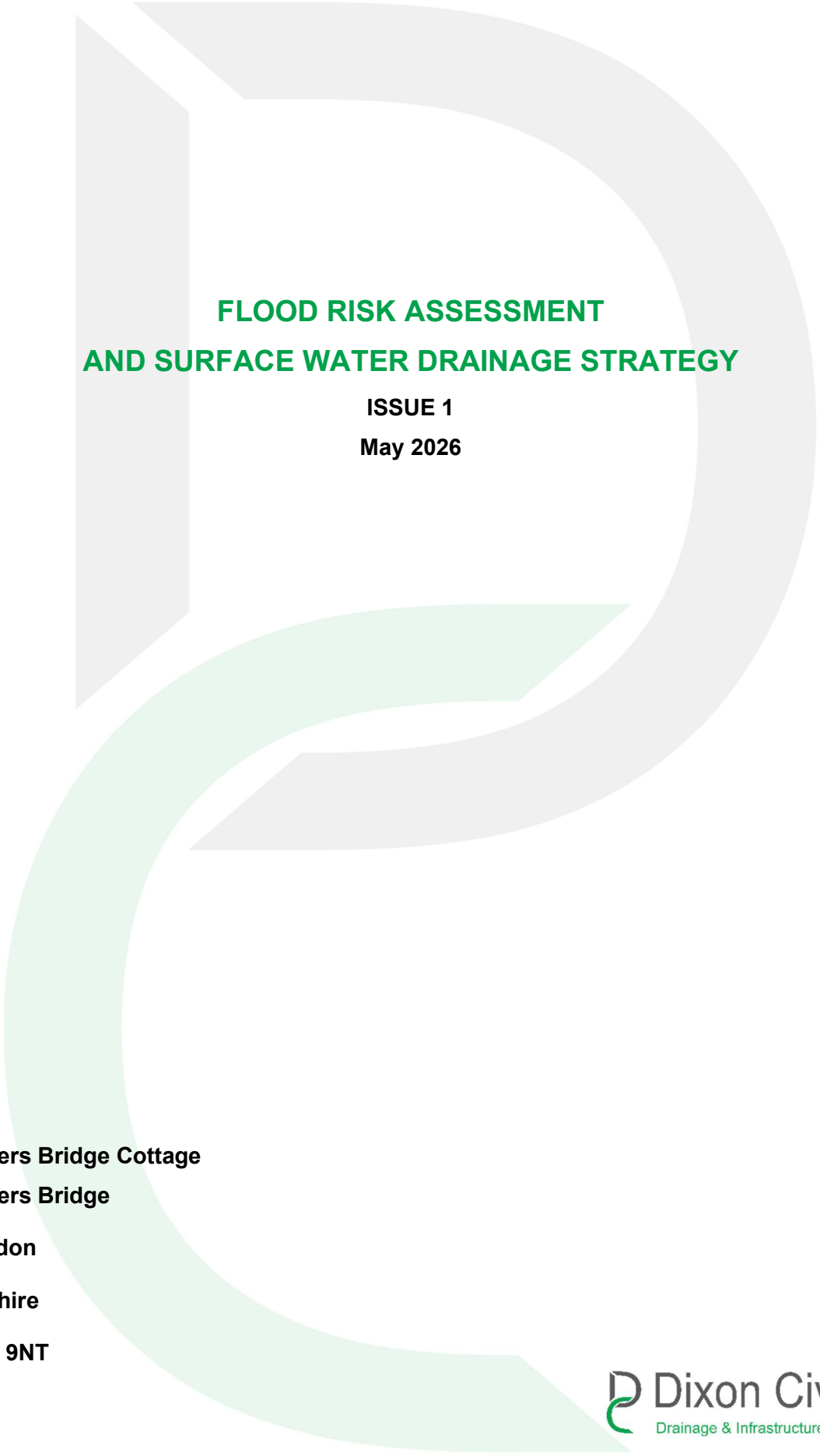




FLOOD RISK ASSESSMENT AND SURFACE WATER DRAINAGE STRATEGY

**ISSUE 1
May 2026**

**Tanners Bridge Cottage
Tanners Bridge
Garsdon
Wiltshire
SN16 9NT**

Document Control

Client	R Parsons		
Report title	Flood Risk Assessment and SW Drainage Strategy		
Report reference	1268-01		
Report status	Draft		
Prepared by	A.Dixon BSc(Hons) CEng MICE		
Document check	Z.West		
Issue Number/status/Date	1	Draft	01-05-2026

