

APPENDIX A

FLOOD RISK ASSESSMENT (FRA)

1.0 BRIEF

1.1 Scope and Limitation

This is a Flood Risk Assessment Report limited in its scope to the task as noted below. We have not investigated areas or problems which are not relevant to the task unless noted in the report. The report has been prepared in accordance with the Client's request and therefore any liabilities which may arise are restricted to the Client.

1.2 Orientation

For the purposes of this report, unless otherwise stated, all references (including maps, drawings etc.) are oriented North at the top of the page.

1.3 Site Address

Packhorse Corner, Packhorse, Purton, Swindon, SN5 4HU

1.4 Brief

The proposal for this site is the erection of a single storey rear extension to the rear of an existing mid-terrace dwelling. The site lies in Flood Zone 1, as indicated by EA mapping for the area.

1.5 Information sources

Association of British Insurers - Flood Resilient Homes; What homeowners can do
Flood Resilient Homes - What homeowners can do to reduce flood damage

British Geological Survey Mapping [BGS Geology Viewer - British Geological Survey](#)

Department for Communities and Local Government - Planning Policy Statement 25: Development and Flood Risk - Practice Guide

Strategic Flood Risk Assessment - Wiltshire Council. May 2019

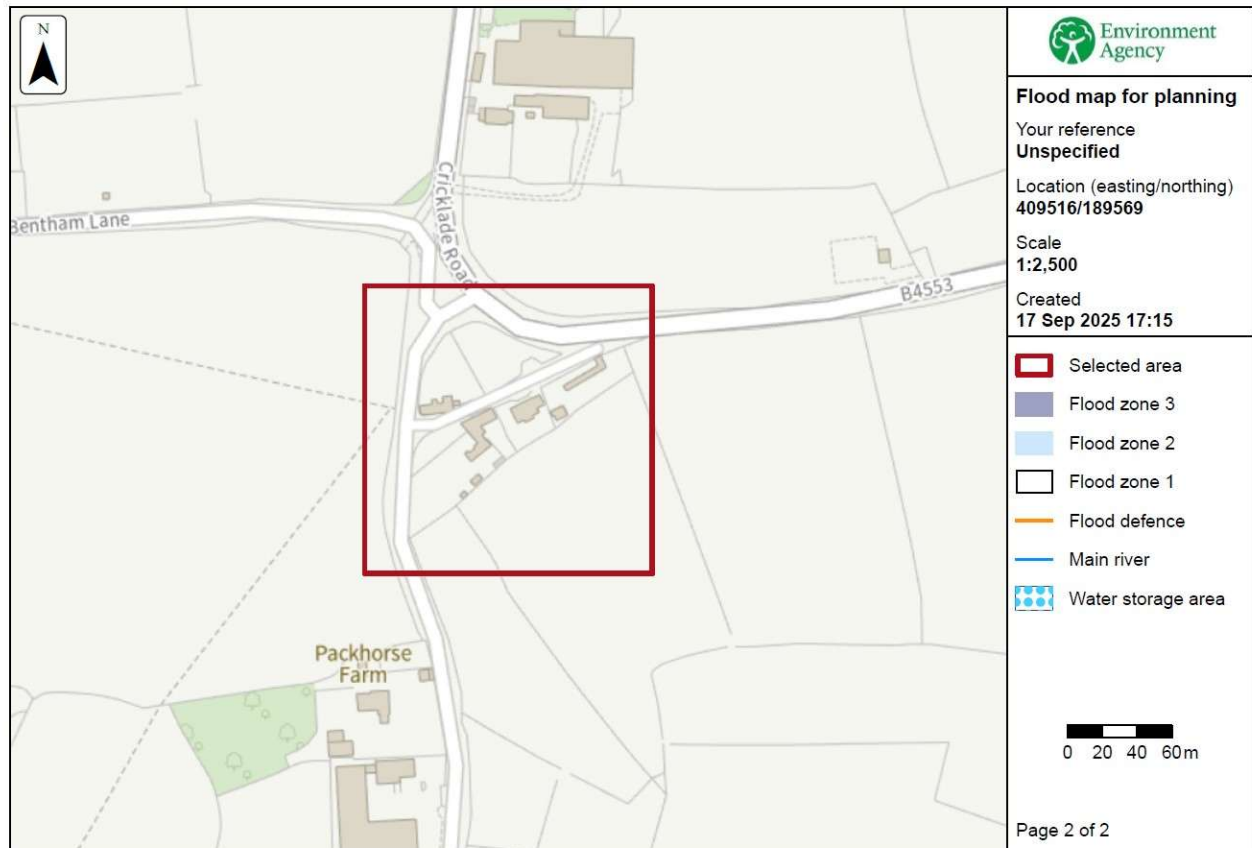
Where applicable and identified, this report, "Contains Environment Agency information © Environment Agency and database right.

