the 'central' allowances for more vulnerable developments. The central climate change allowance for the 2080s in the Tame Anker and Mease Management Catchment is 22%.

The Environment Agency's flood map for planning shows that the site is not at an increased risk and is still within Flood Zone 1, when taking into account climate change allowances, in addition, Environment Agency data shows that the site and the surrounding area has not previously been impacted by river flooding.

Surface Water

Surface water runoff is caused by heavy rainfall that can overwhelm the drainage network. The Environment Agency Risk of Flooding from Surface Water mapping can be used to identify areas at risk of surface water flooding. Map data shows that surface water predominantly follows topographical flow paths of existing watercourses or dry valleys and can pond in low-lying areas. The risk is most often confined to roads with some run-off flow routes around properties.

Environment Agency maps show that there is a low likelihood of surface water flooding across the majority of site, however, localised surface water flooding would occur in a 3.33% AEP event at the south east and centre of the site, in addition, surface water flood depths across the majority of this area would not exceed 0.30m and almost no surface water flooding would occur to depths up to 0.60m, as shown on plans in the appendix.

To assess the impacts of climate change on peak rainfall intensity in large rural catchments the peak river flow allowances should also be used. Surface water modelling, taking into account climate change, shows that the extent of surface water flooding is not notably increased at the site in a 1% AEP event between the years 2040 and 2060.

Groundwater

Flooding from groundwater can occur when the water table rises and reaches ground level allowing water to seep through to the surface. This means that water may rise up through floors or underground rooms such as cellars or basements. Groundwater flooding is much slower to occur than river flooding and will usually happen days, weeks or even months after heavy or prolonged rainfall. And it may last weeks or even months.

BGS mapping shows that the site is situated on mudstone bedrock with superficial deposits of diamicton suggesting a low risk of groundwater flooding. EA's Areas Susceptible to Groundwater Flooding (AStGWF) dataset shows that the site is within an area considered to be of low to moderate susceptibility to groundwater while the JBA Groundwater Emergence map shows that the site is not within an area considered to be at risk of groundwater flooding.

Furthermore, there are no records of groundwater flooding in the vicinity of the site suggesting a low risk of groundwater flooding.

Sewers

Sewer flooding occurs when heavy rainfall and flooding overloads sewer capacity or when sewers cannot discharge to watercourses due to high water levels. Sewer flooding can also be caused by blockages, collapses, equipment failure or groundwater leaking into sewer pipes. Sewer flooding is often synonymous with other sources of flooding such as river, surface water and groundwater flooding.

The Hinckley and Bosworth Strategic Flood Risk Assessment (SFRA) provides recorded flood incidents from Severn Trent Water's register and shows no recorded flood incidents within the 'CV13 6' postcode area between 1989 and 2024. This suggests that the area is not susceptible to sewer flooding, in addition, the generally low surface water flood risk at the site and the site's rural location, suggests that sewer flooding is not likely.

Reservoirs

The level and standard of inspection and maintenance required for reservoirs means that the risk of flooding from reservoirs is generally very low. There are no reservoirs close to the site and Environment Agency mapping shows that the site is not at risk of flooding in the event of a reservoir failure or overtopping.

3.2 Potential Flood Receptors

Given the proposed use of the site, the following receptors are considered:

- Future site users
- Proposed buildings and structures

3.3 Potential Flood Pathways

Based on the expected on-site receptors, relevant pathways for the above receptors include:

- Topographical flow paths
- Underlying geology
- Local sewers

Pathways between off-site sources and off-site receptors is beyond the scope of this assessment.

3.4 Risk Assessment Methodology

The potential level of risk posed by a particular source is determined by assessing the potential severity of the impact of the flood linkage on the receptor, if it is assumed to be present, and the probability of the flood linkage being present.

Severities are categorised from Minor to Severe and probabilities are categorised from Unlikely to High Likelihood to give a potential level of risk output.

Table 2: Risk Matrix

Probability	**Severity of Consequence**			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low / Moderate Risk
Likely	High Risk	Moderate Risk	Low / Moderate Risk	Low Risk
Low Likelihood	Moderate Risk	Low / Moderate Risk	Low Risk	Very Low Risk
Unlikely	Low / Moderate Risk	Low Risk	Very Low Risk	Very Low Risk

Very High Risk

There is a high probability that severe harm could arise to a designated receptor from an identified source; or there is evidence that severe harm to a designated receptor is currently happening.

High Risk

Harm is likely to arise to a designated receptor from an identified source.

