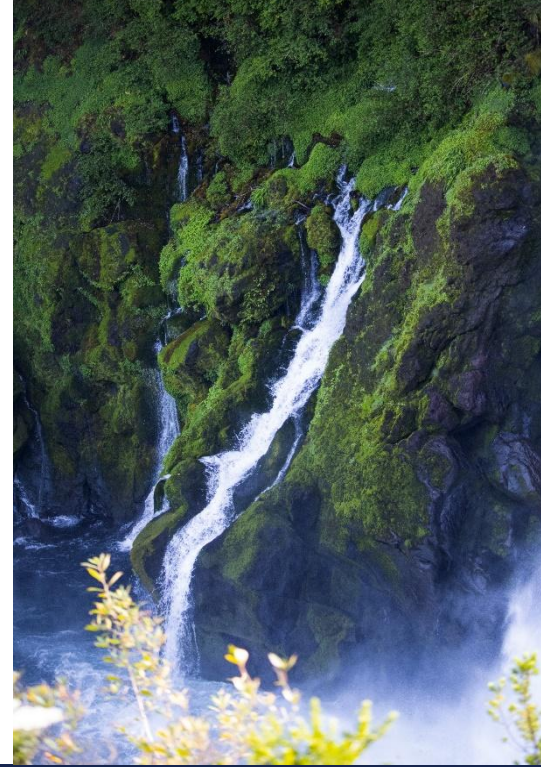




Flood Risk Assessment, Surface Water Drainage Strategy, and Foul Water Drainage Strategy AEG4486_SN4_WinterbourneBasset_07

Site Address: Land adjacent to The Old Chapel
Winterbourne Basset
Wiltshire
SN4 9QB

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies



Document Issue Record

Project: Flood Risk Assessment, Surface Water Drainage Strategy, and Foul Water Drainage Strategy

Prepared for: Centre Forward Marketing Promotions

Reference: AEG4486_SN4_WinterbourneBasset_07

Site Location: Land adjacent to The Old Chapel, Winterbourne Basset, Wiltshire, SN4 9QB

Issue	Date	Author	Check	Auth.	Comments
1	23/12/2025	Daniel Cunningham	JA	NB	First issue
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Summary

Development Description	Existing	Proposed
Development Type	A greenfield site	The construction of 2no. residential dwellings
EA Vulnerability Classification	N/A	More Vulnerable
Ground Floor Level	Based on EA LiDAR data, site elevations range between approximately 167.55m Above Ordnance Datum (AOD) and 168.87m AOD.	No Change
Level of Sleeping Accommodation	N/A	Ground and first floor
Impermeable Surface Area	N/A	720m ²
Surface Water Drainage	N/A ¹	A drainage strategy has been developed for the site to sustainably manage surface water runoff. See Section 6 of this report.
Site Size	Approximately 1330m ²	No change
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 1	The site is located within Flood Zone 1 and considered to be at low risk from all sources of flooding assessed.
Flood Source	Low risk	
SFRA Available	Wiltshire Council Level 1 Strategic Flood Risk Assessment (Wiltshire Council, 2024)	
Management Measures	Summary	Comment
Ground floor level above extreme flood levels	Yes	The site is located within Flood Zone 1 and considered to be at low risk from all sources of flooding assessed.
Safe Access/Egress Route	Yes	The site, proposed access points, and adjacent road (High Street) are

Flood Resilient Design		outside all modelled fluvial and pluvial flood extents, therefore dry access/egress is available.
	No required	The site is located within Flood Zone 1 and considered to be at low risk from all sources of flooding assessed.
	N/A ¹	A drainage strategy has been developed for the site to sustainably manage surface water runoff. See Section 6 of this report
Site Drainage Plan	N/A ¹	A drainage strategy has been developed for the site to sustainably manage surface water runoff. See Section 6 of this report
Flood Warning and Evacuation Plan	N/A	Recommended that occupier monitor Met Office Weather Warnings for extreme weather events.
Offsite Impacts		Summary
Displacement of floodwater	Comment	
	Negligible	The site is located within Flood Zone 1 and considered to be at low risk from all sources of flooding assessed.
	Negligible	A drainage strategy has been developed for the site to sustainably manage surface water runoff. See Section 6 of this report
Increase in surface run-off generation		
Impact on hydraulic performance of channels	Consultation recommended	Given part of plot 1 is located <8m from the eastern riverbank, consultation with the local council should be undertaken to obtain in relation to an ordinary watercourse consent (OWC), as necessary.

¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Centre Forward Marketing Promotions to undertake a Flood Risk Assessment (FRA), Surface Water Drainage Strategy (SWDS), and Foul Water Drainage Strategy (FWDS) to facilitate a planning application for the proposed development. This report has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA, SWDS, and FWDS is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is Land adjacent to The Old Chapel, Winterbourne Bassett, Wiltshire, SN4 9QB (Figure 1).

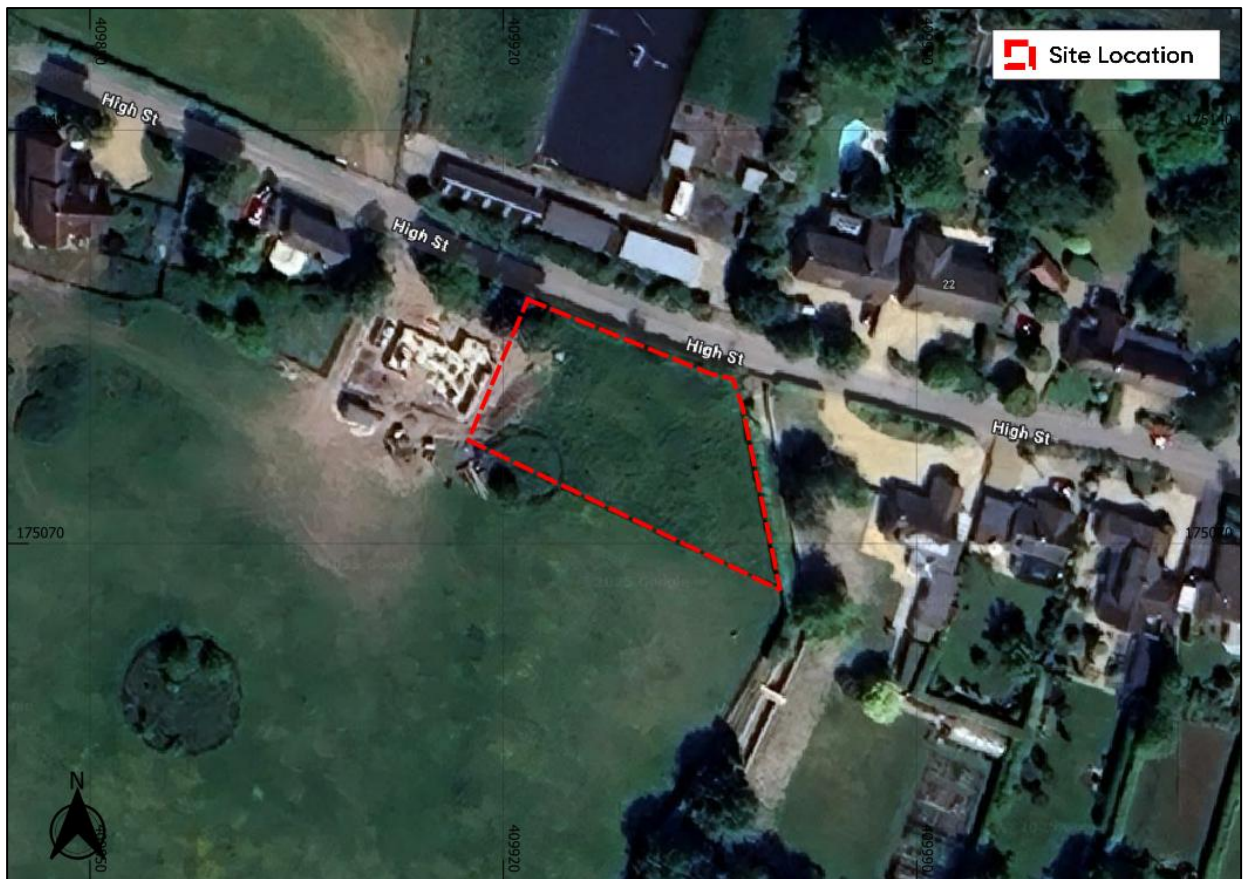


Figure 1: Site Location (Base map and data from Google Hybrid ©)

- 1.4. The proposed development is for the construction of two residential dwellings on an existing greenfield site. The development proposals are presented in Appendix A.
- 1.5. In the absence of a topographical survey, Environment Agency (EA) Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site. The EA LiDAR data shows the ground elevation of the site varies between approximately 167.55m AOD (Above Ordnance Datum) and 168.87m AOD (Figure 2). It is noted that the site slopes from west to east towards the watercourse bounding the site's eastern site boundary.

