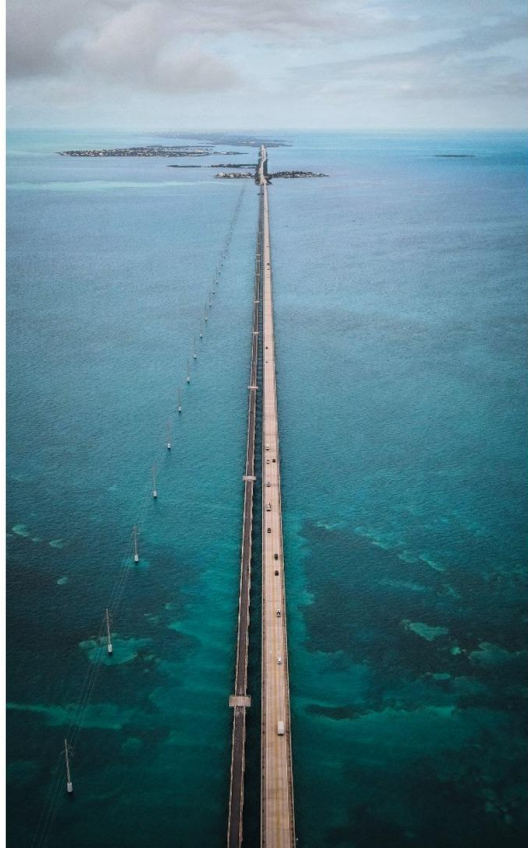




degadea
water, civils and environment

Flood Risk Assessment AEG11806_PO11_Hayling_Island_01

Site Address: Land off Gutner Lane
Hayling Island
Hampshire
PO11 0RN

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

degadea
water, civils and environment

Document Issue Record

Project: Flood Risk Assessment

Prepared for: AR Design Studio

Reference: AEG11806_PO11_Hayling_Island_01

Site Location: Land off Gutner Lane, Hayling Island, Hampshire, PO11 0RN

Issue	Date	Author	Check	Auth.	Comments
1	09/10/2026	Daniel Cunningham	MH	OH	Draft

Please Note:

This report has been prepared for the exclusive use of the commissioning party and may not be reproduced without prior written permission from Aegaea Limited. All work has been carried out within the terms of the brief using all reasonable skill, care, and diligence. No liability is accepted by Aegaea Limited for the accuracy of data or opinions provided by others in the preparation of this report, or for any use of this report other than for the purpose for which it was produced. Where reference has been made to probability events, or risk probability, it does not ensure that there is no risk or that there is no residual risk from an extreme, unlikely or unforeseen flood event over the lifetime of the development.

Contents

Summary	4
1. Introduction.....	7
Site Overview.....	7
Planning Policy and Guidance.....	9
2. Planning Policy.....	10
National Planning Policy Framework (NPPF)	10
Local Plan.....	13
Sequential and Exception Tests	14
3. Consultation and Document Review	16
Documents and Online Mapping.....	16
Preliminary Flood Risk Assessment (PFRA).....	17
Strategic Flood Risk Assessment (SFRA).....	17
Local Flood Risk Management Strategy (LFRMS).....	18
4. Sources of Flood Risk.....	19
Fluvial and Tidal	19
Canals	24
Pluvial (Surface Water)	24
Reservoirs.....	27
Groundwater.....	28
Sewers.....	29
5. Flood Risk Mitigation.....	30
Tidal	30
Increase to Flood Risk Elsewhere.....	31
Access / Egress and Flood Warnings.....	31
6. Conclusions	33
Appendix A – Development Proposals.....	34

Summary

Development Description	Existing	Proposed
Development Type	Agricultural barn	Conversion of the existing barn to a two-bedroom dwelling (Class Q prior approval); no change to the built footprint
Environment Agency (EA) Vulnerability Classification	Less Vulnerable (agriculture)	More Vulnerable (dwelling house)
Ground Floor Level	4.10 metres Above Ordnance Datum (m AOD). External ground levels around the barn of between 3.83m AOD and 4.10m AOD	No change - existing floor of 4.10m AOD retained
Level of Sleeping Accommodation	N/A	Ground floor (4.10m AOD); there is no upper floor
Surface Water Drainage	N/A	No change to built footprint or external areas therefore surface water runoff to drain as per the existing arrangement
Site Size	Approximately 2,000m ²	No change
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 1	The barn lies in Flood Zone 1; a strip along the northern boundary (2.5% of the site) lies in Flood Zone 2 (sea). The whole site lies within the Flood Zones plus Climate Change extent.

Flood Source	Tidal	Residual future tidal risk only: the site is dry in the present day 1 in 30, 1 in 200 and 1 in 1000 year tidal events; the 1 in 200 year plus climate change (Upper End) level of 4.81m AOD at 2126 is 0.71m above the floor. Low risk from all other sources.
Strategic Flood Risk Assessment (SFRA) Available	Yes	Partnership for South Hampshire SFRA Part 4 - Havant Borough Council (AECOM, 2024)
Management Measures	Summary	Comment
Ground floor level above extreme flood levels	No	Retained floor of 4.10m AOD is 0.71m below the 2126 design level; it cannot be raised in the conversion (SFRA para 7.3.5). Flood resistance and resilience measures are recommended.
Safe Access/Egress Route	No	The site is dry in the present day but the access route floods to 0.64m in the present day 1 in 200 year event and to 2.02m in the 2126 design event. Prior evacuation on receipt of a flood alert is required; there is no upper floor refuge.
Flood Resilient Design	Yes	Resistance measures to 600mm above the floor and resilient construction above, see Section 5
Site Drainage Plan	No	No change to built footprint or external areas therefore surface water runoff to drain as per the existing arrangement
Offsite Impacts	Summary	Comment
Displacement of floodwater	Negligible	No change to the built footprint
Increase in surface run-off generation	No	No change to built footprint or external areas therefore surface water runoff to drain as per the existing arrangement

Impact on hydraulic performance of channels	No	The nearest watercourse is approximately 70m from the site.
---	----	---

1. Introduction

- 1.1. Aegaea were commissioned by AR Design Studio to undertake a Flood Risk Assessment (FRA) to support a prior approval application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF, August 2026) and the associated Flood Risk and Coastal Change Planning Practice Guidance (PPG).
- 1.2. This FRA is intended to support a prior approval application under Class Q 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 off Gutner Lane, Hayling Island, Hampshire, PO11 0RN (Figure 1).



Figure 1: Site Location

- 1.4. It is understood that the proposed development comprises the conversion of the existing agricultural barn to a two-bedroom dwelling under Class Q, using the existing structure of the barn with no change to its footprint. The proposed development plans are provided in Appendix A.
- 1.5. A topographical survey of the site is shown on the AR Design Studio Existing Site Plan (drawing 1003 P002, April 2025). The survey shows ground levels across the site generally between 3.75m AOD and 4.16m AOD, falling to 3.25m AOD in the ditch along the northern boundary. External levels around the barn range from 3.83m AOD on its northern side to 4.10m AOD at its south-west corner. Gutner Lane, to the north-east of the site, is lower than the site at between 3.67m AOD and 3.84m AOD. LiDAR data shows a comparable range of approximately 3.19m AOD to 4.49m AOD across the site and has also been used to visualise the surrounding area (Figure 2). The architect drawings give the existing barn floor level, which is retained, as 4.10m AOD.