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APPENDIX	TITLE	PRODUCED BY
Appendix A – Drawings by DC	Surface Water Drainage Strategy	Dixon Civils
Appendix B – Drawings by others	Existing Roof Block Plan	P I Davis Architectural Design
	Proposed Roof Block Plan	P I Davis Architectural Design
Appendix C – Sewer Records		
Appendix D – BRE365 Test Results		
Appendix E - Calculations		

1.0 Introduction

This Flood Risk Assessment has been prepared on behalf of Richard Parsons to support a planning application for the proposed extension of Tanners Bridge Cottage (Application Ref: PL/2026/01280).

This report will provide flood risk information in support of the planning application and demonstrate how the appropriate means of sustainable surface water drainage will be achieved for the development without worsening flood risk in the area or putting itself at risk of flooding in line with national guidance.

The application proposal comprises the demolition of an existing extension and patio area and construction of a full width single-storey extension, increasing the impermeable area by approximately 20m². Refer to the Proposed Block Plan (2529-200 Rev A) prepared by P I Davis Architectural Design enclosed within Appendix B of this report.

2.0 Referenced Policies

Information sources used within this report are noted below along with the date they were referred to.

- Flood Map for Planning – Environment Agency (EA, accessed April 2026);
- Flood Map for Surface Water – Environment Agency (EA, accessed April 2026);
- Geological Map - British Geological Survey (BGS, Accessed April 2026);
- Groundwater Source Protection Zones Map - Environment Agency (EA, accessed April 2026);
- Wessex Water Sewer Records (April 2026); and
- Wiltshire Council Core Policy 67: Flood Risk
- Wiltshire Council Strategic Flood Risk Data Explorer.
<https://wiltscouncil.maps.arcgis.com/apps/webappviewer/index.html?id=28c00215d87b468a9a0cd79c63d3d270>
- Building Regulations 2015 – Approved Document H (Drainage and Waste Disposal);
- C753 The SuDS Manual (CIRIA, November 2015);
- National Planning Policy Framework (NPPF) (July 2021);
- Non-Statutory Technical Standards for Sustainable Drainage Systems (Defra, March 2015);
- Planning Practice Guidance (PPG) (March 2014);
- Sewerage Sector Guidance (SSG), Version 1.0 (Water UK, October 2019).

3.0 The Existing Site

The application site occupies approximately 740m² (0.074ha) of land occupied by the existing dwelling, garage and hard and soft landscaping. Refer to the Existing Block Plan (2529-20 Rev A) prepared by P I Davis Architectural Design within Appendix B of this report.

The site is centred on Ordnance Survey grid reference ST 95839 87823 and co-ordinates: E 395839, N187823. The post code for the site is SN16 9NT.

Vehicular access to the site is to the south off Millbourne Lane as existing.

The site is located within flood zones 2 and 3 and is bounded to the north by open field and woodland, to the east by residential properties and to the west by Woodbridge Brook. Land use in the vicinity is predominantly agricultural and residential.

The site falls gently from east to west.

3.1 Existing ground conditions

British Geological Survey (BGS) mapping indicates that the site is underlain by Cornbrash Formation—Limestone.