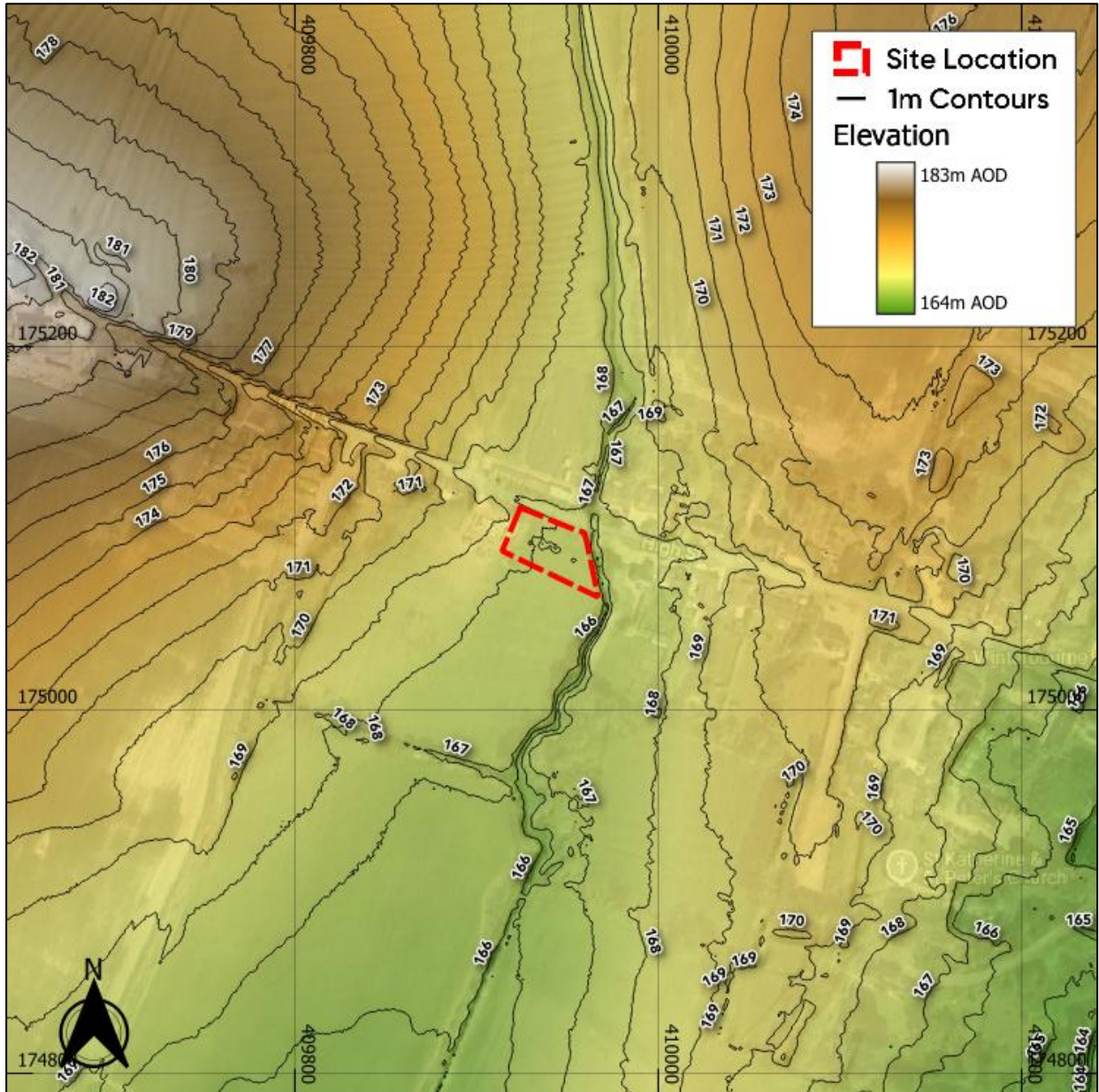


Figure 2: Site Topography (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 1.6. Wiltshire Council is the Local Planning Authority (LPA) for the site and also the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Wessex region.

Planning Policy and Guidance

- 1.7. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

- 1.8. The site is in close proximity to the Flood Zone 2 and 3 extent and as such an FRA has been prepared.

- 1.9. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial/tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

¹<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

2. Planning Policy

- 2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework² (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

170. 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.

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

²<https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

- d) any residual risk can be safely managed; and
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

2.3. Footnote 63 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or

land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).

Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

- 2.5. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 2.6. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

Core Strategy

- 2.7. The Core Strategy prepared by the Local Planning Authority, Wiltshire Council, sets out the policies for development in the local area.
- 2.8. Policy 67 Flood risk outlines the requirements for new development within the area. It states:

Flood Risk Development proposed in Flood Zones 2 and 3 as identified within the Strategic Flood Risk Assessment will need to refer to the Strategic Housing Land Availability Assessment when providing evidence to the local planning authority in order to apply the sequential test in line with the requirements of national policy and established best practice.

All new development will include measures to reduce the rate of rainwater run-off and improve rainwater infiltration to soil and ground (sustainable urban drainage) unless site or environmental conditions make these measures unsuitable.

National Standards for SuDS

2.9. Updates to the national planning policy have defined a framework for Sustainable Drainage Systems (SuDS). The new 'National Standards for SuDS'³ was published on June 19th, 2025, and is used to inform this drainage strategy. There are seven key standards as follows;

- **Standard 1 Runoff Destination:** The drainage hierarchy now prioritises water re-use followed by infiltration, before discharging to watercourses and sewers.
- **Standard 2 Management of Everyday Rainfall (interception):** The design must ensure that the first 5mm of rainfall from any event is managed within the site and does not leave the boundary.
- **Standard 3 Management of Extreme Rainfall and Flooding:** The SuDS must be designed to manage runoff from all extreme rainfall events, up to and including the 1 in 100-year return period (including an allowance for climate change).
- **Standard 4 Water Quality:** The system must be designed to prevent or mitigate the risk of surface water runoff pollution using SuDS management trains.
- **Standard 5 Amenity:** The SuDS should be designed to improve the aesthetic value of the development, demonstrating multifunctional solutions where feasible.
- **Standard 6 Biodiversity:** The system should be designed to promote biodiversity using above ground SuDS where feasible.
- **Standard 7 Maintenance:** A clear plan must be provided for the long-term operation and maintenance of the SuDS to ensure it remains effective for the lifetime of the development.

Sequential and Exception Tests

2.10. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

³ <https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>

- 2.11. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

Sequential Test

- 2.12. Paragraph 175 of the NPPF states:

*The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a **site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).***

- 2.13. This FRA demonstrates that the proposed development, including access, is at low risk of flooding from all analysed sources. As such, the sequential test is not required in line with NPPF Paragraph 175.

Exception Test

- 2.14. The Exception Test is applied to sites based on the Flood Zone and the nature of the development. As the proposed development consists of residential use it would be classed as 'More Vulnerable' in line with government development use classes.
- 2.15. The Flood Risk Vulnerability Classification table⁴ provided below in Table 2 shows which vulnerabilities are appropriate in each Flood Zone.
- 2.16. The proposed development sits within Flood Zone 1 and the proposed use is 'More Vulnerable'. Table 2 shows Flood Zone 1 is an appropriate location for 'More Vulnerable' uses without the need for an Exception Test.

⁴ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#table2>

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

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	✓

Summary

- 2.17. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Consultation and Review

Documents and Online Mapping

- 3.1. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.2. The following sources of information have been reviewed for this assessment:
- Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Ministry of Housing, Communities and Local Government, 2022)
 - Geoindex Onshore (British Geological Survey, 2024)
 - Wiltshire Core Strategy (Wiltshire Council, 2015)⁵
 - Preliminary Flood Risk Assessment Addendum (Wiltshire Council, 2017)⁶ and Preliminary Flood Risk Assessment (Wiltshire Council, 2011)⁷

⁵ https://www.wiltshire.gov.uk/media/372/Wiltshire-Core-Strategy-adopted-2015/pdf/Wiltshire_Core_Strategy_2015.pdf?m=1735555642237

⁶ https://assets.publishing.service.gov.uk/media/5accb54640f0b617df3356c9/PFRA_Wiltshire__County_Council_2017.pdf

⁷ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328094443/http://www.environment-agency.gov.uk/research/planning/135540.aspx#10>

- Wiltshire Council Level 1 Strategic Flood Risk Assessment (Wiltshire Council, 2024)⁸
- Wiltshire Local Flood Risk Management Strategy (Wiltshire Council, 2015)⁹
- CIRIA SuDS Manual (2015)¹⁰

Preliminary Flood Risk Assessment (PFRA)

- 3.3. The PFRA and its Addendum, published in 2011 and 2017, is a high-level appraisal of flood risk across Lead Local Flood Authority Wiltshire Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.4. The PFRA summarises historical flood incidents in Wiltshire Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.5. The SFRA, published in 2024, provides the evidence base for the Local Planning Authority Wiltshire Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.6. The SFRA mapping provided by Wiltshire Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

- 3.7. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.