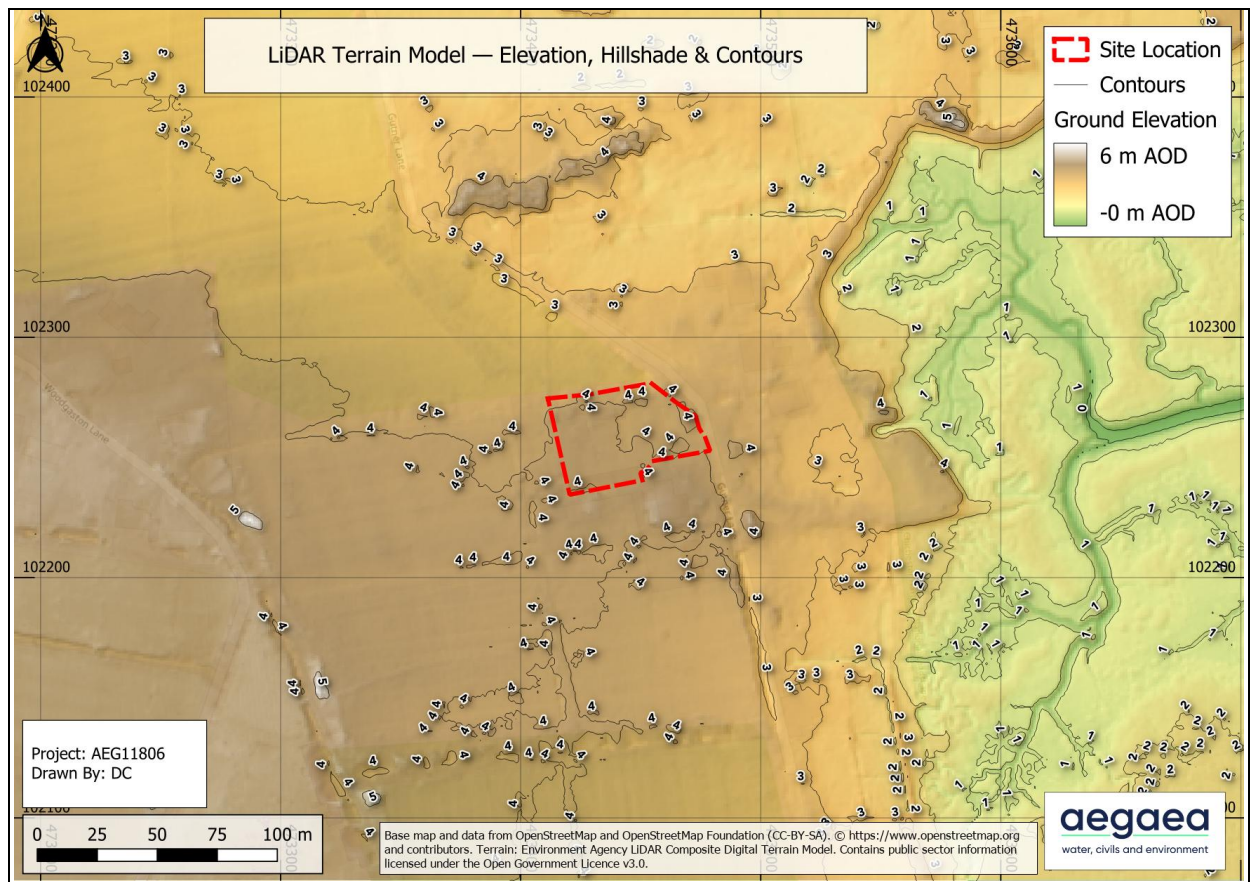


Figure 2: Site Topography (EA 1m LiDAR)

- 1.6. Havant Borough Council is the Local Planning Authority (LPA) for the site and Hampshire County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's (EA) Solent and South Downs area.

Planning Policy and Guidance

- 1.7. Policy F4 of the National Planning Policy Framework sets out when a site-specific flood risk assessment is required:

1. To inform the assessment of flood risk and, where relevant, appropriate mitigation, a site-specific flood risk assessment should accompany all development proposals in Flood Zones 2, 3a, and 3b as defined in Annex F, table 1.

2. In Flood Zone 1, a site-specific flood risk assessment should inform and accompany all development proposals involving:

a. Sites of one hectare or more;

b. Land which has been identified by the Environment Agency as having critical drainage problems; and

c. Land identified in a strategic flood risk assessment or the Flood Map for Planning as being at risk of flooding from any source, whether now or in the future.

- 1.8. A strip along the northern boundary (2.5% of the site) is located within Flood Zone 2 therefore an FRA is required in accordance with the NPPF. The barn and the remainder of the site lie in Flood Zone 1, and the whole site lies within the Flood Map for Planning Flood Zones plus Climate Change extent, which also engages Policy F4(2)(c).
- 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

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 NPPF (MHCLG, August 2026) which includes UK Government policy on development and flood risk states:
- 2.3. The objective of Chapter 18 (Managing flood risk and coastal change) is stated as:

The objective of the policies in this chapter is to minimise risks to development arising from all sources of flooding and coastal change, taking into account the impacts of climate change, by steering development away from areas of risk, ensuring that development will be safe for its lifetime without increasing flood risk elsewhere, and incorporating sustainable drainage systems where appropriate.

National decision-making policies

F4: Assessing flood risk for decision-making

- 1. To inform the assessment of flood risk and, where relevant, appropriate mitigation, a site-specific flood risk assessment should accompany all development proposals in Flood Zones 2, 3a, and 3b as defined in Annex F, table 1.*
- 2. In Flood Zone 1, a site-specific flood risk assessment should inform and accompany all development proposals involving:*
 - a. Sites of one hectare or more;*
 - b. Land which has been identified by the Environment Agency as having critical drainage problems; and*

c. Land identified in a strategic flood risk assessment or the Flood Map for Planning as being at risk of flooding from any source, whether now or in the future.

3. Site-specific flood risk assessments should be appropriate to the scale, nature, and location of development and should, where relevant, support an assessment of whether a development proposal satisfies the sequential and exception tests set out in policies F5 and F6.

F7: Ensuring development is safe from flooding

1. Development proposals should not present a risk from flooding to potential occupiers, users, or visitors, and should not increase flood risk elsewhere.

2. Where development is proposed in a location known to be at risk from any form of flooding, now or in the future, it should be refused unless:

a) Within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons which justify a different arrangement;

b) The development will be safe throughout its lifetime taking account of the vulnerability of its users;

c) Any residual risk can be safely managed, and safe access and escape routes are included where appropriate, as part of an agreed emergency plan;

d) 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; and

e) It can be demonstrated that flood risk will not be increased elsewhere.

2.4. Flood Zones in England are defined in Table 1:

Table 1: Flood Zone Definitions (NPPF Annex F, table 1)

Flood Zone	Definition
Zone 1 Low probability	Land having a less than 0.1% annual probability of river or sea flooding (all land outside Zones 2, 3a and 3b).
Zone 2 Medium probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding (land shown in light blue on the Flood Map for Planning).
Zone 3a High probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea flooding (land shown in dark blue on the Flood Map for Planning).
Zone 3b Functional floodplain	<p>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:</p> <ul style="list-style-type: none"> • 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). <p>Local planning authorities should identify in their strategic flood risk assessments areas of functional floodplain and their boundaries accordingly, in agreement with the Environment Agency (not separately distinguished from Zone 3a on the Flood Map).</p>

Note: Flood Zones 2 and 3, shown on the Environment Agency's Flood Map for Planning, only account for river and sea flooding, and do not account for the benefits of flood defences or the possible effects of climate change. Reference should therefore also be made to the Environment Agency's other data on the Flood Map for Planning, and any current strategic flood risk assessment(s), when considering potential future flood risks to developments and land uses.

- 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.

Local Plan

- 2.6. The Local Plan prepared by the LPA, Havant Borough Council, sets out the policies for development in the local area.
- 2.7. Policy CS15 'Flood and Coastal Erosion Risk' of the Havant Borough Core Strategy (2011)³ outlines the requirements for new development within the borough. It states:

Development in areas at risk of flooding now and in the future as identified on the latest Environment Agency flood risk maps and Strategic Flood Risk Assessment climate change maps will only be permitted where:

- 1. It meets the sequential and exception test (where required) in relation to PPS25.*
- 2. The site is located in a low hazard area as defined in the Strategic Flood Risk Assessment.*
- 3. A site-specific flood risk assessment demonstrates that the development will be safe, including the access, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*
- 4. The scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site.*
- 5. Appropriate flood warning and evacuation plans are in place.*
- 6. New site drainage systems are designed taking account of events which exceed the normal design standard.*

All development will be required to ensure that there is no net increase in surface water run off. Priority should be given to incorporating Sustainable Drainage Systems (SuDS) to manage surface water drainage, unless it is proven that SuDS are not appropriate. Where SuDs are provided arrangements must be put in place for their whole life management and maintenance.

³ <https://www.havant.gov.uk/sites/default/files/documents/ADOPTED%20CORE%20STRATEGY%20.pdf>

The council will work with partners to implement the Coastal Policy Zones in the North Solent Shoreline Management Plan to ensure that development avoids areas at risk from coastal erosion and coastal flooding and that areas required to offset coastal squeeze and prevent habitat fragmentation, to allow species to adapt to climate change, are identified and protected from development.