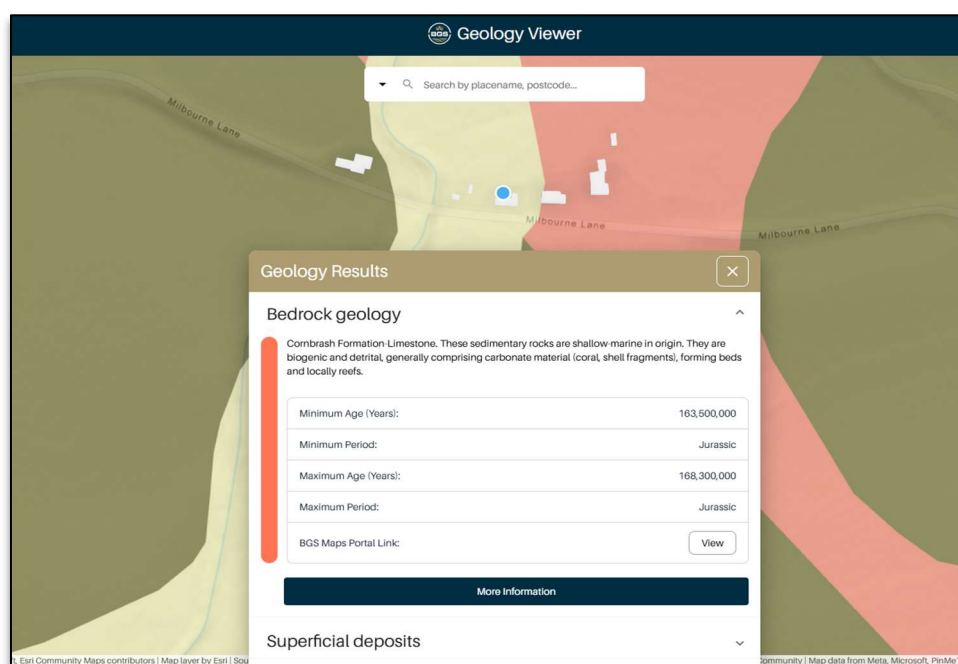


Figure 1: Bedrock Geology - Extract from British Geological Survey Geology of Britain Viewer
Source: <https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer>

Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) map indicates that the geology underlying the site has no classified Aquifers and is located within a Groundwater Source Protection Zone 2.

Wiltshire Council's Strategic Flood Risk Assessment (SFRA) Groundwater Emergence map highlights the site as being split across a zone where there is a risk of groundwater flooding to surface and subsurface assets and where surface manifestation of groundwater is unlikely. There are no recorded groundwater flood events at the property location and on-site testing in April 2026 revealed no groundwater to a depth of 2m, which suggests the property is located within the area of low groundwater emergence.

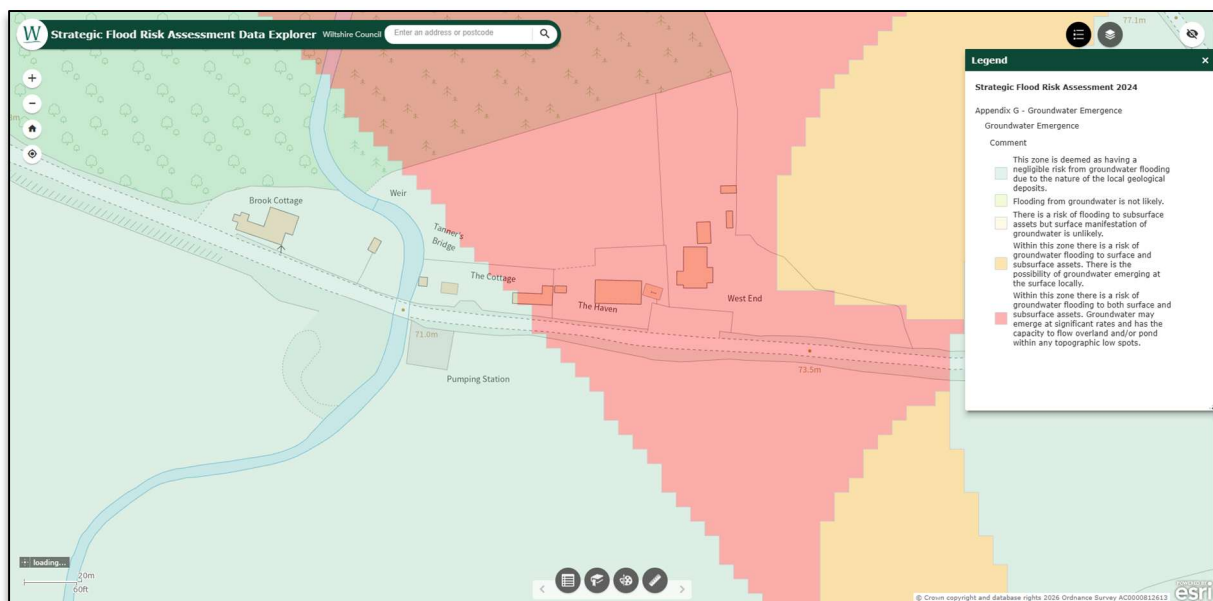


Figure 2: Groundwater Emergence - Extract from Wiltshire Council's SFRA Data Explorer
Source: <https://wiltscouncil.maps.arcgis.com/apps/webappviewer>

3.2 Intrusive Site Investigations

An intrusive site investigation, comprising a trial pit excavated to a depth of 1.5m below ground level (bgl) has been undertaken on site in April 2026. Infiltration testing to BRE365 standards was completed within the test pit. The investigation confirmed that the site is underlain by Cornbrash soils and favourable infiltration results were found. Please refer to the test results enclosed within Appendix D of this report, which resulted in an infiltration rate of $6.41 \times 10^{-6} \text{m/s}$.

