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Hayling Fair Development

Hayling Fair Development , Portsmouth, PO11 0AG

Flood Risk Assessment & Drainage Statement

**REPORT REF.
2504860-ACE-XX-XX-RP-C-0301**

September 2025

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REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	DRAFT	JS	GA/CC	DRAFT	24-09-2025
-	FINAL	JS 	GA  CC 		25-09-2025

Distribution

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1. Introduction

Overview

- 1.1. Ardent Consulting Engineers (hereafter referred to as 'Ardent'), has been appointed by Fair Development to prepare a Flood Risk Assessment (FRA) and Drainage Statement to support a planning application for a proposed development at the land at Hayling Island, PO11 0AG.
- 1.2. This Flood Risk Assessment has been prepared with specific reference to the requirements of the National Planning Framework (NPPF – December 2024, as amended February 2025) and the Planning Practice Guidance (March 2014 – flood risk section updated in August 2022). The report demonstrates that the site can be suitably developed whilst complying with the requirements of the NPPF in terms of Flood Risk.

Existing Site

- 1.3. The Site is approximately 1.17ha and is located at Ordnance Survey grid reference 471469, 098803 on Hayling Island coastline, south of Sea Front in South Hayling. Refer to Figure 1-1 below for a site Location Plan. The existing site is currently occupied by an Amusement Park with a car park further to the south.



Figure 1-1: Site Location Plan

Development Proposals

- 1.4. The scheme proposals comprise of five blocks that contain 55 residential units with a mix of two-bedroom and three-bedroom units. The development is classified as having a 'More Vulnerable' classification within the NPPF. The proposed development layout plans are provided in **Appendix A**.
- 1.5. The lower ground floor (lobby level) is at a level of 5.150m AOD. The upper ground floor (residential units) is at a level of 6.870m AOD.

2. Policy Context

National Planning Policy Framework

- 2.1. The National Planning Policy Framework (NPPF) was introduced on 27 March 2012. This document was revised most recently in December 2024 (with further minor amendments in February 2025); where paragraphs 170 to 182 inclusive establish the Planning Policy relating to flood risk management. The Technical Guide to the NPPF was superseded by the Planning Practice Guidance (PPG) in March 2014.
- 2.2. It states all plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change –to avoid where possible, flood risk to people and property. They should do this and manage residual risk, by:
- a) applying the sequential test, and if necessary, the exception test as set out below;
 - b) safeguarding land from development that is required for current and future flood management;
 - c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and
 - d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development including housing, to more sustainable locations.
- 2.3. The Planning Practice Guidance (PPG) provides the methodology required to undertake the Sequential and Exception Tests.

Flood and Water Management Act (2010)

- 2.4. The Flood and Water Management Act places a duty on all flood risk management authorities to co-operate with each other. The act also provides lead local flood authorities and the Environment Agency with a power to request information required in connection with their flood risk management functions.
- 2.5. The Lead Local Flood Authority (LLFA) for the proposed development is Hampshire County Council.

National Standards for Sustainable Drainage Systems (June 2025)

- 2.6. The National Standards for Sustainable Drainage Systems (SuDS) was published in June 2025, and are intended for application in the design of surface water drainage systems for new infrastructure and development, whether on greenfield or brownfield sites.

Hampshire County Council Local Flood and Water Management Strategy (2019)

- 2.7. As part of its duties as the designated LLFA under the Flood and Water Management Act 2010, Hampshire County Council is required to develop, maintain, implement, and monitor a Local Flood Risk Management Strategy (LFRMS).
- 2.8. The Local Strategy is a document which sets out how Hampshire County Council is responding to identified local flood risk with the key policies focusing on primarily effective partnerships and communication, both internally and with developers and the residents, alongside strong record keeping and investigation of flood events to be better prepared to identify risks in the future.

Partnership for South Hampshire Level 1 Strategic Flood Risk Assessment (2024)

- 2.9. The purpose of the SFRA is to assess and map all forms of flood risk from groundwater, surface water, impounded water bodies, sewer, river and tidal sources, taking into account future climate change.

2.10. It also provides recommendations on the management of flood risk and the application of a sequential approach in determining site selection so that development is, as far as reasonably possible, located where the risk of flooding from all sources is lowest, taking account of climate change and the vulnerability of future users to flood risk. In plan-making this involves applying the Sequential Test, and where necessary the Exception Test to Local Plans.

2.11. The Sequential Test must be applied for all major and non-major developments in areas at risk of flooding and, as such, applies to the development site.

2.12. The SFRA goes on to state that a site-specific FRA is required in the following circumstances:

- Proposals for new development (including minor development and change of use) in Flood Zones 2 and 3.
- Proposals in Flood Zone 1 with a site area of 1 hectare or more.
- Proposals for new development (including minor development and change of use) in an area within Flood Zone 1 which has critical drainage problems (as notified to the LPA by the Environment Agency).
- Proposals in an area within Flood Zone 1, which was identified in a SFRA as being at increased flood risk in future.
- Where proposed development or a change of use increases the vulnerability classification and where the SFRA shows it is at risk from other sources of flooding.