Moderate Risk

It is possible that harm could arise to a designated receptor from an identified source. It is relatively unlikely that any such harm would be severe or if any harm were to occur it is more likely that the harm would be relatively mild.

Low Risk

It is possible that harm could arise to a designated receptor from an identified source, however, it is likely that this harm, if realised, would normally be mild.

Very Low Risk

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

4. Conclusions

4.1 Risk Evaluation

- There is a **negligible risk** to future site users and the proposed buildings and structures from river flooding.
- There is a **low risk** to future site users and the proposed buildings and structures from localised surface water flooding at the south west of the site.
- There is a **low risk** to future site users and the proposed buildings and structures from groundwater flooding through the underlying geology.
- There is a **very low risk** to future site users and the proposed buildings and structures from sewer flooding at the site.
- There is a **negligible risk** to future site users and the proposed buildings and structures from reservoir flooding.

4.2 Proposed Flood Mitigation Measures

Based on the identified flood risk, flood mitigation measures are not considered necessary.

4.3 Safe Access and Egress

Localised surface water flooding is expected at the south west of the site, however, the site access is not expected to be impacted, therefore, safe access and egress will be possible to and from the site during design conditions, without the intervention of emergency services.

4.4 Conclusions

The site lies within Flood Zones 1 based on the Environment Agency's Flood Map for Planning. Assessment of the risk to the site from all sources of flooding, including consultation of the Hinckley and Bosworth SFRA, shows that the site is considered to be at a negligible risk from river and reservoir flooding, a low risk from surface water and groundwater flooding and a very low risk from sewer flooding.

In the event of a flood there is considered to be safe access and egress, with site users able to safely enter and exit the site without the intervention of emergency services or others during design flood conditions.

It should be noted that these conclusions are based on the currently proposed development plan, therefore, flood risk at the site should be re-assessed if material changes are made to the proposed development.