Post test, the trial pit was dug further to a depth of 2m and groundwater was not encountered.



3.3 Existing Watercourses and Drainage Features

The nearest watercourse to the property, the Woodbridge Brook, runs along the land boundary approximately 30-35m to the west of the property, a tributary to the River Avon located 1.0km to the southwest of the site.

Asset records obtained from Wessex Water indicate the presence of a public foul sewer within Millbourne Lane to the south east of the site. There are no surface water sewers within the vicinity. Refer to Wessex Water sewer records within Appendix C of this report.

3.4 Existing surface water drainage arrangement

Roof water runoff from the existing property is assumed to run to the foul water sewer within Millbourne Lane, while the outbuildings and hardstanding areas drain directly to ground.

4.0 Evaluation of Flood Risk

This section presents an assessment of flood risk to the development and includes recommended flood risk mitigation measures if required. A summary of flood risk issues and proposed mitigation measures are recorded in Table 4.7 below.

4.1 Historic Flooding Events

Wiltshire Council's Strategic Flood Risk Data Explorer maps records a flood outline corresponding with the Environment Agency's (EA) flood map for planning, as shown in figure 3 below.

A blocked drain incident is also highlighted within Millbourne Lane outside of the neighbouring property in 2012.

4.2 Fluvial Flood Risk

The Flood Map for Planning for the locality as produced by the EA is shown in Figure 3 below and shows that the site lies within Flood Zones 2 and 3.

National Planning Policy Framework (NPPF) Planning Practice Guidance, Table 2, advises buildings used for dwelling houses are classified as 'More Vulnerable'.

NPPF PPG Flood Risk and Coastal Change (Table 3: Flood Risk Vulnerability and Flood Zone Compatibility) confirms that 'more vulnerable' development types are appropriate within Flood Zone 2.

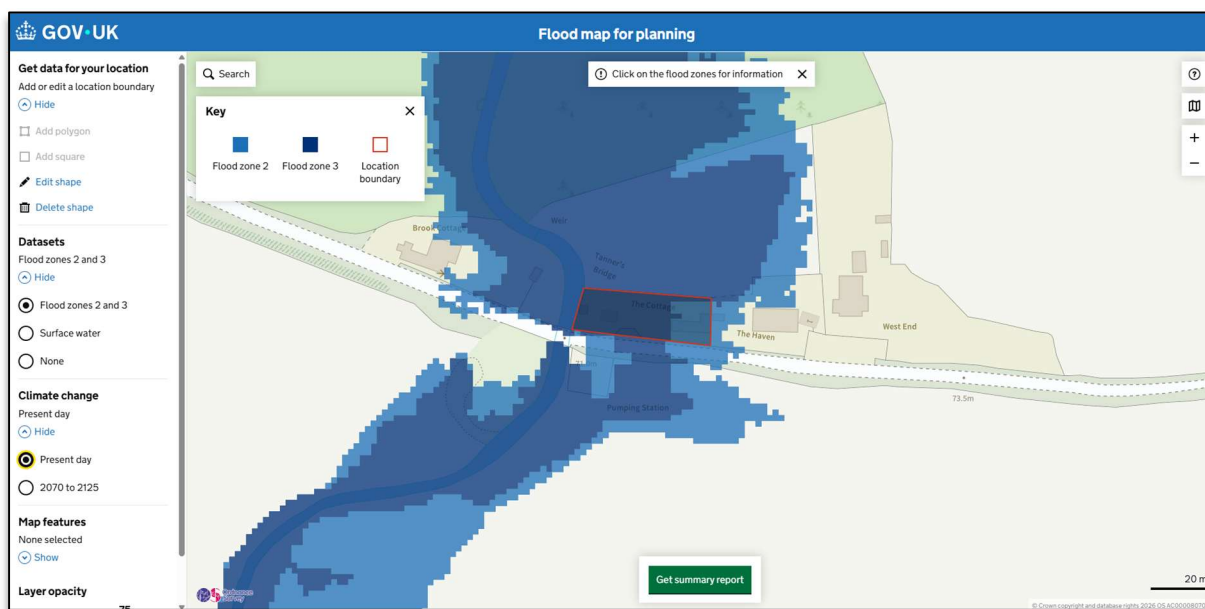


Figure 3: Extract from Central Government's 'Flood Map for Planning' Mapping Portal