Sequential and Exception Tests

- 2.8. 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.
- 2.9. Under the NPPF all new planning applications should undergo a Sequential Test in accordance with Policy F5. This test should be implemented by local planning authorities with a view to take a risk-based approach when identifying suitable locations for development, taking into account all sources of flood risk and the current and future impacts of climate change.
- 2.10. Policy F5(2) of the NPPF states:

2. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, other than for:

a. Sites allocated in the development plan which were subject to the sequential test during plan preparation;

b. Sites where a site-specific flood risk assessment demonstrates clearly that:

- o i. 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); or*
- o ii. Where the site would be at risk of surface water flooding only, the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface*

water flood risk for the lifetime of the development without increasing flood risk elsewhere in accordance with policy F7.

c. For the following types of development:

- o i. Householder development;*
- o ii. Small non-residential extensions (with a footprint of less than 250m2); and*
- o iii. Changes of use, other than changes of use to a caravan, camping or chalet site, or to a mobile home or park home site.*

2.11. Furthermore, Policy F6(2) of the NPPF states:

The application of the exception test should be informed by a site-specific flood risk assessment. The exception test does not need to be applied:

a. To those forms of development, or in those circumstances, where the sequential test is not required, as set out in policy F5; or

b. Where development is proposed on a site allocated in the development plan to which the exception test was applied at the plan-making stage, unless there has been a significant increase in the risk of flooding to the site subsequently, or the nature of the development itself has changed significantly from that which was allocated so as to introduce a more vulnerable use (having regard to Annex F, table 2).

2.12. Given the proposed development constitutes a 'change of use' in terms of flood risk, neither the Sequential nor Exception Tests are applicable in this instance in accordance with Policy F5(2) and F6(2) of the NPPF.

3. Consultation and Document Review

- 3.1. Aegaea hold on file the Chichester District Council SFRA Coastal Model (2022) results grids, which cover the site and are considered the best available data to establish the present day and future tidal flood levels at the site.

Documents and Online Mapping

- 3.2. Local Governments and LLFA's 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.
- 3.3. The following sources of information have been reviewed for this assessment:
- Flood Map for Planning on the EA website⁴
 - EA Flood Map for Planning - Flood Zones plus Climate Change⁵
 - EA Flood Map for Planning - Surface Water (Spatial Planning Extents and Depths, May 2026)⁶
 - EA Recorded Flood Outlines⁷
 - Long Term Flood Risk Information on the EA website, including the Risk of Flooding from Reservoirs⁸
 - Canal & River Trust maintained canal mapping⁹
 - Geoindex Onshore (British Geological Survey)¹⁰

⁴ <https://flood-map-for-planning.service.gov.uk/>

⁵ <https://environment.data.gov.uk/spatialdata/flood-zones-plus-climate-change>

⁶ <https://environment.data.gov.uk/dataset/cf8d4e8f-99b6-4e5d-bf56-7f80e93d0931>

⁷ <https://www.data.gov.uk/dataset/16e32c53-35a6-4d54-a111-ca09031eaaaf/recorded-flood-outlines1>

⁸ <https://check-long-term-flood-risk.service.gov.uk/>. Environment Agency; accessed 01/10/2026.

⁹ Canal & River Trust maintained waterway mapping. <https://canalrivertrust.org.uk/canals-and-rivers>

¹⁰ <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

- Partnership for South Hampshire Strategic Flood Risk Assessment Part 4 - Havant Borough Council (AECOM, 2024)¹¹
- Preliminary Flood Risk Assessment: Hampshire County Council (Hampshire County Council, 2011 and 2017 addendum)¹²
- Hampshire Local Flood and Water Management Strategy, the Local Flood Risk Management Strategy (LFRMS) for Hampshire (Hampshire County Council)¹³

Preliminary Flood Risk Assessment (PFRA)

- 3.4. The Preliminary Flood Risk Assessment (PFRA) is Hampshire County Council's high-level assessment of local flood risk from surface water, groundwater and ordinary watercourses, prepared under the Flood Risk Regulations 2009. The 2011 report was updated by an addendum in 2017, which identifies a single Flood Risk Area in Hampshire, at Farnborough and Hawley; no Flood Risk Area covers Hayling Island. As the PFRA addresses local sources only, it does not bear on the tidal risk that governs this site.

Strategic Flood Risk Assessment (SFRA)

- 3.5. The Partnership for South Hampshire Level 1 Strategic Flood Risk Assessment Part 4 - Havant Borough Council (AECOM, 2024) was prepared to inform the Havant Local Plan and maps flood risk from all sources across the borough. It identifies the sea as the dominant source of flooding on Hayling Island, records significant coastal flooding along the north of the island, including around Northney and Langstone in February 2014, and shows that by the 2120s flooding extends further across the island as sea levels rise.
- 3.6. Section 7.3 of the SFRA recommends that development in Flood Zones 2 and 3 sets finished floor levels above the 0.5% annual exceedance probability (AEP) tidal design level with the

¹¹ <https://www.havant.gov.uk/planning-services/planning-policy/local-plan/pfsh-strategic-flood-risk-assessment-2024>

¹² https://assets.publishing.service.gov.uk/media/5acc9b7fed915d5a90e44dac/PFRA_Hampshire_County_Council_2017.pdf

¹³ <https://www.hants.gov.uk/landplanningandenvironment/environment/flooding/strategies/local-flood-risk-management-strategy>

Upper End climate change allowance for More Vulnerable development, plus freeboard, and states (paragraph 7.3.5):

In certain situations (e.g. for proposed extensions to buildings with a lower floor level or conversion of existing historical structures with limited existing ceiling levels), it could prove impractical to raise the internal ground floor levels to sufficiently meet the general requirements. In these cases, the Environment Agency and/or Havant BC should be approached to discuss options for a reduction in the minimum internal ground floor levels provided flood resistance measures are implemented up to an agreed level.

- 3.7. This provision applies directly to the retained floor of the barn, and is taken forward in Section 5.

Local Flood Risk Management Strategy (LFRMS)

- 3.8. The Hampshire Local Flood and Water Management Strategy is the LLFA's strategy under section 9 of the Flood and Water Management Act 2010, setting out objectives and measures for managing flood risk from surface water, groundwater and ordinary watercourses across the county. As the strategy addresses local sources, it identifies no measure or record that bears on the tidal risk at this site.

4. Sources of Flood Risk

- 4.1. The following sources of flood risk have been assessed in relation to the site and proposed development.

Fluvial and Tidal

- 4.2. 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. 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, where water may overtop the river bank or river defences when tide levels are high.

Main Rivers and Ordinary Watercourses

- 4.3. The nearest tidal water is the Emsworth Channel of Chichester Harbour, situated c. 70m east of the site boundary. The nearest ordinary watercourse is an unnamed stream c. 230m north of the north-western site boundary, beyond the 8m distance within which works would require consent. No further watercourses are mapped within 500m of the site on OpenStreetMap.

Environment Agency Flood Map for Planning

- 4.4. According to the EA Flood Map for Planning, the barn and the majority of the site are located in Flood Zone 1 (land having a less than 0.1% annual probability of river or sea flooding). A strip along the northern boundary, 2.5% of the site, lies in Flood Zone 2 (land having between a 0.5% and 0.1% annual probability of sea flooding), and Flood Zone 3 (land having a 0.5% or greater annual probability of sea flooding) lies c. 8m to the north (Figure 3). These zones are attributed to the sea. The whole site lies within the Flood Map for Planning Flood Zones plus Climate Change extent.