⁸ https://www.wiltshire.gov.uk/media/14497/SD67-Wiltshire-Level-1-Strategic-Flood-Risk-Assessment-2024/pdf/SD67_Wiltshire_Level_1_Strategic_Flood_Risk_Assessment_2024.pdf?m=1733141632550

⁹ <https://www.wiltshire.gov.uk/media/204/Wiltshire-local-flood-risk-management-strategy/pdf/Flood-risk-management-strategy-civil-emergencies.pdf?m=1572623137863>

¹⁰ https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753F

- 3.8. The Wiltshire Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

CIRIA C753 SuDS Manual

- 3.9. The CIRIA SuDS manual has been used throughout this SWDS in order to determine an appropriate strategy for the proposed development. This guidance covers the planning, design, construction and maintenance of Sustainable Drainage Systems (SuDS) to assist with their effective implementation within both new and existing developments. It looks at how to maximise amenity and biodiversity benefits and deliver the key objectives of managing flood risk and water quality. There is also supporting information covering topics such as materials, landscape design, maintenance, community engagement and costs and benefits.

4. Sources of Flood Risk

Fluvial/Tidal

- 4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.
- 4.2. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high. The site is located a significant distance from the sea and therefore tidal flood risk is low.

Main Rivers and Ordinary Watercourses

- 4.3. There are no EA main rivers within 500m of the site.
- 4.4. Based on OS mapping and EA LiDAR topographic levels, there is an unnamed watercourse on the eastern boundary of the site. The proposals include a retaining wall located approximately 3m from the bank of the river. Given this is located within 8m from the riverbank it is recommended consultation with the local council is undertaken to obtain an ordinary watercourse consent, as necessary.

EA Flood Map for Planning

- 4.5. The site is located within Flood Zone 1 (Figure 3). Flood Zone 1 denotes a risk of flooding from fluvial and tidal sources less than 1 in 1,000 (0.1%) annual probability.
- 4.6. It is noted that Flood Zone 2 and 3 extents are located just east of the eastern boundary of the site, associated with the unnamed watercourse. There is no detailed EA model available for the adjacent watercourse. Therefore, the latest EA Flood Map for Planning dataset including for climate change has been assessed to provide the most accurate assessment available. This shows that the flood zones do not impede within the site boundary and as such does not affect the proposed development footprint. Furthermore, review of the 'Flood Zones plus climate change' extent also shows that the site would remain unaffected in the future when including for the impacts of climate change.

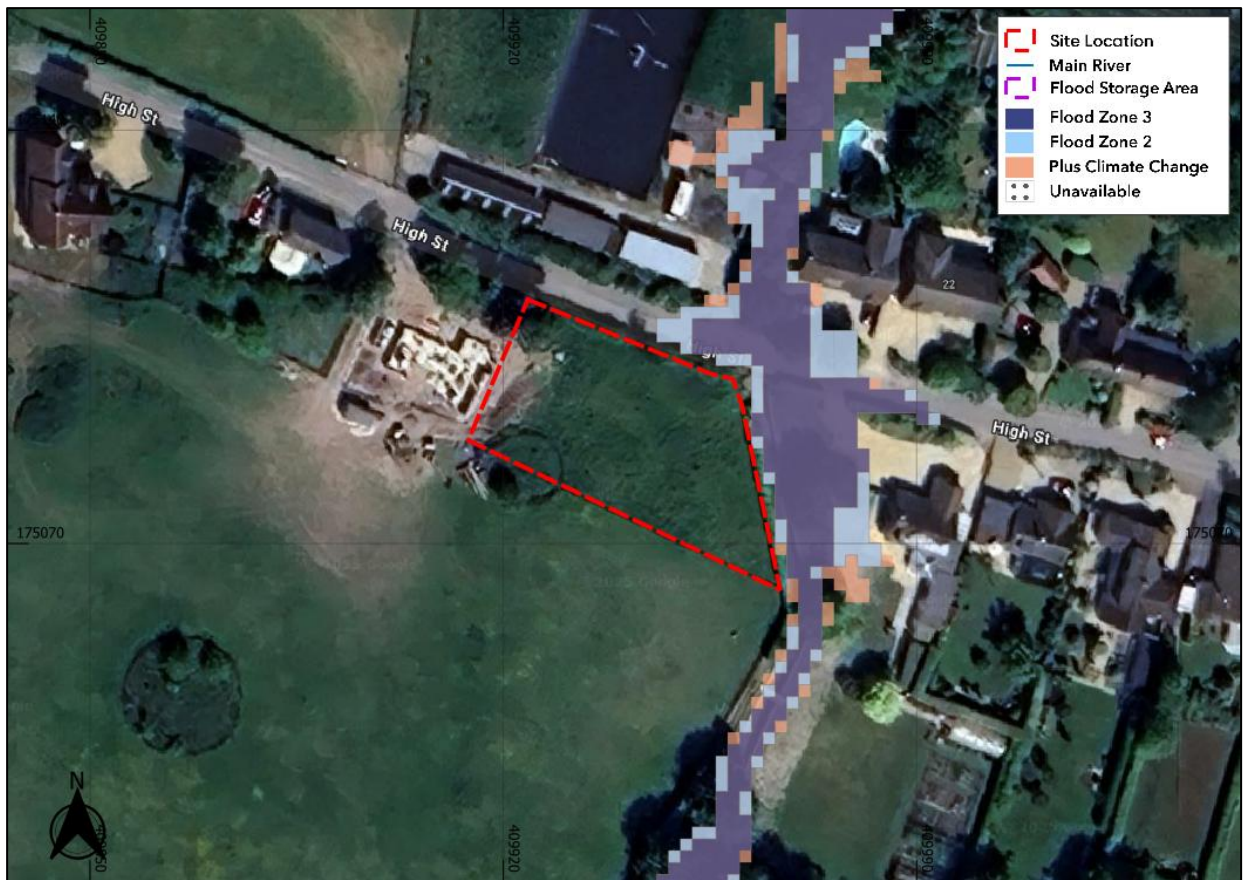




Figure 4: NaFRA2 Modelled 1 in 100 + Climate Change Flood Extent (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Historical Fluvial/Tidal Flooding

- 4.8. There is no record of historical fluvial/tidal flooding on-site based on the EA's recorded flood outline dataset (Figure 5). The nearest Historical Flood extent is located approximately 230m east of the site and was caused by '*channel capacity exceeded due to no raised defences*' in 2007. This did not affect the site boundary and the watercourse associated with the flood extent and the site is separated by an area of higher land based on EA LiDAR mapping.