Source: <https://flood-map-for-planning.service.gov.uk/>

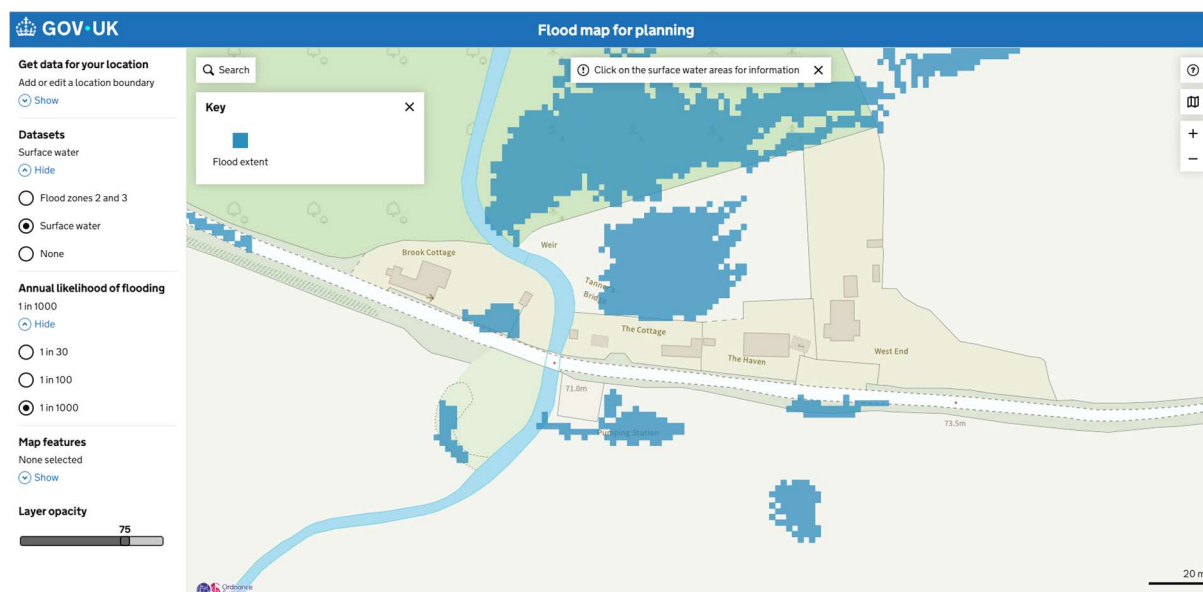
Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *
✓ Exception test is not required X Development should not be permitted					

Gov.uk Flood Risk & Coastal Change, Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Source: <https://www.gov.uk/guidance/flood-risk-and-coastal-change#table2>

4.3 Surface Water Flooding

Surface Water Flood mapping produced by the EA highlights a 0.1% chance of surface water build up within land to the north of the site, therefore the risk is low and no mitigation is required.



4.4 Sewer Flooding

Wessex Water records indicate there to be a foul sewer within Millbourne Lane to the south of the property. There are no surface water sewers within the vicinity. Highway kerb gullies are located along Millbourne Lane, with a blocked drain incident recorded outside of the neighbouring property in 2012. The blocked drain incident was rectified at the time and there have been no recorded incidences since. Risk of flooding from sewers is therefore low.

4.5 Groundwater

While the Wiltshire SFRA mapping highlights part of the site to be within a zone at risk of groundwater flooding, as discussed in section 3.1, the Groundwater Emergence map indicates the site spanning the western edge of this zone, with a large portion of the site within a zone where surface manifestation of groundwater is unlikely.

A Trial pit dug in April 2026 to a depth of 2m was found to be dry, confirming the site to be at low of flooding from groundwater.

4.6 Flooding from reservoirs or other artificial sources

The EA Map 'Extent of Flooding from Reservoirs' indicates that the site is not at risk from flooding from a reservoir breach. Therefore, flood risk from artificial sources is low.