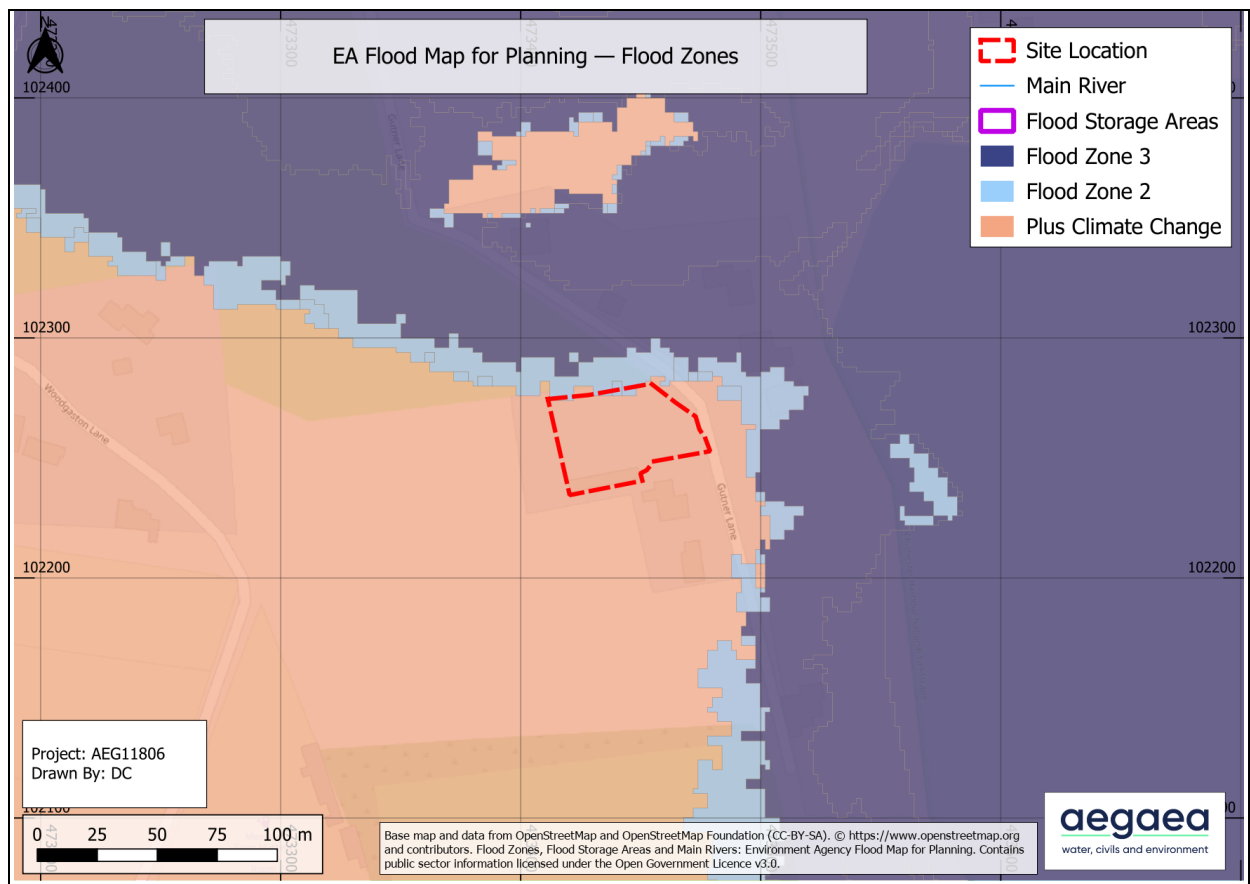


Figure 3: EA Flood Map for Planning - Flood Zones

Historical Fluvial / Tidal Flooding

- 4.5. Based on the EA Recorded and Historical Flood Outlines dataset, the site is not within a recorded flood outline. The nearest lies c. 5m north of the northern site boundary: the 10 March 2008 tidal flood at Northney (source: sea). A further outline, from the 14 December 1981 coastal flood of North Hayling, lies c. 195m north-northwest (Figure 4).

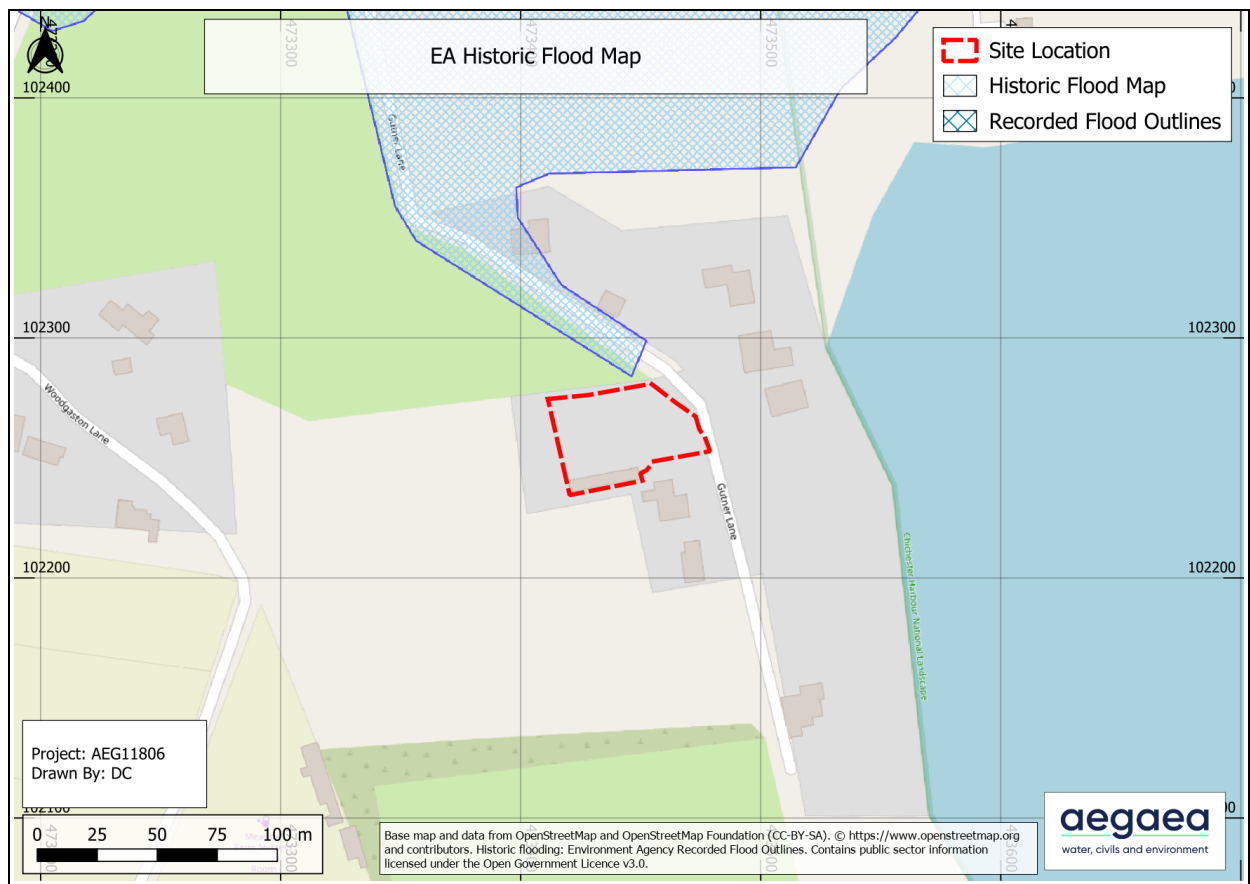


Figure 4: EA Recorded and Historic Flood Outlines

Defences

- 4.6. Based on the outputs from the Chichester District Council SFRA Coastal Modelling (2022), there is a difference between the defended and undefended scenarios at the site. As such it can be considered that the site is within an area that is benefiting from the presence of flood defences (embankments ref – 470285¹⁴).
- 4.7. The coastline east of the site is within the 'Northney Farm to Mengham 5AH103' Shoreline Management Plan Zone. The plan states that the present day, medium-term, and long-term plan for the site's area, is to hold the line.

¹⁴ <https://environment.data.gov.uk/asset-management/index.html?element=http%3A%2F%2Fenvironment.data.gov.uk%2Fasset-management%2Fid%2Fasset%2F470285&layer=all-assets>

- 4.8. Therefore, it is considered that the development benefits from flood defences and will continue to in the future.

Chichester District Council SFRA Coastal Model (2022)

- 4.9. The Chichester District Council SFRA Coastal Model (2022) provides modelled tidal water levels and depths across the site for the 3.3%, 0.5% and 0.1% AEP events, defended and undefended, with a model base year of 2022, and for the 0.5% AEP event with UKCP18 95th percentile sea level rise to 2121. The model was prepared for the Chichester District Council SFRA, covering Chichester Harbour including Hayling Island, and provides 2D results grids at a 4m cell size. The extents are shown on Figure 5 and the levels are summarised in Table 2.