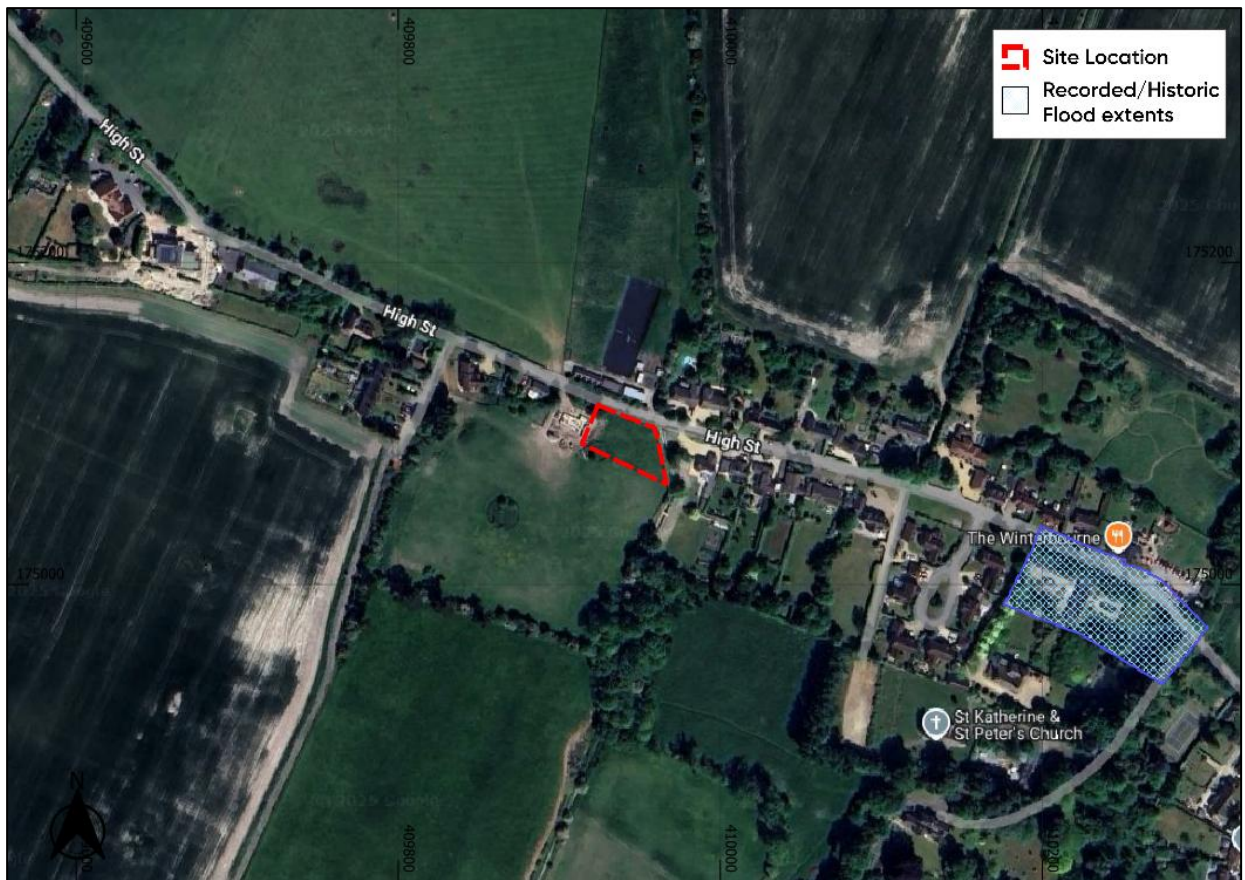


Figure 5: EA Historic Flood Mapping (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Fluvial and Tidal Flood Risk Summary

- 4.9. Based on the data reviewed above, the risk of fluvial and tidal flooding to the site is considered to be low.

Canals

- 4.10. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.
- 4.11. The site is not located within 500m of any canals as per the UK CRT Network mapping¹¹.

¹¹ <https://canalrivertrust.org.uk/canals-and-rivers>

4.12. The risk of flooding to this site from canals is considered to be low.

Pluvial

4.13. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

Risk of Flooding from Surface Water Mapping

4.14. The National Flood Risk Assessment (NaFRA2) has updated the Risk of Flooding from Surface Water (RoFSW) products which show the chance of flooding from surface water to areas of land.

4.15. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).

4.16. Risk is displayed as one of three likelihood categories:

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

4.17. The RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at the following intervals from 20cm to 120cm:

- 0.2m, 0.3m, 0.6m, 0.9m, 1.2m

4.18. As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

- 4.19. Based on the EA 'Flood Risk from Surface Water' map indicates that the site is not with the low, medium, or high risk extents. As such, the surface water risk with added climate change will be assessed as a worst case scenario.
- 4.20. The EA 'Flood Risk from Surface Water Climate Change' map indicates that the site is not within the low, medium, or high likelihood extents (Figure 6).

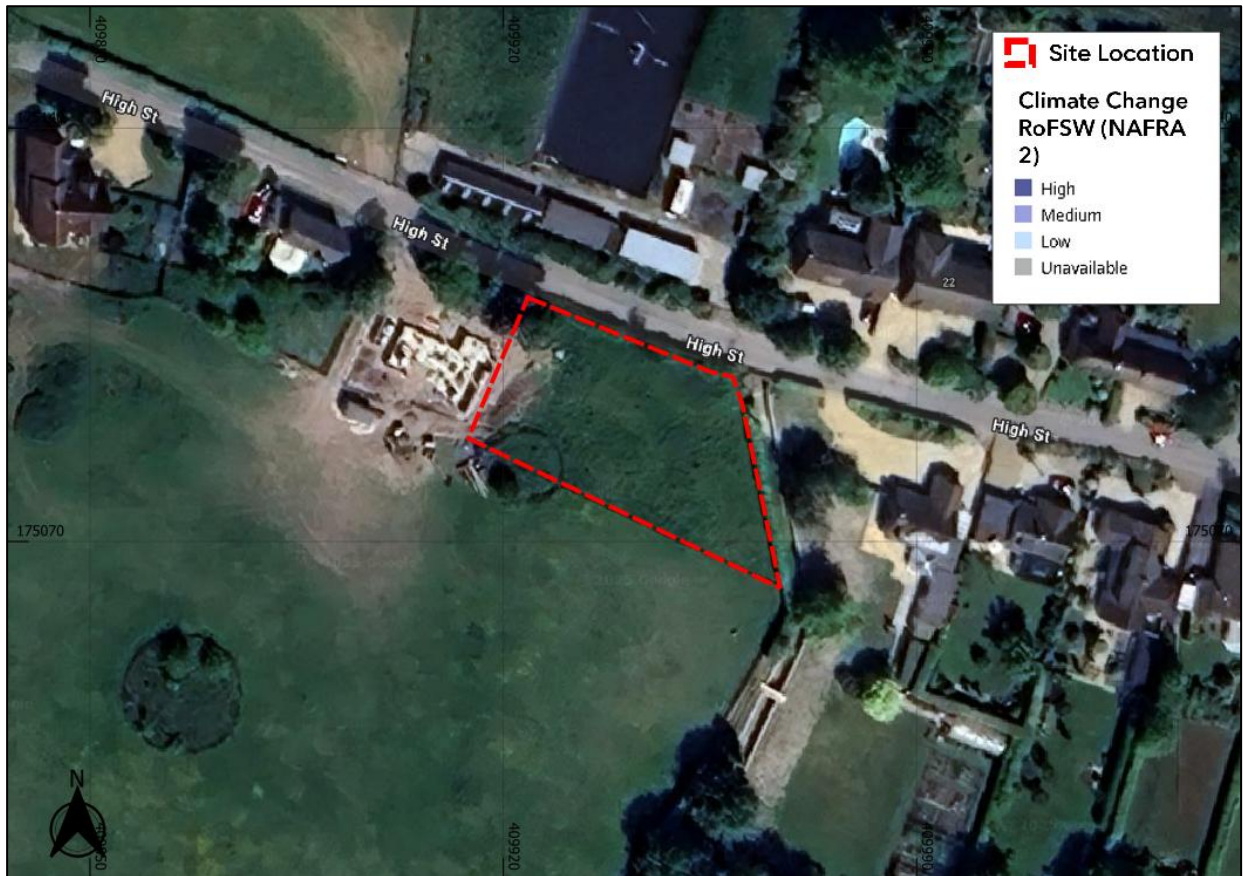


Figure 6: EA Surface Water Flood Risk Climate Change Extent (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 4.21. As such, the risk to the site and the proposed development from surface water flooding is considered low.

Reservoirs

- 4.22. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely the consequences would be significant, leading to rapid inundation of the downstream floodplain.

- 4.23. According to the EA's Flood Risk from Reservoirs mapping the site is outside flood extents in the event of reservoir flooding (Figure 7).