Ministry of Housing, Communities & Local - Government National Planning Policy Framework. March 2012.

2.0 BACKGROUND INFORMATION

2.1 Introduction

As set out in the 'flood map for planning' section of the .GOV website, Packhorse Corner is identified as being located in Flood Zone 1.



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Fig 2.1.1 flood zone map, Environment Agency

Developments in flood zone 1 that are less than 1 hectare (ha) only need a flood risk assessment (FRA) where:

- land has been identified as having critical drainage problems
- land is identified in the local planning authority's (LPA) strategic flood risk assessment (SFRA) as being at increased flood risk in future
- it would increase the vulnerability classification and land may be subject to sources of flooding other than rivers or sea

The site area of Packhorse Corner is 0.16ha as indicated on the submitted location plan, and had been subject of surface water flooding on several occasions along with the neighbouring properties.

2.2 Vulnerability Classification

An inspection of the planning practice guidance confirmed that the development would fall into the 'More Vulnerable' classification due to the proposed use of the site for a dwelling house.

2.3 Consistency with Local Plan

No information has been provided to indicate that the proposed works will be contrary to the Local Plan and as such, it is assumed that this is not an issue for the site.

2.4 Selection of Site

The standard requirement for site selection is the provision of suitable evidence to show that the Sequential Test or Exception Test have been applied in the selection of the site, relevant to its development types.

The National Planning Policy Framework defines the aims of the Sequential Test as steering new developments to prioritise the selection of sites to be those with the lowest probability of flooding. However, it should be noted that for a minor development there is no requirement to provide or undertake a sequential test. As an exception test is only required following on from a sequential test, the lack of a requirement for an exception test by implication means that a sequential test is not required for a minor development.

This site is located within the Flood Risk Zone 1, which is suitable for the applicable development.

	Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception Test required	✓	✓
Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
Zone 3b functional floodplain	Exception Test required	✓	✗	✗	✗

2.5 Geology

An inspection of the British Geological Survey Information for the area indicates the following:

Bedrock geology - Oxford Clay Formation; Mudstone. Sedimentary bedrock formed between 166.1 and 157.3 million years ago during the Jurassic period.

2.6 Consultation

A consultation was undertaken with the Local Authority and also with the Environment Agency.

A request for flood risk assessment data (product 4) to the EA and the receipt of this information is pending.

The Local Authority for the area, Wiltshire Council, could not provide any information on levels and the potential sources of flooding other than suggesting that the local strategic flood risk assessment could be of some use. On review of this document there is no specific information relating to the site in question or its surrounding area.

3.0 FLOOD RISK ZONE/ ENVIRONMENT AGENCY INFORMATION

3.1 Flood Zone Definitions

The following flood zone definitions are normally adopted:

Flood Zone 1 is defined as having a 'Low Probability' of flooding and incorporates areas where the annual probability of flooding is lower than 0.1 %. Planning Policy Statement 25 (PPS25) imposes no constraints on the type of development within Flood Zone 1.

Flood Zone 2 is defined as 'Medium Probability' with an annual probability of flooding between 0.1 and 1.0% for fluvial and 0.1 and 0.5% for tidal and coastal flooding. PPS25 recommends that Flood Zone 2 is suitable for most types of development except for 'Highly Vulnerable' land uses.

Flood Zone 3 is defined as 'High Probability' with an annual probability of flooding of 1.0% or greater for fluvial and 0.5% and greater for tidal or coastal. PPS25 recommends that appropriate development is based upon a further classification of Flood Zone 3 into 3a High Probability and 3b Functional Floodplain (where water has to flow or be stored in times of flood).

3.2 Flood Risk Summary

The long-term flood risks to the site are identified and assessed as the following based on information provided on the .GOV flood risk website:

Surface Water - Yearly chance of flooding from is categorised as 'very low', rising to 'low' between 2040 and 2060.