Table 2: Modelled tidal levels at the site (CDC SFRA Coastal Model, 2022)

Scenario	Site (red line)	Modelled level within 60m of the site (m AOD)	Depth over barn footprint
1 in 30 year, present day (defended / undefended)	Dry	3.14	Dry
1 in 200 year, present day (defended / undefended)	Dry	3.34	Dry
1 in 1000 year, present day (defended / undefended)	Dry	3.51	Dry
1 in 200 year + UKCP18 95th percentile, 2121 (defended / undefended)	Wet, 100% of site at 4.72m AOD	4.72	0.56m to 0.69m (level 4.72m AOD)

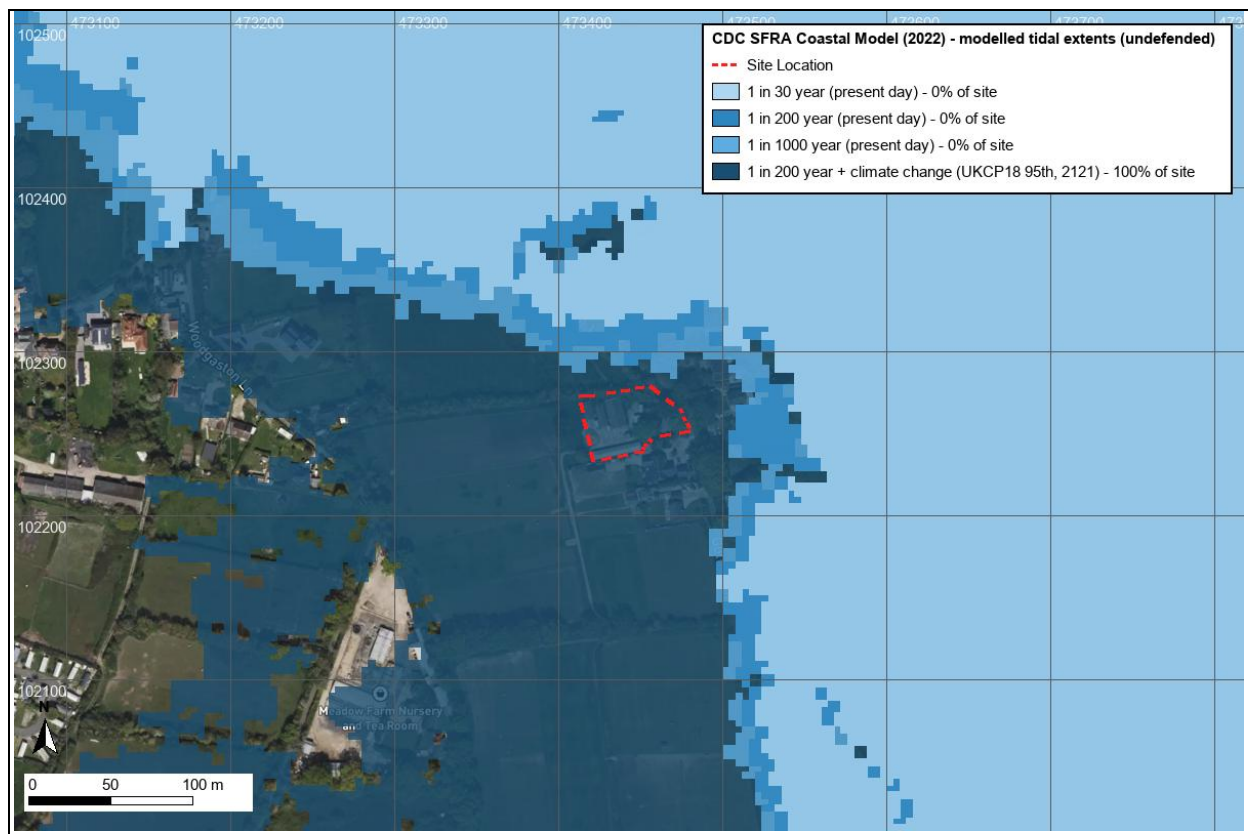


Figure 5: Modelled tidal extents, CDC SFRA Coastal Model (2022), undefended

- 4.10. To calculate epochs beyond 2100, the average incremental increase between 2096 and 2126 at the site location should be used and multiply by the required number of years after 2100. The figures presented in Flood Risk Assessments: Climate change allowances (May 2022) Table 1 up to 2126 have been calculated using this methodology.
- 4.11. The average yearly incremental increase for the South East administrative area for 2096 to 2126 is 0.0131m. Multiplying this value by 5 gives an increase in sea level rise of 0.0655m over the 2121 level.
- 4.12. As previously discussed, the site is affected by a flood level of 4.72m AOD in the defended 1 in 200 year 2121 event. Adding the additional 0.0655m of sea level rise gives a 1 in 200 year 2126 flood level of 4.79m AOD.
- 4.13. As previously stated, ground FFLs of the development are 4.10m AOD and as such is affected by a flood depth of 0.69m in the 1 in 200 year 2126 flood event.

Fluvial / Tidal Risk Summary

- 4.14. The Flood Zones at the site are attributed to the sea, no fluvial extent reaches the site, and the risk of fluvial flooding to the site is considered to be low.
- 4.15. The site is at low risk of tidal flooding in the present day, being dry in the 1 in 1000 year event (defended and undefended). The site is affected by a flood level of 4.79m AOD in the 'design' 1 in 200 year 2126 flood event resulting in flood depth of 0.69m.
- 4.16. However, it is noted that the coastline east of the site is within the 'Northney Farm to Mengham 5AH103' Shoreline Management Plan Zone which has a present day, medium-term, and long-term plan of hold the line. Therefore, defences are considered to be maintained and upgraded meaning the site should remain unaffected in the future scenarios similar to the modelled present day events.
- 4.17. Based on the modelled data, the risk is considered high and mitigation measures are recommended in Section 5, but as suggested above this could be seen as a conservative flood level.

Canals

- 4.18. 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.
- 4.19. According to the CRT mapping there are no canals within 750m of the site.
- 4.20. The risk of flooding to this site from canals is considered to be low.

Pluvial (Surface Water)

- 4.21. 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.

Environment Agency Flood Map for Planning Service – Surface Water

- 4.22. The EA Flood Map for Planning Service in relation to Surface Water was published in May 2026. The Surface Water Spatial Planning Extents and Depths have been used within this FRA to assess the surface water flood risk to the site and proposed development.
- 4.23. These datasets show the extent of land at risk of flooding from surface water to a defined AEP or chance of flooding each year, taking into account the possible effects of climate change. These datasets include the following scenarios:
- 0.1% AEP (1 in 1000); 1% AEP (1 in 100) and 3.3% AEP (1 in 30)
- 4.24. Alongside the following depth bands:
- Up to 150mm; 150 – 300mm; 300 – 600mm; 600 – 900mm; 900 – 1200mm; 1200 – 2300mm and over 2300mm.
- 4.25. Alongside the present day scenarios, climate change scenarios have been produced by the Environment Agency to indicate the predicted impacts of climate change on future flood risk. These published scenarios incorporate an uplift based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5, applying the 'Upper End' allowance for the 2070s epoch (2061 – 2125); the EA have chosen long-term epochs appropriate to support long-term planning and development decisions.
- 4.26. To provide a 'worst case' assessment, the climate change scenarios have been assessed below.
- 4.27. The site and the barn lie outside the surface water extents in the 1 in 30, 1 in 100 and 1 in 1000 year climate change scenarios (Figure 6).