4.7 Summary of Flood Risk

Source of Potential Flooding to the Development Site	Flood Risk	Mitigation/Comments
Fluvial	Medium/High	The site is located within Flood Zones 2 and 3. Proposed extension is located within FZ2 only. Flood resilience measures will be incorporated within the extension design.
Public Sewers / Drains	Low	Wessex Water records indicate there are no surface sewers in the vicinity of the site. A single recorded blocked highway drain incident was recorded in 2012, causing temporary flooding of the road.
Overland Flow	Low	EA mapping indicates the site is at Low risk of flooding from this source.
Groundwater	Low/Medium	Site spans zones where ground water manifestation is likely and unlikely. Groundwater was not encountered during on-site trial pitting.
Artificial Sources	Low	EA Mapping confirms that the site is not located within an area at risk of flooding from this source.

4.8 Section 19 Records

Wiltshire Council provide a record of historic flooding events within Wiltshire through 'Section 19' reporting, available to view on the [Wiltshire.gov.uk](https://www.wiltshire.gov.uk) website. Each report has been reviewed and does not list the application site or surrounding vicinity within any of the reports.

4.9 Flood Risk Mitigation

This minor development is unlikely to affect flood risk significantly, therefore the EA's standing advice for minor extensions will apply.

The EA's standing advice sets out the following requirements for the development to satisfy:

- floor levels;
- extra flood resistance and resilience measures;
- other permissions or consents.

Floor Levels

Finished Floor Levels (FFL) within the proposed extension will be set no lower than existing floor levels.

Extra flood resistance and resilience measures

Flood proofing/resilience and resistance techniques should be fitted within the building in accordance with CIRIA guidance, Improving the flood performance of new buildings – Flood Resilient Construction (2007) and C790 Code of Practice for Property Flood Resilience (2020), and will comprise the below:

- Installation of demountable door guards on all property entrances or flood proof doors & windows;
- Adequate waterproof sealing around doors and windows;
- Recoverable or waterproof internal wall finishes;
- Waterproof external wall finish or re-pointing brickworks up to 0.6m above ground level with water resistant mortar;
- Sealed service and cable entry points;
- Smart air brick or vent covers;
- Electrical and gas appliances elevated adequately above floor level and supplied from above;
- Installation of non-return valves on drains to prevent backflow;

Other permissions and consents

The Woodbridge Brook along the western boundary of the site is classified as an EA main River, however the Environment Agency (EA) does not need to be directly consulted for a minor residential extension (under 250m²) in Flood Zone 2, provided it is over 20m from a main river and their standing advice is followed.

Proposed extension measures 60m² and is located 32m from the river at its nearest extent.

5.0 Sequential and Exception Test

The Sequential Test aims to steer development towards areas of lowest flood risk. In accordance with the National Planning Policy Framework (NPPF) Planning Practice Guidance, Table 2, buildings used for dwelling houses are classified as 'More Vulnerable', for which development within Flood Zone 1 and 2 is considered acceptable.

As the proposed extension is allocated in flood risk zone 2, with a floor level matching the existing property and demolished extension, it is deemed to pass the Sequential Test, and no Exception Test is required.

6.0 Surface Water Drainage Proposals

Refer to DC Drawing 1268-01-01 [Surface Water Drainage Strategy] in Appendix A.

This section of the report addresses how flood risk generated as a result of developing the site will be managed using sustainable control measures to ensure that flood risks are not increased on and off the site and how surface water is managed post development

6.1 Drainage Hierarchy

The surface water drainage strategy for the site has been prepared in accordance with the drainage discharge hierarchy from CIRIA C753 The SuDS Manual, where the first available option will be utilised as follows.

Technique		Summary
1	Infiltration to the maximum extent that is practical	Proposed solution – Cornbrash soils allow use of infiltration, confirmed by on-site infiltration testing.
2	To surface water body	Not required.
3	To a surface water sewer, highway drain or another drainage system	Not required. No surface water drains available.
4	To a combined sewer	Not required

6.2 Infiltration Design

Good infiltration properties of the Cornbrash soils below the site enables the use of soakaways and permeable surfaces for drainage of the roof and external hard surfaces.

On-site infiltration testing was completed in April 2026 and returned an infiltration rate of $6.41 \times 10^{-6} \text{m/s}$.