That said, the following flop map shows the risk of surface water to parts of the site and the surrounding area as high risk.

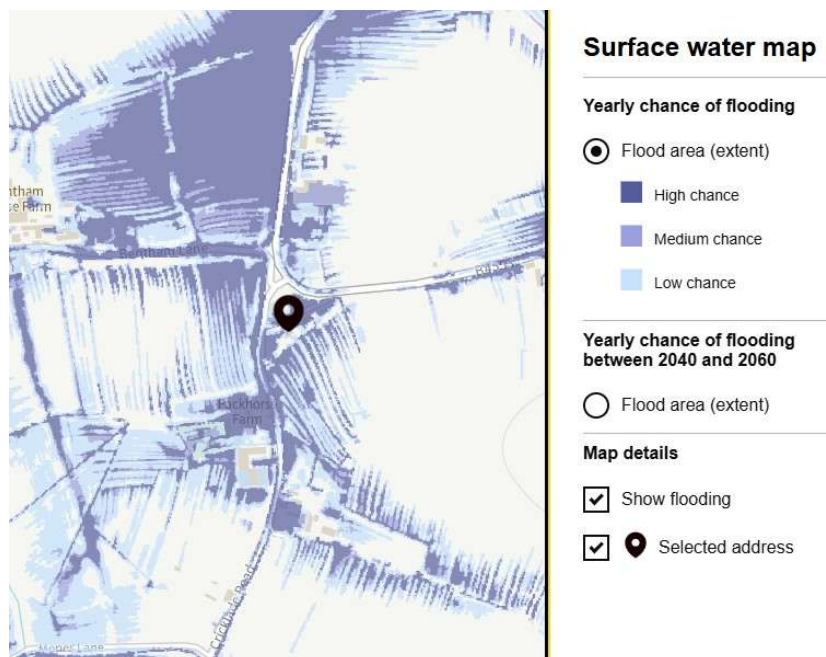


Fig 3.2.1 surface water map, .GOV website

Rivers and the Sea – Yearly chance of flooding is categorised as ‘very low’ and is deemed to remain ‘very low’ until at least 2069.

Groundwater – Is deemed as unlikely in this area

Reservoirs – Is deemed as unlikely in this area

3.3 Historic Flood Levels

The Environment Agency has been contacted and this information is yet to be provided.

However, during periods of heavy rainfall, the water table has risen and caused internal flooding within the building. The flooding was mainly due to water rising from the ground although some was due to the fact that the property sits at a lower elevation than some of the surrounding land, which led to water flowing towards the dwelling and seeping through the external doors of the northwest and southwest elevations.

The first incident occurred during Storm Babet in October 2023, resulting in an internal flood depth of approximately 200mm. The second incident took place during Storm Bert in November 2024, with an internal flood depth of around 80mm.



Fig 3.3.1 aerial photo of flooding, Nov 2024



Fig 3.3.2 road outside entrance to Packhorse Corner, Nov 2024



Fig 3.3.3 rear garden, Nov 2024



Fig 3.3.4 clearing water at back door, Nov 2024

4.0 FLOOD RISK

4.1 Site levels

The existing site level information can be viewed on the submitted topographical survey of the site. The ground level on the site itself drops approximately 0.35m from east to west where a drainage ditch is present before the road, which banks towards the site.

It is not proposed to alter any internal floor ground levels of the main dwelling in any way. The proposed garage extension will also maintain the same levels as the existing.

4.2 Flood flow routes

There is an opportunity and desire, to implement a French drain to the southeast perimeter of the building in order to create a flow route and catch surface water flowing downhill and into the side of the building and transport it away.

5.0 CONCLUSION

The available information for Packhorse places it within Flood Zone 1, with the potential for flooding being solely from surface water as demonstrated by the surface water mapping data and recent recorded events which due to climate change, are more likely to occur in the future.

Increased rainfall could have an impact on river levels and land as well as urban drainage systems. The increase in peak rainfall intensity poses a large threat of flooding as a result of climate change on the proposed development. Siting of the development, relative to the local watercourse, and the provision of suitable flood resilience provisions should be considered in the design of the property.

The proposed works are largely internal alterations and aesthetical in nature which have very little bearing with flood risk or prevention. The two key items which are focused on building protection from flood events are the implementation of external flood barriers and the reduction of terrace levels to align with internal floor levels with a French drain to collect and transport surface water away from the building and into an existing ditch network.