5. References

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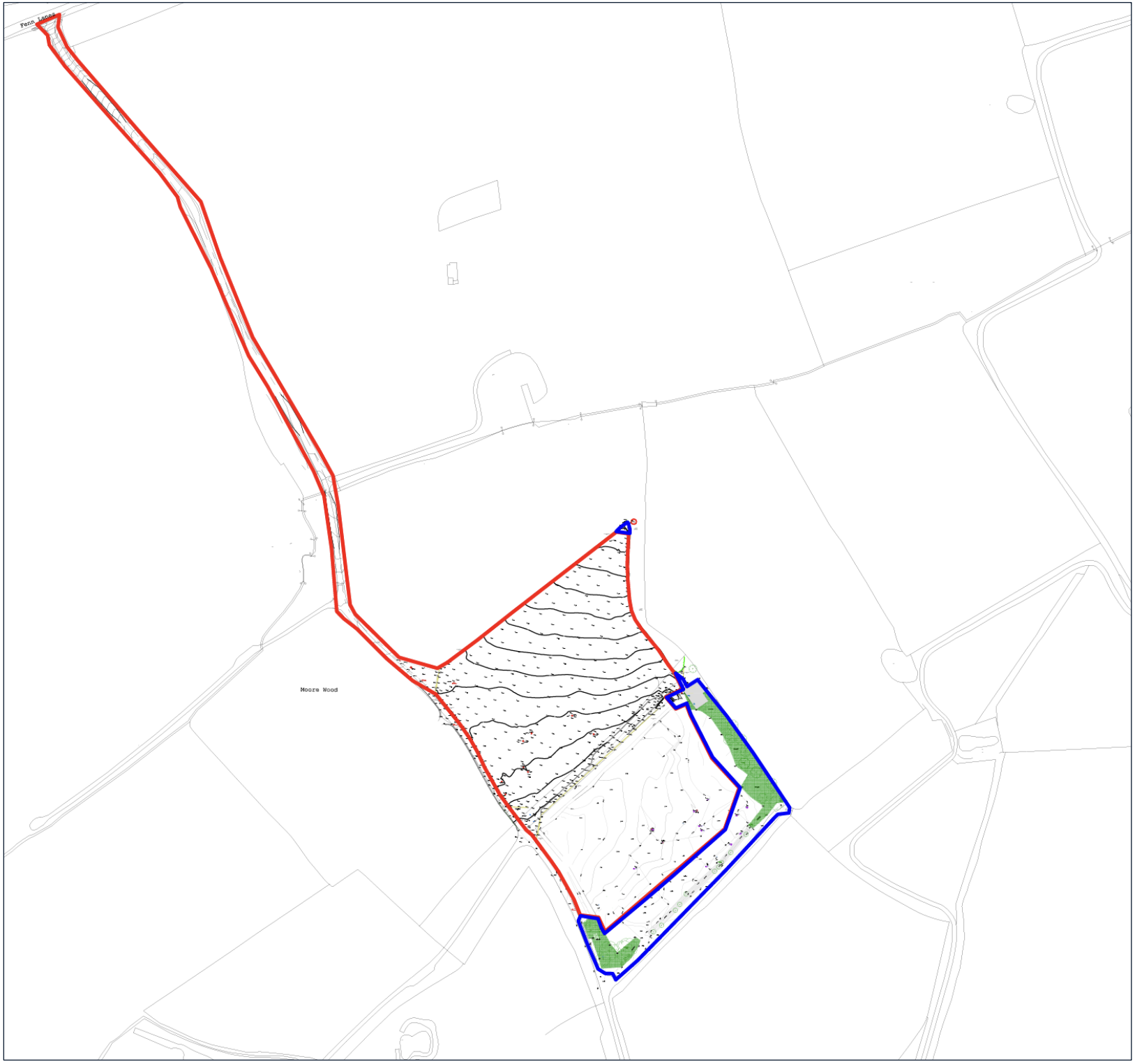
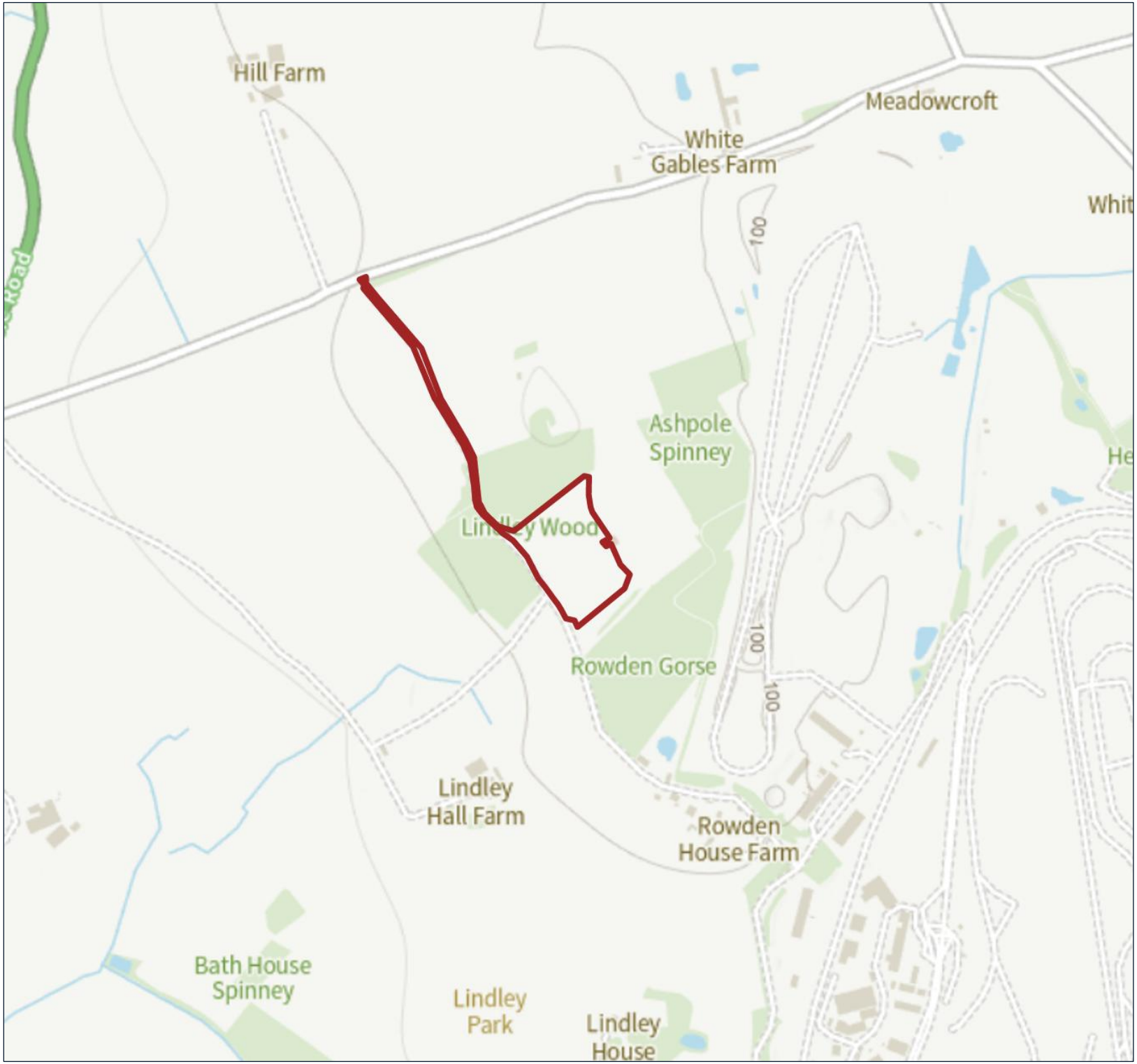