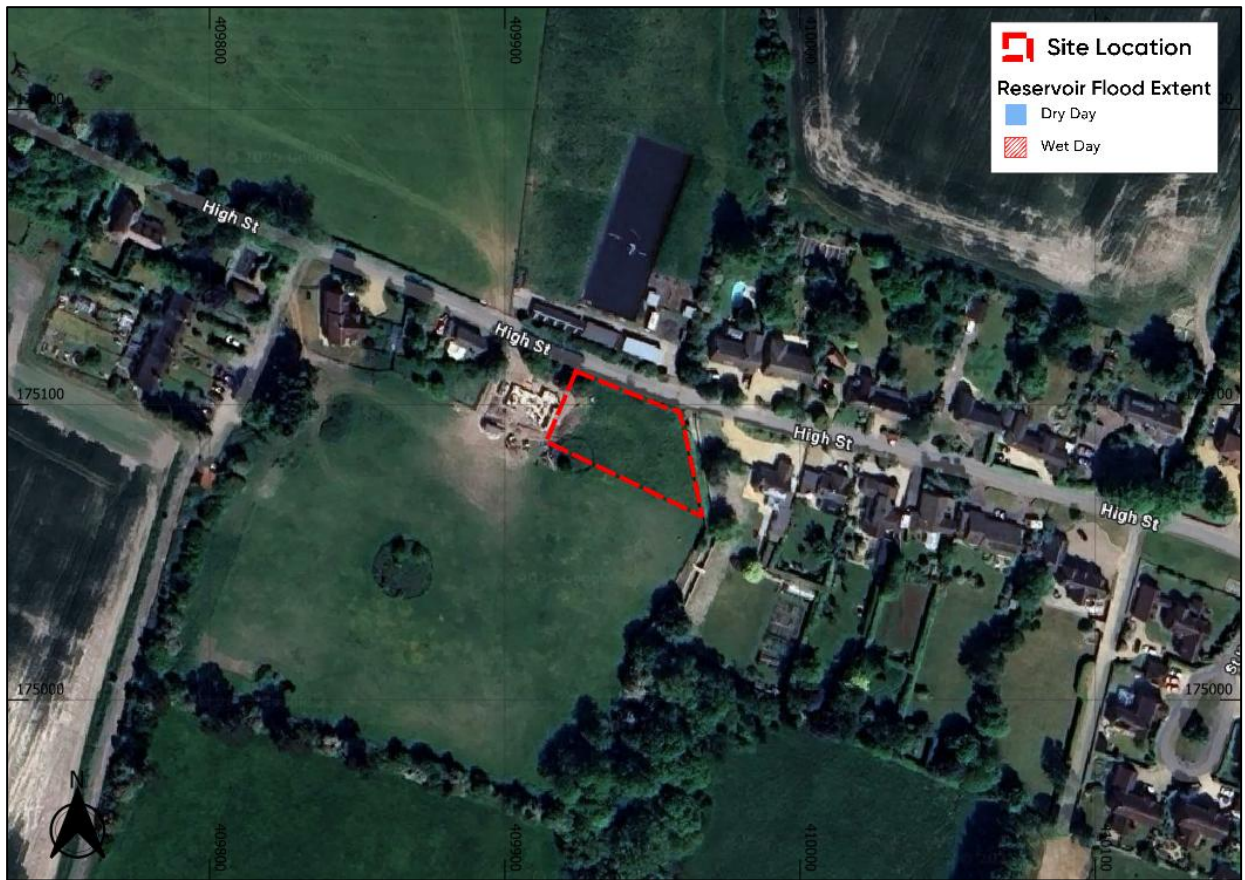


Figure 7: EA Reservoir Flood Risk Mapping (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 4.24. The site has not been flagged as being at risk of flooding following a reservoir failure.

Groundwater

- 4.25. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.
- 4.26. The British Geological Survey's (BGS) mapping shows superficial deposits of Head comprised of clay, silt, sand and gravel underlying the site. The bedrock underlying the site is mapped as Zig Zag Chalk Formation comprised of chalk.
- 4.27. Based on groundwater investigations carried out at the site by Clear Environmental Ltd, the geology consists of a mixture of clay and chalk and the deepest borehole excavated was 5m below ground level (bgl). The investigations stated that:

No groundwater was encountered during progression of any of the excavations. In addition, both boreholes were monitored for groundwater following completion of the works and were dry.

- 4.28. The SFRA presents JBA Groundwater Emergence Mapping. The site is shown to be in an area where 'there is a risk of flooding to subsurface assets but specific manifestation of groundwater is unlikely' (Figure 8).

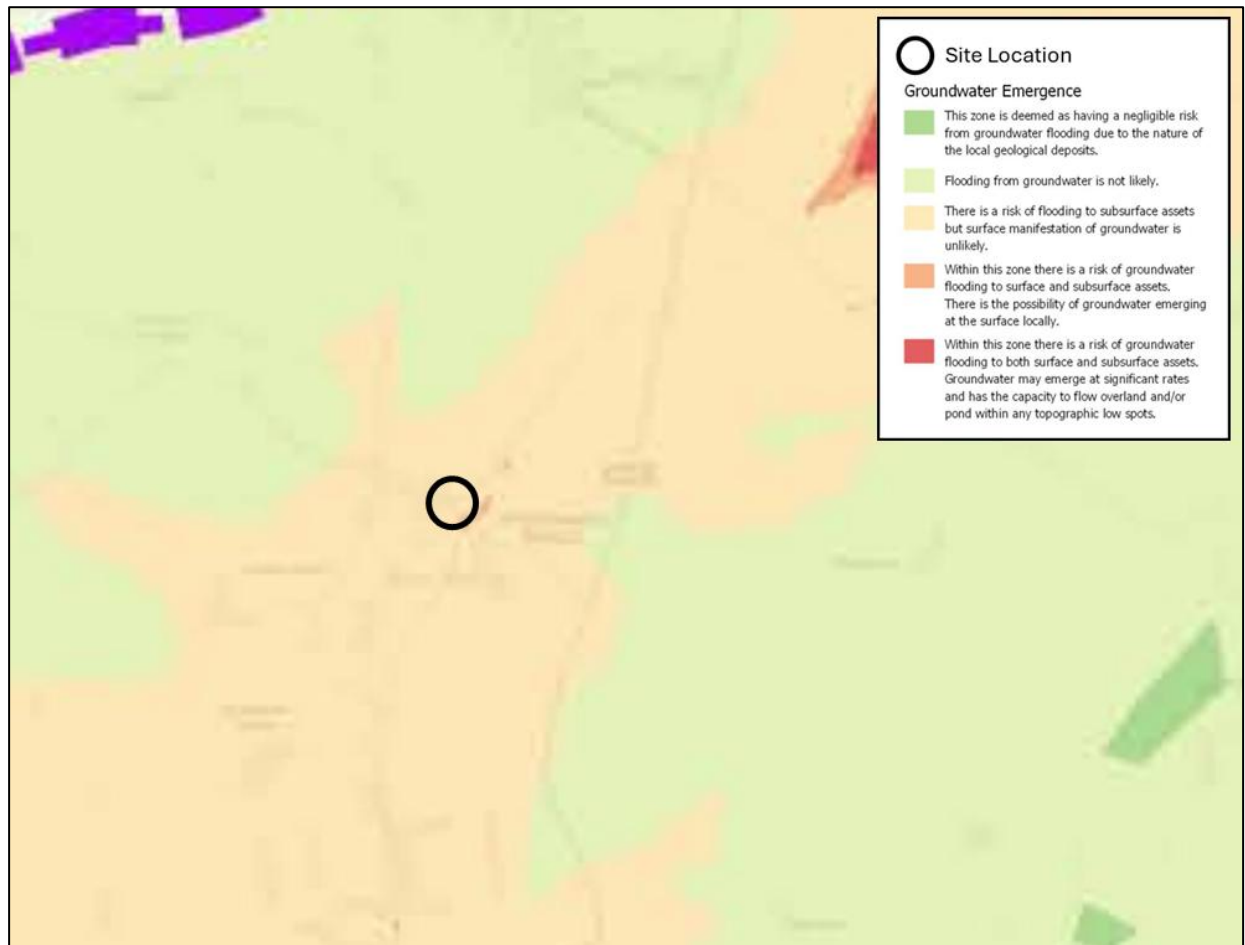


Figure 8: JBA Groundwater Emergence Mapping (Wiltshire Council SFRA, 2024)

- 4.29. In light of the information above, and as the development proposals do not include any proposed basements, the risk from groundwater to the development is considered to be low.

Sewers

- 4.30. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.
- 4.31. The SFRA provides mapping of historical sewer flood incident records kept by the local authority. The site is shown to be in an area that has been affected by between 11 – 20 sewer flooding incidents (Figure 9). However this covers a wide area and there is no evidence to suggest that the site has been affected by sewer flooding in the past. Furthermore, based on the provided asset plan by Thames Water, there are no public sewers within the vicinity of the site.



Figure 9: Historical Sewer Flooding (Wiltshire Council SFRA, 2024)

- 4.32. The development is therefore considered to be at low risk of flooding from sewers.

5. Flood Risk Mitigation

Fluvial/Tidal

- 5.1. The site is located within Flood Zone 1 (Figure 3). Flood Zone 1 denotes a risk of flooding from fluvial and tidal sources less than 1 in 1,000 (0.1%) annual probability.
- 5.2. It is noted that Flood Zone 2 and 3 extents are located just east of the eastern boundary of the site, associated with an unnamed watercourse. The flood zones do not impede within the site boundary and as such would not affect the proposed development footprint. Furthermore, review of the 'flood zones plus climate change' extent also shows that the site is expected to remain in Flood Zone 1 in the future when allowing for the impacts of climate change.
- 5.3. As such, the risk to the site from fluvial and tidal sources is considered low.

Canals, Pluvial, Reservoirs, Groundwater and Sewers

- 5.4. Flood risk from other sources is deemed to be low, therefore mitigation is not required.

Increase to Flood Risk Elsewhere

- 5.5. The proposed development is for the construction of two residential dwellings on an existing greenfield site.
- 5.6. The risk from all sources assessed has been considered low, furthermore, a SWDS has been produced (see Section 6 of this report) to manage runoff arising from the proposed impermeable areas. As such, any impact on flood risk elsewhere is considered negligible.

Access/Egress and Flood Warnings

Fluvial

- 5.7. Review of the EA NaFRA2 data indicates that during the 'design' 1 in 100 +CC event, dry access/egress can be achieved travelling westward on High Street, away from the flood extent (Figure 10). It is noted that both proposed access routes into the site are not affected by the 1 in 100 +CC extent.