2.13. The site-specific FRAs should be proportionate to the degree of flood risk (inclusive of residual risk), the scale and nature of the development, its vulnerability classification, and the status of the site in relation to the Sequential and Exception Tests.

Havant Borough Council Core Strategy (2011)

2.14. The Havant Borough Core Strategy is the principle document setting out the broad detail and direction of development in the borough up to 2026.

2.15. Policy CS15 relates to managing flood risk and coastal erosion risk in new developments. It states development in areas at risk of flooding now and in the future will only be permitted where the development is sequentially approached and gives significant consideration to the flood risk and mitigation as well as the safety of the occupants. The management of surface water runoff also needs to be adequately assessed.

Havant Borough Council Local Plan (Allocations) (2014)

2.16. The Havant Borough Local Plan (Allocations) is a continuation of the Havant Borough Local Plan (Core Strategy) that aims to outline the Borough's vision for growth and prosperity until 2026, as detailed in the Havant Borough Local Plan (Core Strategy).

2.17. Chapter 6 sets out the allocations and designations for Hayling Island. The intention of the Council to build on the Hayling Seafront Masterplan and do further master planning that focuses on the regeneration of Beachlands (HY45).

2.18. The development site is described as: '*Prominent site on the seafront at Hayling Island comprising a funfair, amusement centre, tourist information office and car parks*' with specific development requirements with the key points with regard to flood risk being:

- Flood Risk Assessment to support planning application.
- Avoid residential provision at ground floor level to minimise flood risk.
- Investigate ground quality conditions, as part of a planning application, and address any matters arising as relevant.
- Connection to the sewerage system at the nearest point of adequate capacity.
- Appropriate easement from existing sewage/waste infrastructure.

- A 15-metre gap is required between the pumping station and sensitive development, such as residential to avoid significant impacts from noise, odour and vibration.
- Need to consider a wider range of flood risk management measures and the possibility of land/road raising.

Hayling Island Coastal Management Strategy (2022)

2.19. The primary aim of the Hayling Coastal Management Strategy is to develop Strategic Coastal management options for Hayling Island for next 100 years to ensure adequate management of the coastal flooding and erosion with priorities to reduce the threat of coastal flooding and erosion to people and their property and benefit the environment, society and the economy as far as possible, in line with the Government's 'sustainable development principles'.

Climate Change Allowances

2.20. Climate change allowances for rainfall intensity, in the Planning Practice Guidance, were updated in May 2022. Climate change allowances are now broken down into management catchments. To allow for the predicted impacts of climate change on surface water runoff within East Hampshire Management Catchment the peak rainfall allowance increases, detailed in Table 2-1 below, should be allowed for. For residential developments the minimum lifetime is 100 years and the upper end allowances should be used.

3.3% (1 in 30-year) Annual Exceedance Rainfall Event (%)		
Epoch	Central Allowance	Upper End Allowance
2050s	20%	35%
2070s	25%	40%
1% (1 in 100-year) Annual Exceedance Rainfall Event (%)		
Epoch	Central Allowance	Upper End Allowance
2050s	20%	40%
2070s	25%	45%

Table 2-1: East Hampshire Management Catchment Peak Rainfall Allowances

2.21. Therefore, under the NPPF an allowance of 45% for the effects of climate change for the 1% annual exceedance rainfall event would achieve the policy requirements in designing the drainage elements the proposed residential redevelopment (the design event).

2.22. The Planning Practice Guidance states that to allow for the predicted impacts of climate change on sea level rise within the East Solent area, the increases presented in Table 2-2 should be allowed for.

Area of England	Allowance	2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	Cumulative rise 2000 to 2125 (meters)
South East	Higher Central	5.7 (200)	8.7 (261)	11.6 (348)	13.1 (393)	1.20
South East	Upper End	6.9 (242)	11.3 (339)	15.8 (474)	18.2 (546)	1.60

Table 2-2: Sea level allowances by river basin district for each epoch in mm for each year (based on 1981 to 2000 baseline) – the total sea level rise for each epoch is in brackets

2.23. According to the SFRA (2024), the East Solent Study that includes three inundation models for Hayling Island, Portsea Island, and Gosport to Warsash has been updated to reflect most recent sea level rise.

3. Sequential Test

- 3.1. The site is situated in Flood Zone 3 according to the Environment Agency flood mapping. Therefore, the sequential test would need to be undertaken. However, the site was allocated in the 2014 Havant Borough Local Plan as Beachlands (HYY2/HY45) for potential development in housing, leisure and tourism. The Sequential Test at that time was completed as part of the allocation process and therefore does not need to be undertaken again. The allocation is confirmed within the Strategic Flood Risk Assessment (Local Plan Sites) in November 2018 to inform the Local Plan update. It is recommended that the allocation status of the site is confirmed with the Local Planning Authority.