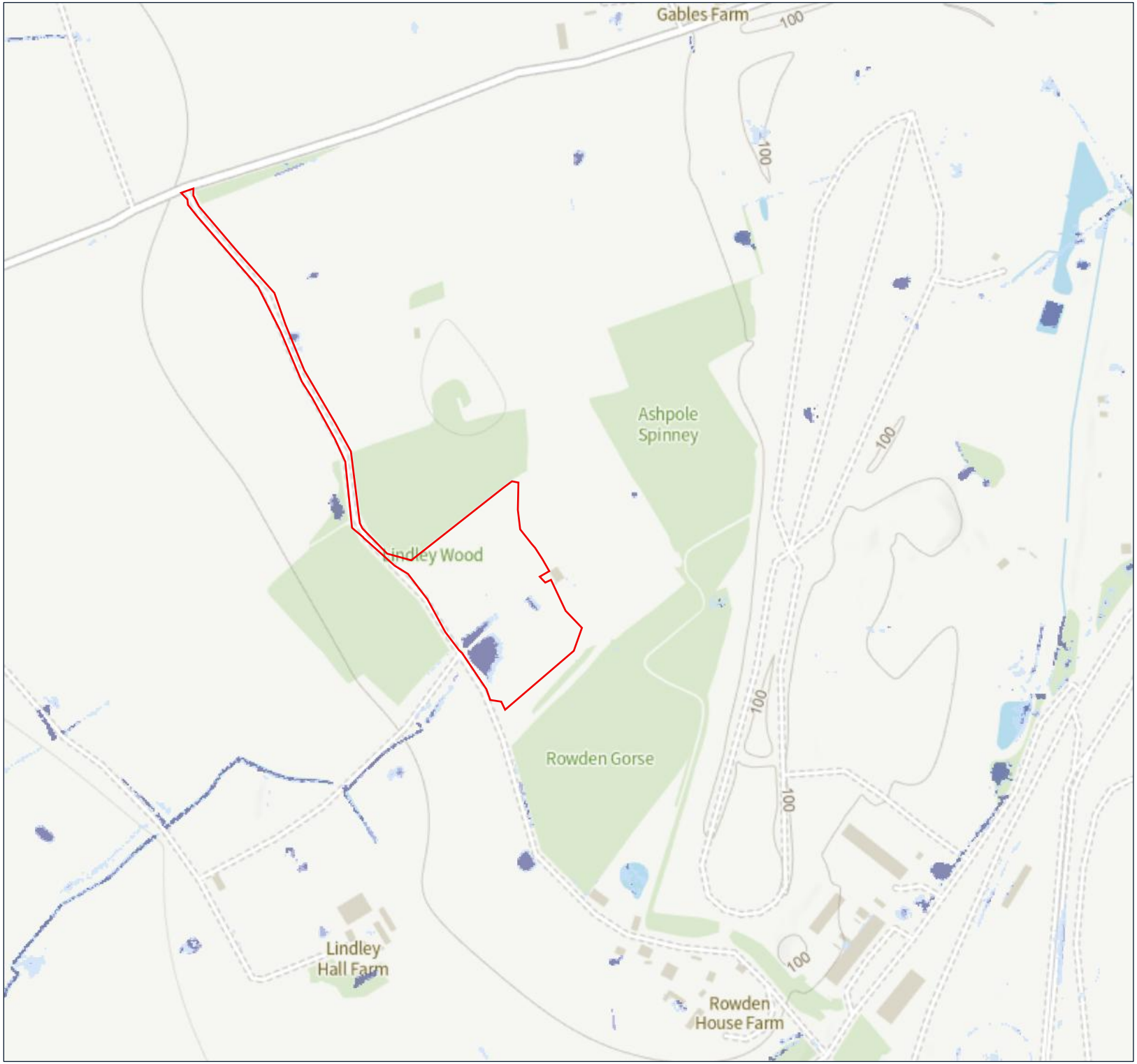
Appendix - Site Maps & Plans	
Description	
Topographical survey	
Sources	
Hayward Architects	
Key	
	Site boundary
	Land owned by the client
▲	North