Figure 10: NaFRA2 Modelled 1 in 100 + Climate Change Flood Extent (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 5.8. The site is located in the Environment Agency 'River Kennet from Berwick Bassett to Fyfield' flood warning service area. As a precautionary approach, it is therefore recommended that residents sign up to the warning service. This service allows residents to register an address along with contact details so that, in the event of a flood being forecast, they are sent an alert.
- 5.9. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides site owners some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide residents with time to take necessary action, e.g. communication of the risk of flooding to other occupants, evacuation of occupants offsite or to a safe level, and/or removal of valuable items out of reach of flooding.

Pluvial

- 5.10. As can be seen in Figure 11, the site and surrounding access roads are not affected by surface water flooding even when considering climate change. As such, dry access/egress is considered to be achievable during a surface water flooding event.

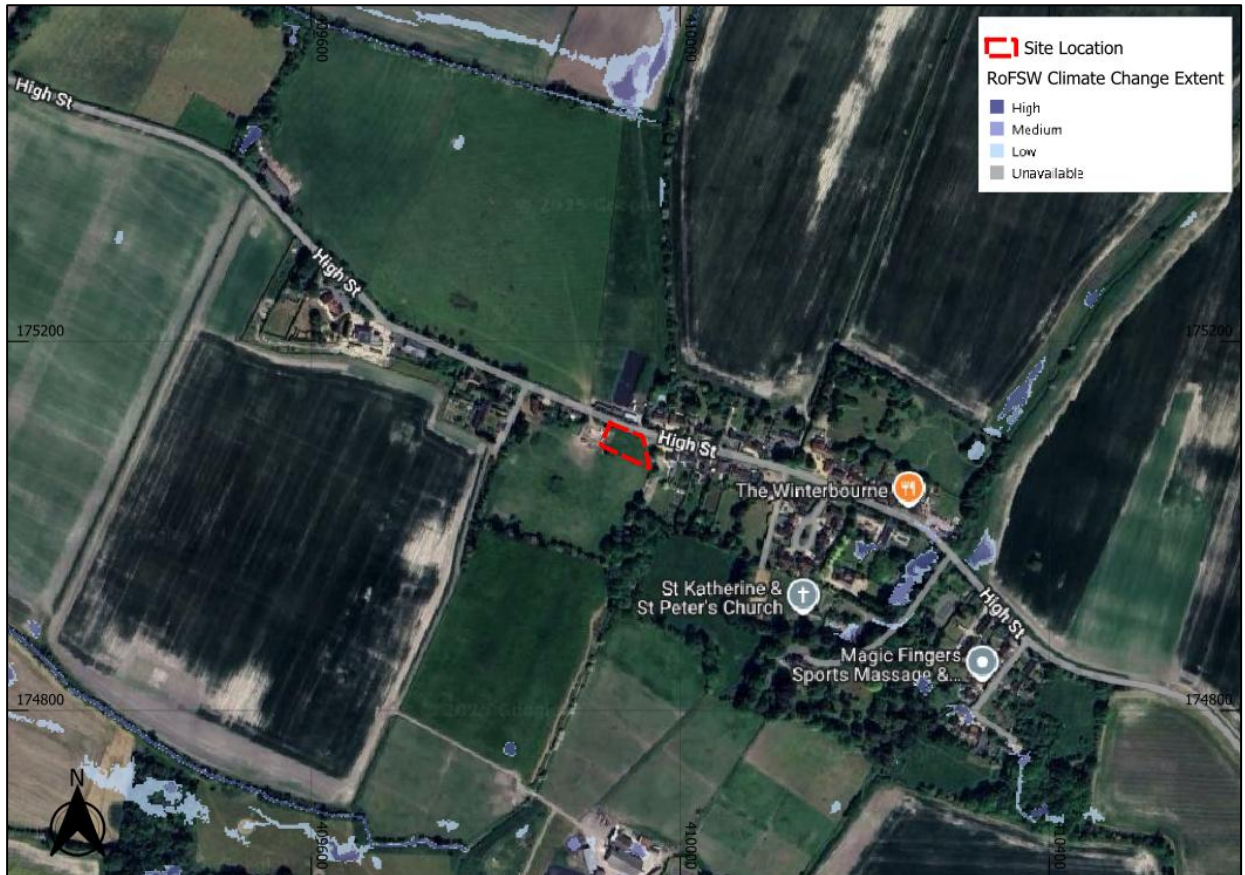


Figure 11: EA Surface Water Flood Risk Mapping Climate Change Depth >0.3m (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 5.11. To take a precautionary approach, it is recommended that residents should monitor Met Office Weather Warnings to be prepared for extreme weather events. Met Office is the national meteorological service for the UK; they issue weather warnings up to 5 days in advance, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. It is also possible to stay up to date with weather warnings through the Met Office app (available on both android and apple), social media e.g. X (formerly Twitter), Facebook or email alerts.

- 5.12. During periods of bad weather, residents should monitor local weather reports and sign up for the Met Office UK weather warnings. Procedures should be formalised (if not done so already) in the event of a severe weather warning or flooding.

6. Surface Water Drainage Strategy

Surface Water Drainage Hierarchy

- 6.1. In accordance with the SuDS management train approach, the use of various SuDS measures to reduce and control surface water flows have been considered in detail for the development in Table 3, overleaf.
- 6.2. The management of surface water has been considered in respect to the SuDS hierarchy below, as detailed in the Statutory Guidance National standards for sustainable drainage systems (SuDS) (2025).

Table 3: SuDS Drainage Hierarchy

SuDS Drainage Hierarchy				
			Suitability	Comment
	1.	Collection for non-potable use	✓	Slim water butts could be installed beneath rainwater downpipes for non-potable uses on site.
	2.	Infiltration	x	The British Geological Survey's (BGS) mapping shows superficial deposits of Head comprised of clay, silt, sand and gravel underlying the site. The bedrock underlying the site is mapped as Zig Zag Chalk Formation comprised of chalk. Online soil mapping suggests that the site is underlain by 'Freely draining lime-rich loamy soils' Clear Environmental Ltd have carried out infiltration testing at the site. The infiltration testing (Ref 251006) appears to have failed and as such infiltration is not conserved to be a viable option.
	3.	Discharge rainwater direct to a watercourse	✓	Based EA LiDAR data and OS mapping there is a watercourse on the eastern boundary of the site, downhill from the proposed development. This watercourse is to be used as the outfall for the proposed surface water drainage strategy. The watercourse should be fully surveyed to confirm bed and bank levels prior to detailed design, and the strategy refined to suit surveyed levels. Discharge consent should be agreed with the Council, post planning.
	4.	Discharge to surface water sewer, highway drain or similar	x	Outflow to the watercourse is the preferred method of surface water discharge in the SuDS hierarchy.
	5.	Discharge to combined sewer	x	Furthermore, based on the asset plan provided by Thames Water there are no public sewers in vicinity of the site.

- 6.3. On review of the SuDS drainage hierarchy, and with reference to both national and local policy, it is proposed that the surface water runoff from the proposed development is discharged to the eastern watercourse at a restricted rate; subject to consent from the LLFA post-planning. The watercourse should be fully surveyed to confirm bed and bank levels prior to detailed

design, and the strategy refined to suit surveyed levels. Each plot is managed separately until the final outflow into the watercourse.

- 6.4. The potential for the use of various SuDS has been considered and optimised in the design, as per Table 4 overleaf.

Table 4: SuDS Components Suitability Summary Table

SuDS Component	Description	Constraints and Opportunities	Suitable?
1. Infiltrating SuDS	Infiltration can contribute to reducing runoff rates and volumes while supporting baseflow and groundwater recharge processes. The suitability and infiltration rate depends on the permeability of the surrounding soils.	Infiltration tests conducted at the site shows that infiltration is not a viable option.	No
2. Filter Drains and Filter Strips	Filter drains are shallow trenches filled with stone gravel that create temporary subsurface storage for the attenuation, conveyance and filtration of surface water runoff. Filter strips are uniformly graded and gently sloping strips of grass or dense vegetation, designed to treat runoff from adjacent impermeable areas by promoting sedimentation, filtration and infiltration.	There are no appropriate opportunities for filter drains or filter strips to be used throughout the site.	No
3. Permeable Pavement	Pervious surfaces can be used in combination with aggregate sub-base and/or geocellular/modular storage to attenuate and/or infiltrate runoff from surrounding surfaces and roofs. Liners can be used where ground conditions are not suitable for infiltration.	Permeable paving is considered appropriate.	Yes