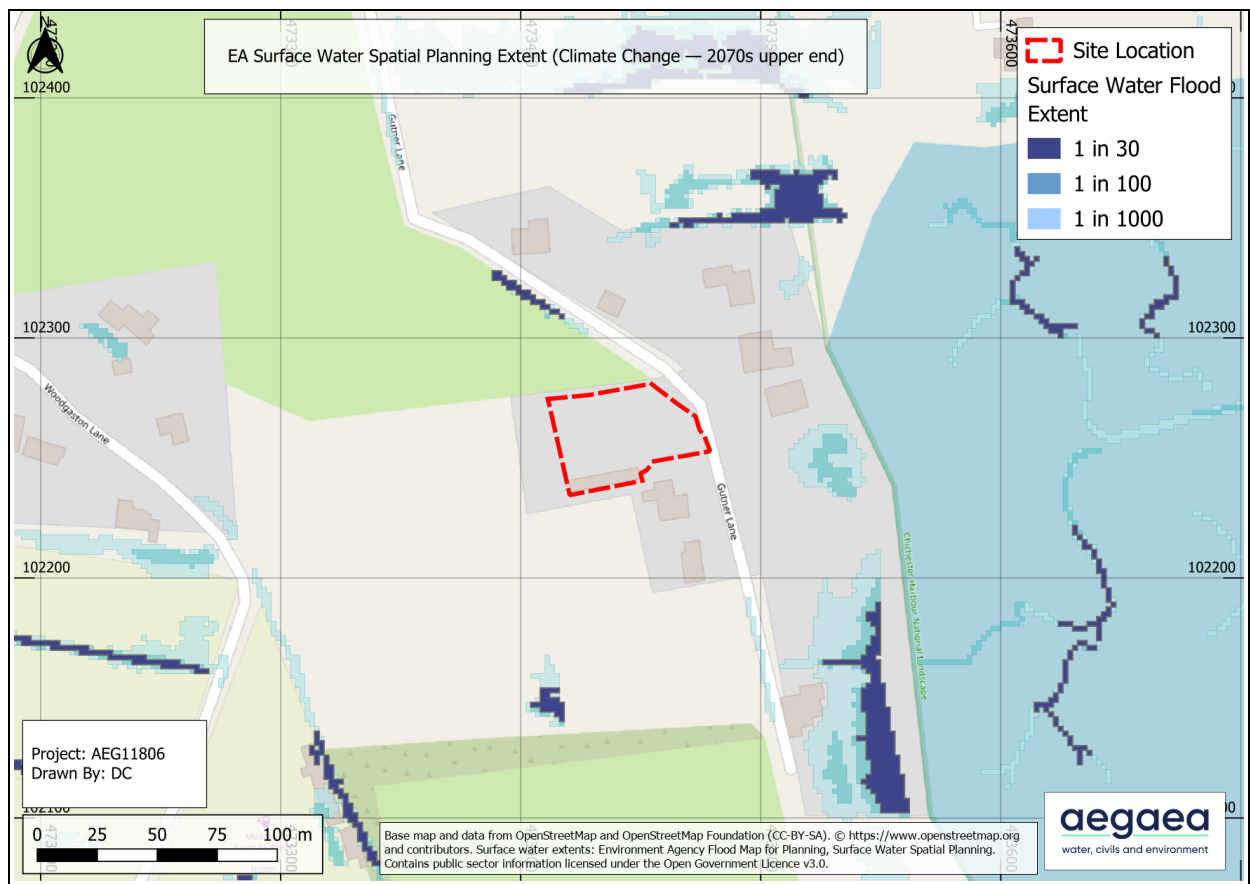


Figure 6: EA Flood Map for Planning - Surface Water Extents (Climate Change)

Climate Change Scenario

- 4.28. The 1 in 100 year plus climate change scenario is the design event. Under this scenario, no part of the site or the barn lies within the mapped depth extent (Figure 7).

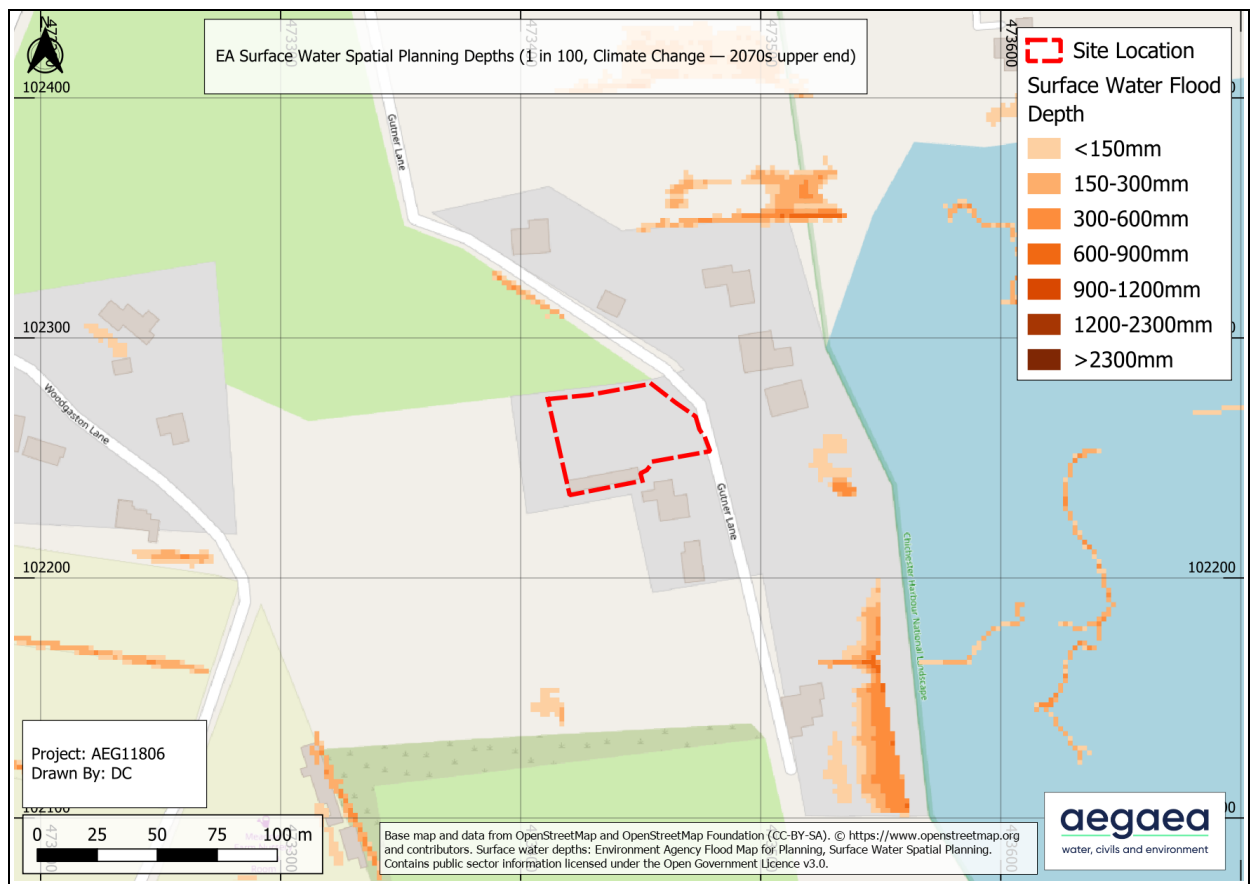


Figure 7: EA Flood Map for Planning - Surface Water Depths, 1 in 100 year plus climate change

Pluvial Risk Summary

- 4.29. Given the site lies outside all mapped surface water extents, the risk of surface water flooding to the site and proposed development is considered low.

Reservoirs

- 4.30. The EA reservoir flood risk mapping shows the site is not within either the modelled reservoir Wet Day or Dry Day inundation extent (Figure 8). As such, the risk to the site from reservoir flooding is considered to be low.