Appendix - Site Maps & Plans	
Description	
Proposed site plan	
Sources	
Hayward Architects	
Key	
	Site boundary
	Land owned by the client
▲	North



Appendix – Flood Risk Maps	
Description	
Flood map for planning	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	Flood Zone 1
	Flood Zone 2
	Flood Zone 3
	Main river
	Flood defence
▲	North

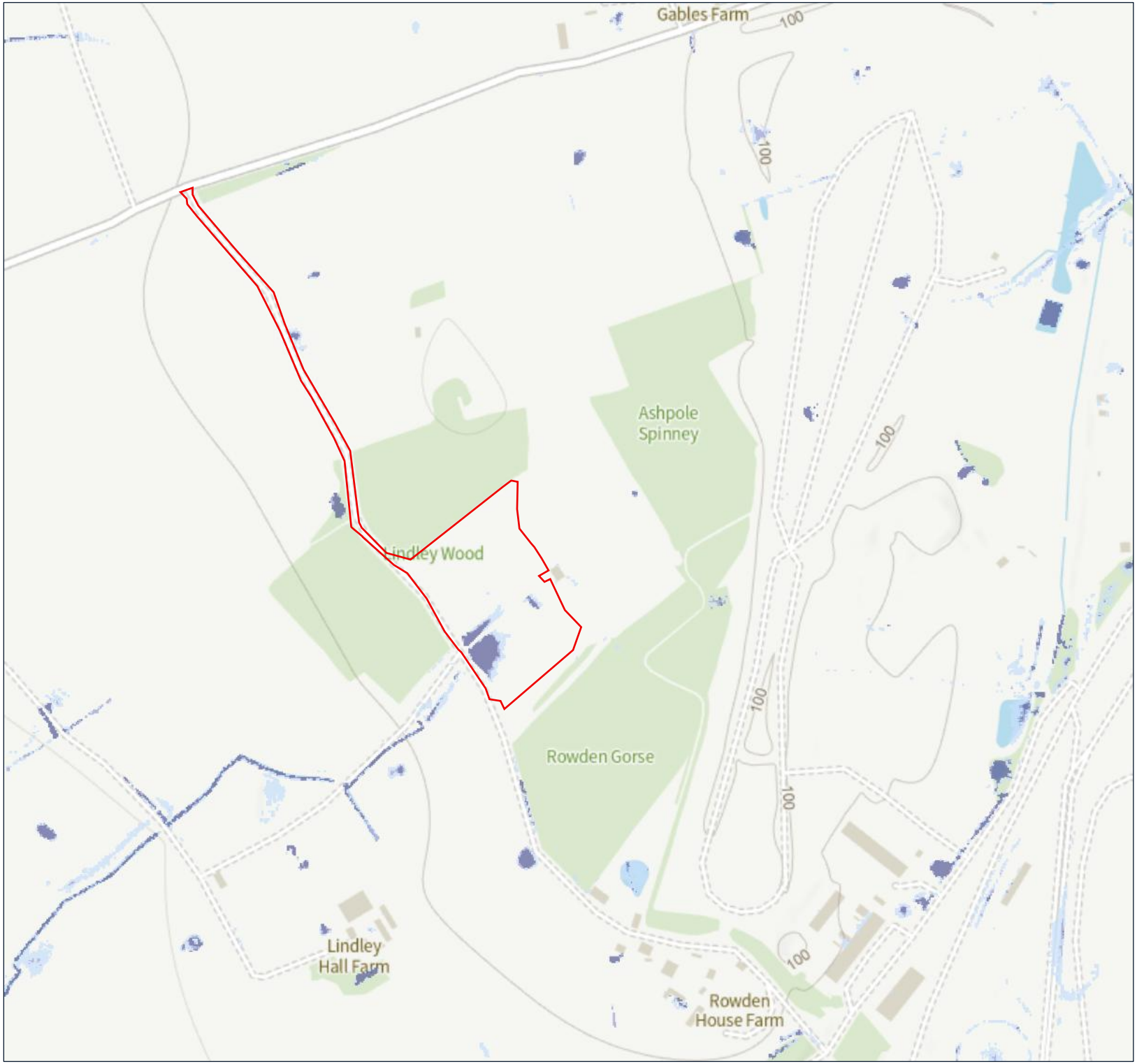
Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the extent of flooding from surface water for a range of flood events	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North



Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the likelihood of surface water flooding to a depth of up to 0.2m for a range of flood events	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North

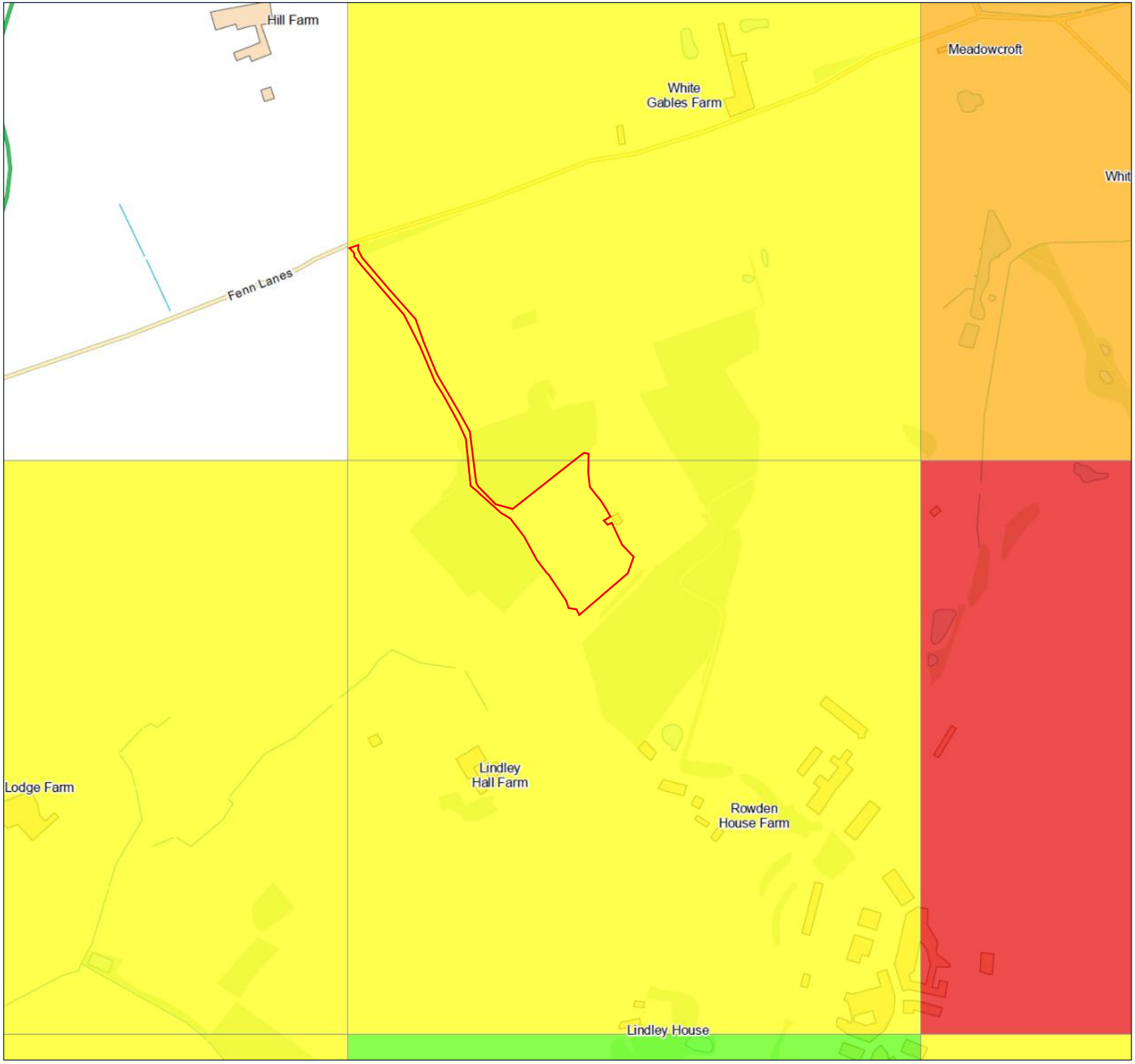
Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the likelihood of surface water flooding to a depth of up to 0.6m for a range of flood events	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North

Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the extent of flooding from surface water for a range of flood events between 2040 and 2060	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North



Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the likelihood of surface water flooding to a depth of up to 0.2m for a range of flood events between 2040 and 2060	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North