Calculations indicate SuDS attenuation of 6.21m^3 will be required to accommodate roof water flows for storm events up to and including the 100year +45% climate change event. The proposed cellular soakaway provides a storage volume of 7.2m^3 .

Refer to the proposed drainage calculations enclosed within Appendix E of this report.

While the proposed extension increases the sites impermeable area by 20m^2 , the rear portion of the existing building will be directed to the new Suds features, which along with the demolition of the existing extension, removes 70m^2 impermeable surface catchment from the sewer network.

6.3 Design Exceedance

Should the drainage system and SuDS fail under extreme events or blockages, floodwaters will follow the natural topography to the west toward the brook, mirroring the existing development arrangement. Exceedance routes are shown on DC drawing 1268-01-01 [Surface Water Drainage Strategy] in Appendix A.

6.4 Water Quality

The proposed impermeable catchment comprises roof only. Runoff from these surfaces will contain negligible contaminant loadings. Any debris captured by the gutter systems will be intercepted within upstream chambers and catchpits and textiles that wrap the cellular soakaway units will clear any further contaminants before discharging to ground.

6.5 Adoption

The onsite drainage components will remain private and be the maintenance responsibility of the property owners.

6.6 Maintenance

Regular inspection and maintenance are important for the effective operation of the SuDS systems as designed. The regular maintenance of SuDS should be carried out in line with C753 The SUDS Manual (CIRIA, November 2015) or as per manufacturer's specification.

Pipework and Catchpits

It is not envisaged that silt build up within the pipework systems will require rigorous maintenance. Notwithstanding this, a suitable maintenance regime for the systems will comprise of routine inspection (every six months) and silt removal as necessary.

Cellular Soakaway

The design of soakaways should include monitoring points where the water level in the system can be observed or measured. This can either be via an inspection well or upstream catch pit

The useful life and effective operation of an infiltration component is related to the frequency of maintenance and the risk of sediment being introduced into the system.

It is not envisaged that silt build up within the cellular crate systems will require a rigorous maintenance regime so long as silt is removed from upstream catch pits and inspection chambers on a regular basis. Camera access can be gained via inspection chambers and inlet pipework to the soakaway. Silt removal can be achieved by jetting the inspection tunnels, where a standard jet head with rear facing nozzles should be used. The head should be fed to the far end of the crate tunnel via the nearest inspection chamber, activated and retracted. As the nozzle is removed, debris will be swept back into the inspection chamber where it can then be removed with the use of a standard gully sucker.

7.0 Conclusions

The proposed residential property extension is located within Flood Zone 2.

Minor domestic extensions are considered appropriate with Flood Zone 2 and will be appropriately managed by adopting flood resilient measures within the construction. The proposed floor level will be no lower than the existing property, in line with EA standing advice.

The proposed replacement extension will generate an increase in impermeable surface area of 20m² when compared to existing.

Surface water runoff from the new extension and areas of existing impermeable surfaces will be directed to new sustainable drainage systems that dispose of water at source via infiltration. On site storage will be provided within a cellular soakaway Sustainable Urban Drainage System (SUDS). The SUDS features have been designed to accommodate the 1 in 100 year storm, including a 45% allowance for climate change, in accordance with NPPF guidance.

The proposed extension SuDS will provide a reduction in flows contributing to the adopted sewer, by redirecting flows from the rear of the property in to the new SuDS, thus relieving pressure on the existing network and providing an improvement on the existing arrangement serving the property.

The proposed SUDS and all other surface water drainage components will be maintained by the owners of the property.

This study has been undertaken in accordance with the principles set out in the NPPF. We can conclude that development adheres to the conditions advised in this report and the proposals can be accommodated without increasing flood risk within the locality in accordance with objectives set by Central Government and the EA.

Dixon Civils Ltd

Issue 1 - May 2026

APPENDIX A

Drawings By Dixon Civils

Drawing ref. 1268-01-01

Surface Water Drainage Strategy

APPENDIX B

Drawings By Others

Drawing ref. 2529-20

Existing Roof Block Plan (PI Davis
Architectural Design)

Drawing ref. 2526-200A

Proposed Roof Block Plan (PI Davis
Architectural Design)

APPENDIX C

Wessex Water Sewer Records

APPENDIX D

BRE365 Test Results

APPENDIX E

Infodrainage Calculations



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