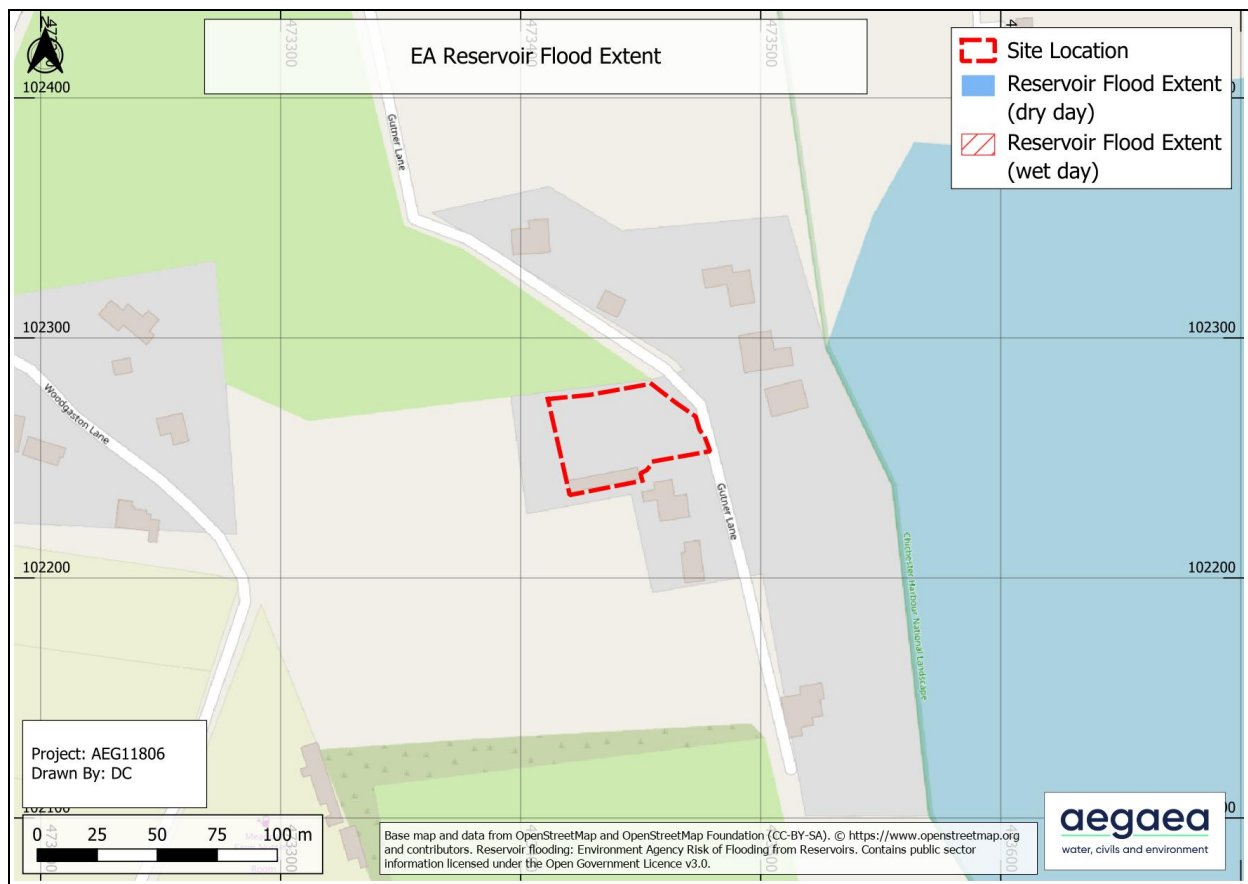


Figure 8: EA Risk of Flooding from Reservoirs

Groundwater

- 4.31. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.
- 4.32. The British Geological Survey's (BGS) mapping shows mapped superficial deposits of River Terrace Deposits (Undifferentiated), comprising sand, silt and clay, underlying the site. The bedrock geology is mapped as the Lambeth Group, comprising clay, silt and sand.
- 4.33. No BGS borehole records are held within 250m of the site.
- 4.34. The SFRA maps the north and east of Hayling Island, including the site, as having 'Limited potential for groundwater flooding to occur' (SFRA Appendix A groundwater susceptibility map, sheet 4 of 7), and records two groundwater flooding incidents in the borough, in Widley and Havant town, neither near the site.

- 4.35. Considering the information above, and given that the development proposals do not include a basement or any below ground accommodation, the risk from groundwater flooding to the development is considered to be low.

Sewers

- 4.36. 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.
- 4.37. The SFRA identifies Southern Water as the sewerage undertaker for the borough. Southern Water's records of sewer flooding reproduced in the SFRA Appendix A mapping show eight events in the south of Hayling Island, none at or near the site, which lies in an undeveloped area off Gutner Lane. Hampshire County Council's Section 19 flood investigation reports held on file include none for Hayling Island.
- 4.38. As such, the risk from sewer flooding is considered to be low.

5. Flood Risk Mitigation

- 5.1. The assessment in Section 4 identifies tidal flooding, and specifically the residual risk of the 1 in 200 year event with climate change towards the end of the development's lifetime, as the only source requiring mitigation at this site.

Tidal

- 5.2. The site is at low risk of tidal flooding in the present day, being dry in the 1 in 1000 year event (defended and undefended). The site is affected by a flood level of 4.79m AOD in the 'design' 1 in 200 year 2126 flood event resulting in flood depth of 0.69m.
- 5.3. However, it is noted that the coastline east of the site is within the 'Northney Farm to Mengham 5AH103' Shoreline Management Plan Zone which has a present day, medium-term, and long-term plan of hold the line. Therefore, defences are considered to be maintained and upgraded meaning the site should remain unaffected in the future scenarios similar to the modelled present day events.
- 5.4. Based on the modelled data, the risk is considered high and mitigation measures are recommended in Section 5, but as suggested above this could be seen as a conservative flood level.
- 5.5. Paragraph 7.3.5 of the SFRA also states:

In certain situations (e.g. for proposed extensions to buildings with a lower floor level or conversion of existing historical structures with limited existing ceiling levels), it could prove impractical to raise the internal ground floor levels to sufficiently meet the general requirements. In these cases, the Environment Agency and/or Havant BC should be approached to discuss options for a reduction in the minimum internal ground floor levels provided flood resistance measures are implemented up to an agreed level.

- 5.6. Given the development is for a change of use of existing barn, there is restrictions on existing floor to ceiling heights meaning the raising of floor levels is not possible. As such it is recommended that Finished Floor Levels are set no lower than existing and flood resistance and resilience measures are implemented.

- 5.7. Flood resistance (keeping water out) to 600mm above the floor, the upper limit is generally recommended for resistance measures on masonry and framed walls:
- Flood resistant external doors and glazed screens, or demountable flood barriers at each opening, to 600mm above the finished floor level.
 - Self-closing or removable covers to air bricks and any low-level vents.
 - Non-return valves on all foul and surface water drainage connections.
 - Sealing of service penetrations through the external walls and floor.
- 5.8. Flood resilience (limiting damage once water enters), because the design depth of 0.71m exceeds the resistance standard:
- Solid concrete ground floor with a damp proof membrane and water resistant screed and finishes.
 - Water resistant internal wall linings and lime-based or cement renders to at least 1.0m above the floor.
 - Electrical sockets, consumer unit, boiler and other services raised to at least 600mm above floor level, with circuits fed from above.
 - Kitchen units on raised legs and closed cell insulation in the walls.

Increase to Flood Risk Elsewhere

- 5.9. The proposal constitutes a change of use under the NPPF. Given that the conversion uses the existing building with no change to its footprint or to the external hard surfacing, the proposed development in isolation should have a negligible impact on flood risk elsewhere.

Access / Egress and Flood Warnings

- 5.10. The site is in the EA 'North and East Hayling at Northney, Tye and Selsmore ' Flood Warning service area. This service allows site owners to register an address along with contact details so that, in the event of a flood being forecast, they are sent an alert. As a further precaution and risk reduction, the owner of the site should sign up.
- 5.11. 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 occupants with time to take necessary action, e.g. communication of the risk of flooding to occupants etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding.

- 5.12. The EA aim to provide a minimum of 1 to 2 hours of lead time for Flood Warnings in fluvial areas and 6 hours for tidal or coastal locations. The Flood Alert stage is used to warn of the possibility of flooding. It is issued earlier than a flood warning, to give advance notice of the possibility of flooding. The EA aims to provide between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring.
- 5.13. As such, it would be expected that should the service function as intended, a Flood Alert would be issued between 2 and 12 hours before flooding, and a Warning issued up to 6 hours in advance. It is likely that a flood event would occur in combination with a high tide of storm surge – both of which are predictable and well understood mechanisms of flooding. This means that prior evacuation of the site before flooding should be achievable with adequate warning, outside of the flood zones or off Hayling Island.
- 5.14. It is anticipated that flood waters would recede as tide levels go down. Therefore, if seeking refuge outside of the flood extents, occupants would not be stranded for an extended period of time – possibly a maximum of 12 hours.

6. Conclusions

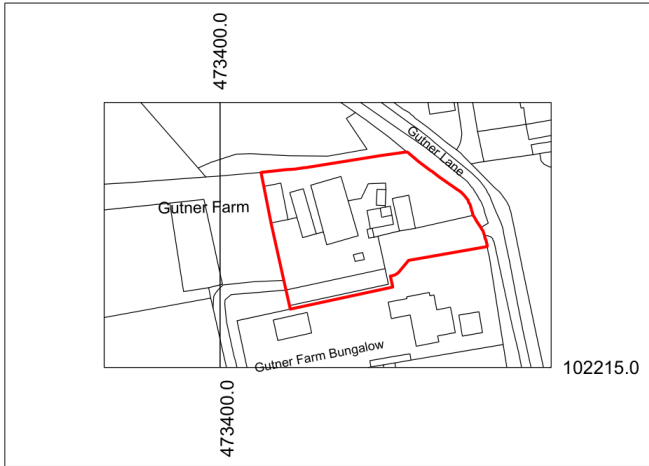
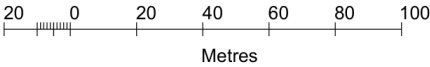
- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at Land off Gutner Lane, Hayling Island, Hampshire, PO11 0RN. It has been written to support a prior approval application under Class Q and prepared with due consideration to the nature of the proposed conversion to provide the appropriate level of detail.
- 6.2. 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
Tidal	<p>The site is at low risk of tidal flooding in the present day, being dry in the 1 in 1000 year event (defended and undefended). The site is affected by a flood level of 4.79m AOD in the 'design' 1 in 200 year 2126 flood event resulting in flood depth of 0.69m.</p> <p>However, it is noted that the coastline east of the site is within the 'Northney Farm to Mengham 5AH103' Shoreline Management Plan Zone which has a present day, medium-term, and long-term plan of hold the line. Therefore, defences are considered to be maintained and upgraded meaning the site should remain unaffected in the future scenarios similar to the modelled present day events.</p> <p>Based on the modelled data, the risk is considered high and mitigation measures are recommended in Section 5, but as suggested above this could be seen as a conservative flood level.</p>
Fluvial / Pluvial / Reservoirs / Groundwater / Sewers / Canals	The site is considered to be at low risk from other sources.