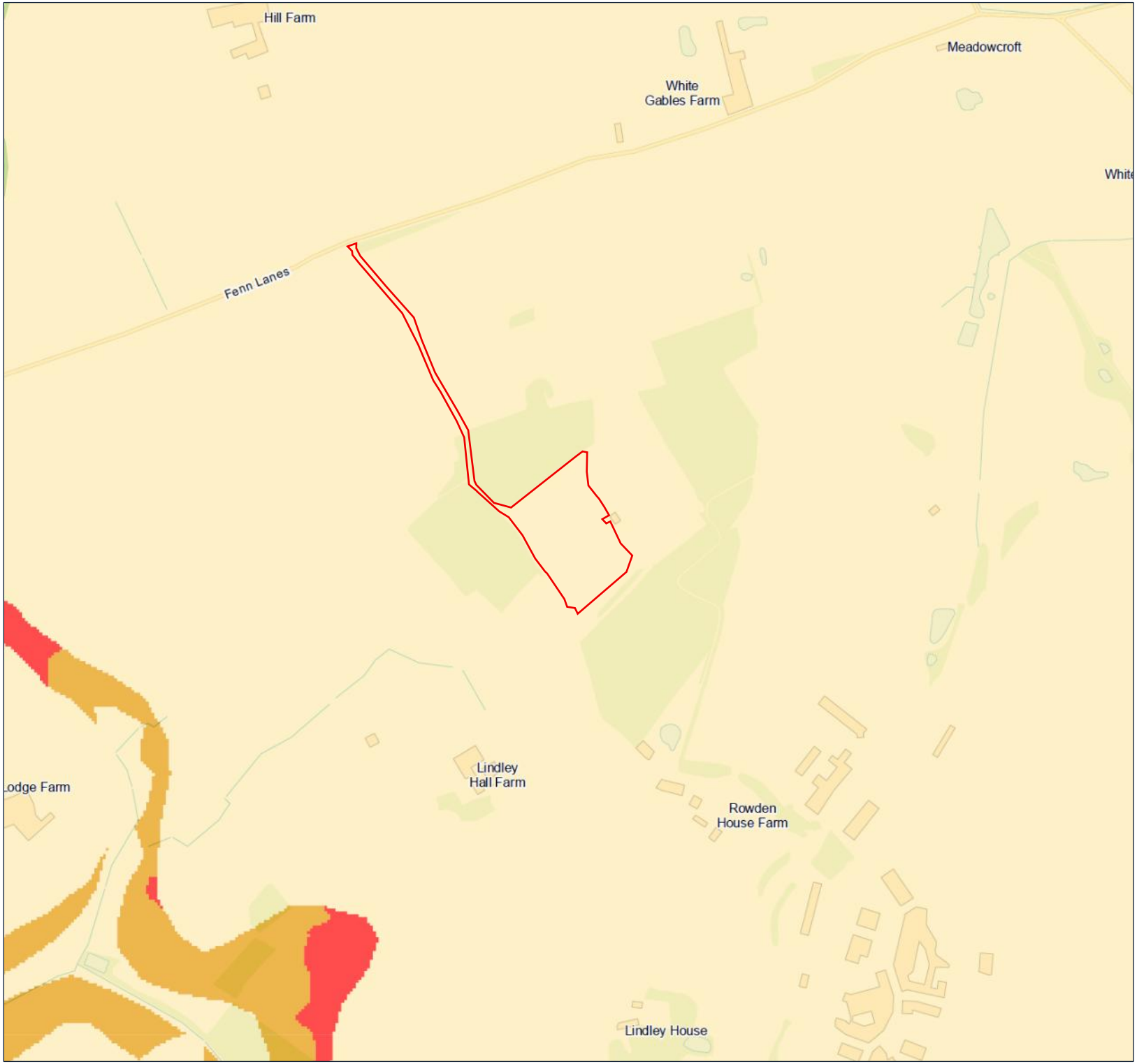
Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the likelihood of surface water flooding to a depth of up to 0.6m for a range of flood events between 2040 and 2060	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	0.1% AEP (Low)
	1% AEP (Medium)
	3.33% AEP (High)
▲	North