SuDS Component	Description	Constraints and Opportunities	Suitable?
4. Green & Blue Roofs	Green Roofs provide areas of visual benefit, ecological value, enhanced building performance and the reduction of surface water runoff. They are generally more costly to install and maintain than conventional roofs but can provide many long-term benefits and reduce the on-site storage volumes.	No flat roofs proposed as part of the development.	No
5. Rainwater Harvesting (RWH)	Rainwater Harvesting is the collection of rainwater runoff for use. It can be collected from roofs or other impermeable areas, stored, treated (where required) and then used as a supply of water for domestic, commercial and industrial properties.	Rainwater harvesting could be utilised at the site.	Yes
6. Swales	Swales are designed to convey, treat and attenuate surface water runoff and provide aesthetic and biodiversity benefits. They can replace conventional pipework as a means of conveying runoff; however, space constraints of some sites can make it difficult incorporating them into the design.	Given the small scale of the development and limited space on site a new swale is not considered feasible. These SuDS measures are better suited to large scale developments.	No
7. Rills and Channels	Rills and Channels keep runoff on the surface and convey runoff along the surface to downstream SuDS components. They can be incorporated into the design to provide a visually	Channel Drains can be used to capture the runoff from the rear patios.	Yes

SuDS Component	Description	Constraints and Opportunities	Suitable?
	appealing method of conveyance. They also provide effectiveness in pre-treatment removal of silts.		
8. Bioretention Systems	Bioretention systems can reduce runoff rates and volumes and treat pollution through the use of engineer soils and vegetation. They are particularly effective in delivering interception but can also be an attractive landscape feature whilst providing habitat and biodiversity.	There is minimal space available for rainwater planters at downpipes.	No
9. Retention Ponds and Wetlands	Ponds and Wetlands are features with a permanent pool of water that provide both attenuation and treatment of surface water runoff. They enhance treatment processes and have great amenity and biodiversity benefits. Often a flow control system at the outfall controls the rates of discharge for a range of water levels during storm events.	Given the relatively small scale of the development a new pond/wetland is deemed unnecessary. These SuDS measures are better suited to large scale developments. There would also be no space to implement such features.	No
10. Detention Basins	Detention Basins are landscaped depressions that are usually dry, except during and immediately following storm events, and can be used as a recreational or other amenity facility. They are generally appropriate to manage high volumes of surface water from larger sites, such as a neighbourhood.	Given the relatively small scale of the development a new pond/wetland is deemed unnecessary. These SuDS measures are better suited to large scale developments. There would also be no space to implement such features.	No

SuDS Component	Description	Constraints and Opportunities	Suitable?
11. Geocellular Systems	Attenuation storage tanks are used to create a below-ground void space for the temporary storage of surface water before infiltration, controlled release or use. The inherent flexibility in size and shape means they can be tailored to suit the specific characteristics and requirements of any site.	Geocellular tanks have a been proposed in the gardens of the proposed dwellings in order to provide sufficient attenuation to restrict runoff from site.	Yes
12. Proprietary Treatment Systems	Proprietary treatment systems are manufactured products that remove specific pollutants from surface water runoff. They are especially useful where site constraints preclude the use of other methods and can be useful in reducing the maintenance requirements of downstream SuDS.	The site is generally considered a low level of pollutant risk, such that proprietary treatment systems are not considered to be required.	No

- 6.5. Following a review of the available SuDS options, and taking into account the site's constraints and opportunities, it is proposed that the surface water runoff from the proposed driveway and front facing roof catchments are drained to the permeable paving. Permavoid rainwater diffusers are used to disperse runoff evenly across the subbase of the permeable paving. The paving then connects to the rear geocellular tanks. The rear facing roofs are drained to the geocellular tanks which then outflow to the watercourse.
- 6.6. The proposed Surface Water Drainage Layout is included as Appendix B.

Infiltration Potential

- 6.7. The British Geological Survey's (BGS) mapping shows superficial deposits of Head comprised of clay, silt, sand and gravel underlying the site. The bedrock underlying the site is mapped as Zig Zag Chalk Formation comprised of chalk.
- 6.8. Online soil mapping suggests that the site is underlain by 'Freely draining lime-rich loamy soils'.

- 6.9. Based on groundwater investigations carried out at the site by Clear Environmental Ltd, the deepest borehole (5m) encountered a mixture of clay and chalk. As such, a 10m easement from buildings in chalk areas (in line with building regulations) would need to be considered.
- 6.10. Clear Environmental Ltd have carried out infiltration testing at the site. The infiltration testing (Ref 251006) is shown in Table 5 and attached in Appendix C. As can be seen below the infiltration tests appear to have failed and as such infiltration is shown to not be a viable option.

Table 5: Infiltration Test Results (Clear Environmental Ltd)

Test Location ID	Test Result	Drainage Characteristics
TP01	Fail	Water level failed to fall between the 75% and 25% effective depth over 5 hour monitoring period.
TP02	Fail	

Public Sewers

- 6.11. Based on the asset plan provided by Thames Water there are no sewer assets within this map area or vicinity or the site. This is shown in Appendix D.

Nearby Watercourses

- 6.12. Based EA LiDAR data and OS mapping there is a watercourse on the eastern boundary of the site, downhill from the proposed development. This watercourse is to be used as the outfall for the proposed surface water drainage strategy. The watercourse should be fully surveyed to confirm bed and bank levels prior to detailed design, and the strategy refined to suit surveyed levels and discharge consent sought from the Council, post planning.

Greenfield and Proposed Runoff Rate

- 6.13. The InfoDrainage (2025.5) calculations include an impermeable area of 0.072ha (representing the proposed buildings, patios and driveways).
- 6.14. The greenfield runoff rate (Q_{BAR} Rural) was calculated using HR Wallingford Greenfield Runoff Calculator Tool using the ICP SuDS methodology. For sites smaller than 50 ha, the IH124 method is applied to a 50 ha site and the results multiplied by a scale factor equal to the site

area (in hectares) divided by 50. QBAR was calculated using the following formula (equation yields m³/s):

$$QBAR_{\text{rural}} = 0.00180 \times \text{AREA}^{0.89} \times \text{SAAR}^{1.17} \times \text{SOIL}^{2.17}$$

- 6.15. The parameters used for estimating the greenfield runoff rates for the site are presented in Table 6.

Table 6: ICP SuDS Input Parameters

Greenfield runoff rates from the site – simulation criteria	
Rainfall Data	FEH 22
Area	0.072ha
SAAR	800.0
SOIL	0.100
Region	Region 8

- 6.16. Table 7 displays the estimated greenfield runoff rates for the proposed site area of 0.072ha.

Table 7: Greenfield Runoff Rates (rates lower than 0.05l/s are rounded down to 0.0l/s in InfoDrainage)

Return Period	Greenfield Runoff Rate
1 in 1 Year	0.0 l/s
Q _{BAR} (approx. 1 in 2.33 Year)	0.0l/s
1 in 30 Year	0.0 l/s
1 in 100 Year	0.0 l/s

- 6.17. The greenfield runoff rate (Q_{BAR}) for the proposed catchment area of 0.072ha was calculated to be 0.0l/s. Greenfield runoff rate calculations are included in Appendix E of this report.
- 6.18. Runoff rates from the proposed development should be restricted to greenfield rates where possible. Given the size of the development, the greenfield rate is too low to design to 0.0l/s. It is not possible to discharge runoff at such a low rate as it would require unreasonably small flow controls, which would significantly increase the risk of blockage particularly on a rural site.
- 6.19. Therefore, the proposed runoff rate has been restricted to the lowest practicable rate given site and levels constraints, via an integral flow control outlet to a flow rate of 1.2l/s for all storms up to and including the 1 in 100 year, plus climate change, storm event.

InfoDrainage Modelling and Results

InfoDrainage Modelling

- 6.20. InfoDrainage Software (v2025.5) was used to calculate the indicative attenuation volumes from the development proposals area.
- 6.21. The total proposed impermeable area being managed was calculated to be 0.072ha + 10% urban creep = 0.079ha.
- 6.22. The model comprises:
- 9no. contributing catchment areas to represent the proposed driveways, patio areas, and roof areas.
 - 2no. Type C permeable paving areas (both with a subbase depth: 0.45m, porosity: 30% and 50mm paving layer depth to be used, both with 50mm underdrains) (the plot 1 permeable paving provides 15.614m³ attenuation and the plot 2 permeable paving provides 12.001m³ attenuation. The catchments into the permeable paving have a lateral inflow. The roof catchments will have diffuser unit at the downpipes from the building.
 - 2no. Geocellular tanks (1 in each plot). Plot 1: (plan area: 48m², depth: 0.40m, total volume: 18.640m³), Plot 2: (plan area: 22m², depth: 0.80m, total volume: 17.020m³);
 - 4no. modelled manholes (2no. representing the outfall to the watercourse).