- 6.3. The FRA supports the prior approval 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.
- 6.4. This Flood Risk Assessment should be submitted as part of the prior approval application to satisfy the requirements under NPPF.

Appendix A – Development Proposals

Stanfords Planning Map Data



Production Date: 28 August 2025
Top Left: 473365 102295 Bottom Right: 473500 102215
© Crown copyright and database rights 2025 Ordnance Survey AC0000824000.
Reproduction in whole or in part is prohibited without the permission of Ordnance Survey

AR DESIGN STUDIO LTD
CALPE HOUSE
LITTLE MINSTER ST
WINCHESTER
SO23 9HB

AR

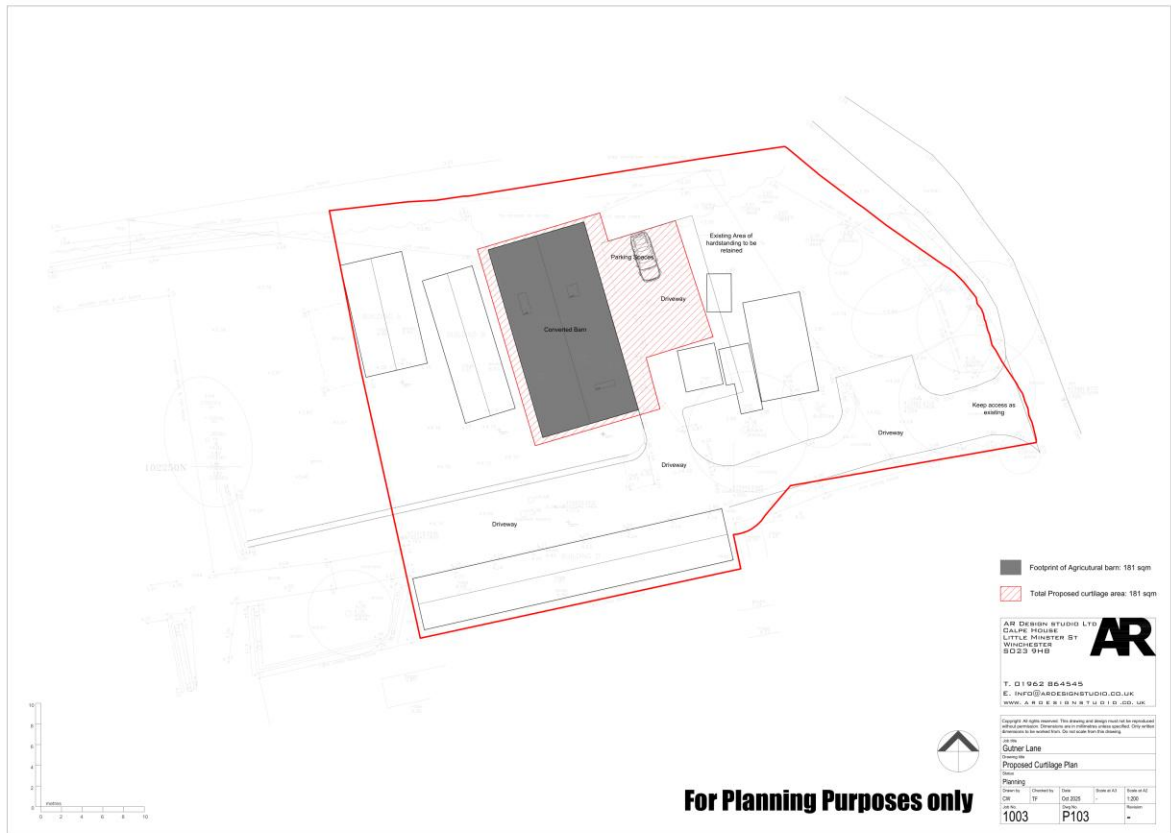
T. 01962 864545
E. INFO@ARDESIGNSTUDIO.CO.UK
WWW.ARDESIGNSTUDIO.CO.UK

Copyright: All rights reserved. This drawing and design must not be reproduced without permission. Dimensions are in millimetres unless specified. Only written dimensions to be worked from. Do not scale from this drawing.

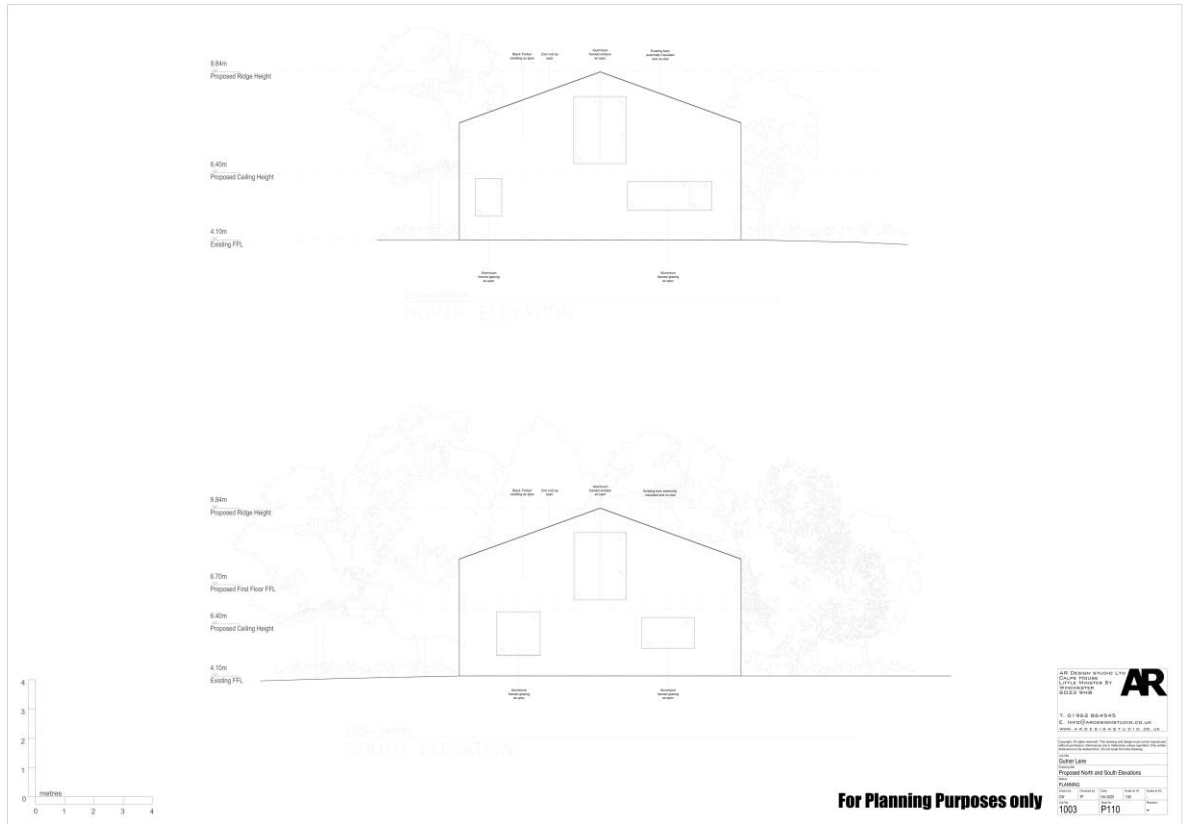
Job title				
Gutner Lane				
Drawing title				
Location Plan				
Status				
Planning				
Drawn by	Checked by	Date	Scale at A3	Scale at A2
OS	-	Aug 2025	1:1250	-
Job No.	Dwg No.	Revision		
1003	P001	-		

For Planning Purposes only

6.6.







6.8.