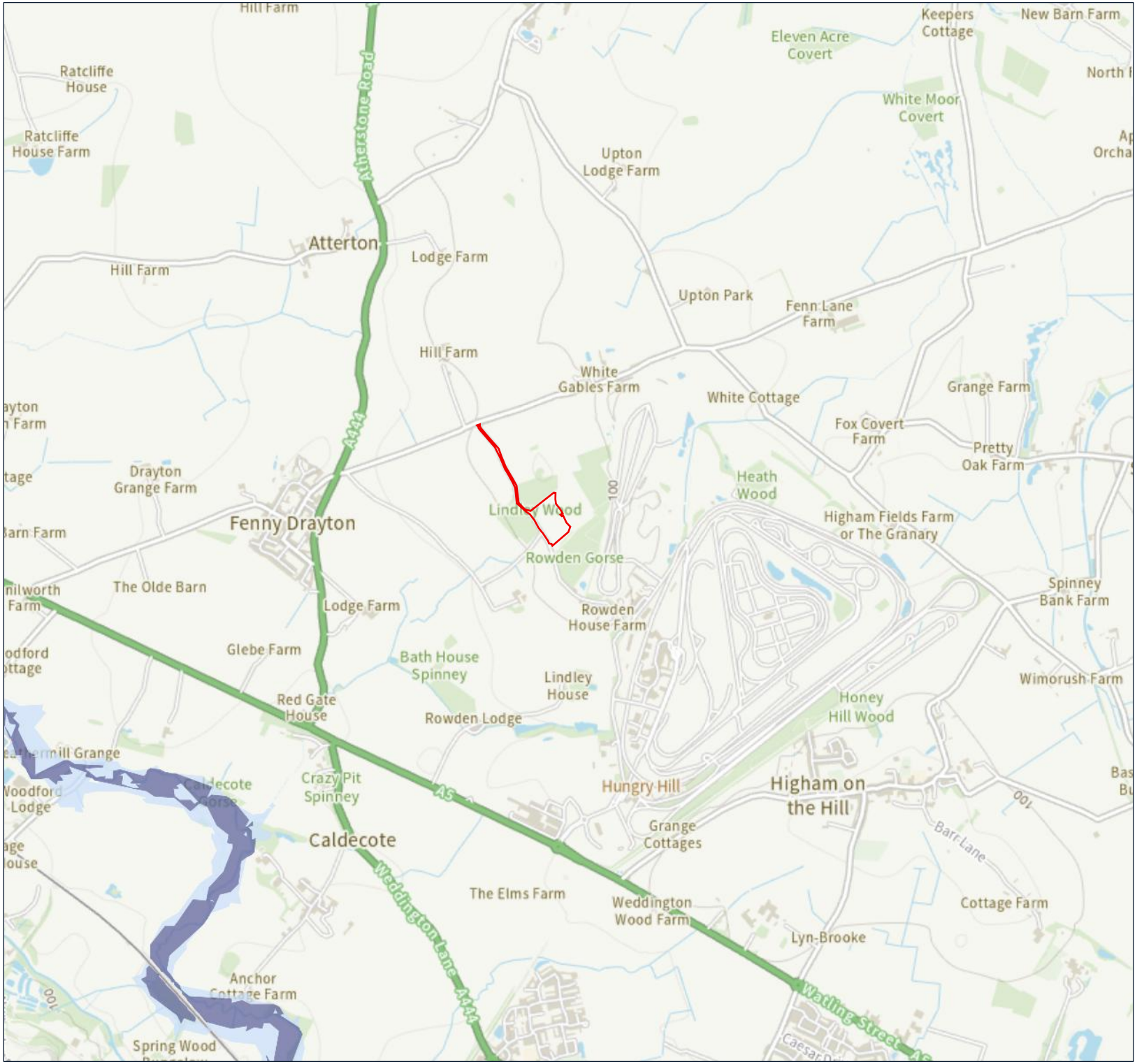
Appendix - Flood Risk Maps

Description
Susceptibility to Groundwater Flooding map from Hinckley & Bosworth Borough Council SFRA
Sources
Environment Agency OS data © Crown copyright and database rights
Key

	Site boundary
	< 25%
	≥ 25% < 50%
	≥ 50% < 75%
	≥ 75%
▲	North



Appendix - Flood Risk Maps	
Description	
Groundwater Emergence mapping from Hinckley & Bosworth Borough Council SFRA	
Sources	
JBA Consulting OS data © Crown copyright and database rights	
Key	
	Site boundary
	No risk
	At least 5m below surface
	Between 0.5m – 5m below surface
	Between 0.025m – 0.5m below surface
	Less than 0.025m below surface
▲	North



Appendix - Flood Risk Maps	
Description	
Environment Agency map showing the modelled extent of flooding from reservoirs	
Sources	
Environment Agency OS data © Crown copyright and database rights	
Key	
	Site boundary
	When river levels are normal
	When there is also river flooding
▲	North