6.23. Table 8 summarises the simulation criteria for the InfoDrainage model.

Table 8: Simulation Parameters

Catchment Area Simulation Parameters	
Rainfall Data	FEH22
Total Area	0.079m ² (including 10% Urban Creep)
Return Periods	2, 30, 30+35% for climate change, 100, 100 +40% for Climate Change. Summer and Winter
Storm Durations	15, 30, 60, 120, 240, 360, 480, 960, 1440 minute
Volumetric Runoff Coefficient	1.0 (summer and winter storms)
Percentage Impervious	100%
Time of Concentration	5 minutes

6.24. The Environment Agency Peak Rainfall Climate Change Allowance guidance (updated in May 2022) was reviewed and subsequently the DEFRA Peak Rainfall Allowances Map was assessed to determine appropriate climate change allowances to inform the surface water drainage strategy. In line with this guidance, the upper end allowances for the Kennet and tributaries Management Catchment Management Catchment have been used for both the 1% and 3.3% annual exceedance probability events. An allowance of 35% has been used for the 3.3% AEP event and an allowance of 40% has been used for the 1% AEP event.

InfoDrainage Results

6.25. The full calculation outputs can be found in Appendix E of this report although the design 1 in 100 year+40% climate change results have been summarised below:

- The maximum resident volume in the plot 1 proposed permeable paving subbase is 14.879m³ for the critical storm event (480 minute winter). Maximum depth of 0.434m.
- The maximum resident volume in the plot 2 proposed permeable paving subbase is 11.383m³ for the critical storm event (240 minute summer). Maximum depth of 0.427m.
- The maximum resident volume in the plot 1 geo-cellular storage is 17.754m³ for the critical storm event (960 minute summer). Maximum depth of 0.389m.
- The maximum resident volume in the plot 1 geo-cellular storage is 16.635m³ for the critical storm event (480 minute winter). Maximum depth of 0.796m.

- No flooding from the is observed in the critical storm event based on the InfoDrainage model.

6.26. As such, these results indicate that the runoff from the proposed development could be accommodated within a drainage system of the approximate size modelled, with surface water runoff restricted to a maximum of 1.2l/s.

Maintenance

6.27. Table 9 and Table 10 presents the details regarding the maintenance requirements for the proposed SuDS included as part of the development taken from the CIRIA C753 'The SuDS Manual'. Each manufacturer will have bespoke requirements, however, the below should be used as a guide.

Table 9: Maintenance Requirements for porous paving

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturers recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required - once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation

Maintenance Schedule	Required Action	Typical Frequency
	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action	Three-monthly, 48hr after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 10: Maintenance Requirements for geocellular tank

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any area that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Occasional Maintenance	Repair/ rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/ check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Designing for Exceedance

- 6.28. Exceedance events are those greater than the design rainfall event, i.e. greater than the 100-year rainfall event plus 40% increase for climate change.
- 6.29. Periods of exceedance occur when the rate of surface water runoff exceeds the drainage system capacity. Conveyance beneath ground cannot, generally, be economically or sustainably constructed to the scale required for the most extreme rainfall events. This may result, on occasion, in the surface water runoff exceeding the capacity of the drainage network, with excess water (exceedance flow) being conveyed above ground.
- 6.30. For situations where extreme rainfall intensity exceeds inlet capacities, or for extreme storm events exceeding the design flood event considered for drainage design, the surface water

exceedance flows would flow towards the watercourse in the east of the site, in line with topography.

Water Quality

6.31. In order to protect the downstream receiving water body, a key element of SuDS is that they have the potential to improve the quality of surface water discharged from a site. In order to assess this, the “Pollution hazard indices for different land use classifications”, provided in table 26.2 of the CIRIA SuDS Manual (C753) has been reviewed. The indices use four different indicators for assessing pollution potential based on the hazard level, total suspended solids (TSS), Metals, and Hydrocarbons.

6.32. The Pollution Hazard Indices are summarised in Table 7 below (with reference to table 26.3 in the CIRIA SuDS manual). The pollution hazard indices for “residential roofs and individual property driveways” have been used.

Table 7: Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05
Individual property driveways	Low	0.5	0.4	0.4

6.33. The pollutant hazard level from the proposed development uses is low and very low, as per CIRIA guidance. However, table 8 shows the permeable paving will offer more than sufficient treatment for the driveway and residential roof catchments. Furthermore, the downpipes of the rear roof catchments should be fit with silt traps to provide mitigation prior to the runoff entering the geocellular tanks.

Table 8: Pollution Mitigation Indices

SuDS Feature	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Permeable Paving	0.7	0.6	0.7

6.34. As such, the proposed drainage strategy would offer sufficient treatment of runoff from the proposed development.

7. Foul Water Drainage Strategy

7.1. The foul water drainage hierarchy is set out in Part H of the Building Regulations¹² and has been reviewed below for the proposed development;

1. *Discharge to a Public Foul Sewer*
2. *Discharge to a Public Combined Sewer*
3. *Private Treatment System with Discharge to Ground or Watercourse*
4. *Septic Tank*

Discharge to a Public Foul Sewer

7.2. Based on the asset plan provided by Thames Water, there are no public foul sewers in vicinity of the site. This is shown in Appendix D.

Discharge to a Public Combined Sewer

7.3. Based on the asset plan provided by Thames Water, there are no public combined sewers in vicinity of the site.

Private Treatment System with Discharge to Ground or Watercourse

7.4. Based on there being no available public sewers in the vicinity of the site it is proposed to provide a private treatment system on site. Percolation tests have not been completed at the site but Clear Environmental Ltd have carried out infiltration testing at the site which can provide an indication of the likely potential for the surrounding soils to be able to manage water. The infiltration testing (Ref 251006) is shown in Table 5. The infiltration tests appear to have failed and as such percolation into the ground through a drainage field is unlikely to be a viable option.

7.5. Therefore, it is proposed that foul drainage from the dwellings is captured and conveyed via a below ground piped network and treated via a suitably designed package treatment plant prior

¹² <https://www.gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h>

to discharging into the unnamed watercourse to the east of the site. Given the standard depth of packaged treatment plant, it is anticipated that flows would need to be pumped into the watercourse - TBC post planning.

- 7.6. In accordance with British Flows and Loads documentation¹³, the developments will be attributed to a Population Equivalent (PE) of 5.
- 7.7. Tricel Novo UK6 (or equivalent) will be included as part of the final design to treat foul loadings prior to discharge to the watercourse. Appropriate consent must be obtained prior to construction.
- 7.8. An indicative foul drainage schematic is presented in Appendix C. Further details will be provided regarding the foul drainage strategy at the detailed design stage.

Septic Tank

- 7.9. Alternative methods of foul drainage are preferred.

¹³ British Flows and Loads v4

8. Conclusions

- 8.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at Land adjacent to The Old Chapel, Winterbourne Bassett, Wiltshire, SN4 9QB. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.

Flood Risk Assessment

- 8.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Fluvial/Tidal	The site is located within Flood Zone 1. Flood Zone 1 denotes a risk of flooding from fluvial and tidal sources less than 1 in 1,000 (0.1%) annual probability. It is noted that Flood Zone 2 and 3 extents are located just east of the eastern boundary of the site, associated with an unnamed watercourse. The flood zones do not impede within the site boundary and as such do not affect the proposed development footprint or proposed access. Furthermore, review of the 'flood zones plus climate change' extent and the NaFRA2 100 year plus climate change extent, also shows that the site is not affected. As such, the risk to the site from fluvial and tidal sources is considered low.
Canals, Pluvial, Reservoirs, Groundwater and Sewers	The site is considered to be at low risk from other analysed sources.

Surface Water Drainage Strategy

- 8.3. On review of the SuDS drainage hierarchy, and with reference to both national and local policy, it is proposed that the surface water runoff from the proposed development is discharged to the eastern watercourse at a restricted rate.

- 8.4. Flow rates will be restricted to 1.2l/s for the 100 year + 40% climate change event, as close as reasonably practicable to the greenfield rate without increasing the chance of blockage.
- 8.5. Following a review of the available SuDS options, and taking into account the site's constraints and opportunities, it is proposed that the surface water runoff from the proposed driveway and front facing roof catchments are drained to the permeable paving, which then connect to the rear geocellular tanks. The rear facing roofs are drained to the geocellular tanks which then outflow to the watercourse at a restricted rate; subject to Ordinary Watercourse Consent (OWC) from the LLFA, as necessary. Each plot is managed separately until the final outflow into the watercourse. The watercourse should be fully surveyed to confirm bed and bank levels prior to detailed design, and the strategy refined to suit surveyed levels.
- 8.6. The InfoDrainage model demonstrates that there would be no flooding in the network up to the design event and exceedance flood flow routes would be routed away from the proposed development toward the watercourse, in line with topography.

Foul Water Drainage Strategy

- 8.7. It is proposed that foul drainage from the dwellings is captured and conveyed via a below ground piped network and treated via a suitably designed package treatment plant prior to discharging into the unnamed watercourse to the east of the site. Given the standard depth of packaged treatment plant, it is anticipated that flows would need to be pumped into the watercourse - Detailed design of the foul water system could be secured through a suitability worded condition attached to a planning permission.

Overall

- 8.8. The FRA, SWDS and FWDS supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.
- 8.9. This FRA, SWDS and FWDS should be submitted as part of the planning application to satisfy the requirements under NPPF.