4. Existing Site Conditions

Topographical Survey

- 4.1. A detailed topographical survey was undertaken by SurveyCloud Ltd in September 2025. The site is noted as being relatively flat with the levels for the majority of the site ranging between approx. 5.30m and approx. 4.5m AOD.
- 4.2. However, the lowest area of site is the southern most area (approx. 20m length) from where the beach surface falls and meets the English Channel, and the levels here fall from approx. 5.20m AOD to 3.0m AOD.
- 4.3. The full topographic survey has been provided in **Appendix B** of this report for further reference.

Hydrology

- 4.4. Whilst there are no inland watercourses within the vicinity of the site, the English Channel and associated beach does form a border to the south of the site. The Solent estuary into the English Channel is located circa 12km to the west of the site whilst a series of lakes and channels surround the site up to 2km from boundary which form the border of the island.

Sewerage Undertaker Asset Plans

- 4.5. The public sewer asset record plan for the local area has been obtained from the Sewerage Undertaker for the region, Southern Water, which illustrates that there are no strategic surface water public sewers which traverse the site.
- 4.6. A 150mm diameter foul water sewer runs to the west of the site at an approximate depth of 1.7m below ground level (to the invert). A copy of the public sewer asset record plans has been provided within **Appendix C**.

Geology

- 4.7. At the time of writing, no intrusive site investigation works have been undertaken. However, a desktop review of the British Geological Survey (BGS) record plans for the area indicate the site is underlain by superficial Storm Beach Deposits (gravels) which form the stone beach to the south of the site. This is further underlain by a bedrock of Wittering Formation (sand, silt and clay), as illustrated in Figure 4-1 and Figure 4-2, respectively.

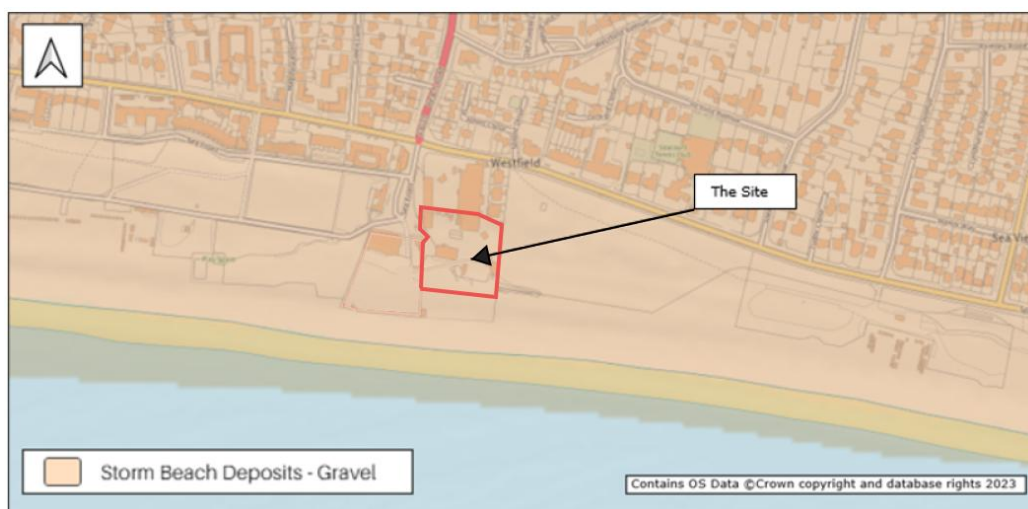


Figure 4-1: Extract of BGS's Superficial Geology (Source: BGS)

- 4.8. Nearby historic boreholes to the west of the site, but located on the same geological extent, identified groundwater at depths of 1.5m to 2.5m below ground level.



Figure 4-2: Extract of BGS's Bedrock Geology (Source: BGS)

5. Sources of Flooding

5.1. The NPPF requires flood risk from the following sources to be assessed, each of which are assessed separately below:

- Tidal sources (flooding from the sea).
- Fluvial sources (river flooding).
- Pluvial sources (flooding resulting from overland flows).
- Groundwater sources.
- Sewer Flooding.
- Artificial sources, canals, reservoirs etc.
- It also requires the risk from increases in surface water discharge to be assessed (surface water management).

Flood Zone Designation

5.2. Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. The NPPF Planning Practice Guidance defines Flood Zones as follows:

- **Flood Zone 1: Low Probability.** Land having a less than 1 in 1,000 annual probability of river or sea flooding.
- **Flood 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.
- **Flood 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.
- **Flood 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).

Fluvial / Tidal Flooding

5.3. According to the EA Flood Map for Planning (Figure 5-1) the majority of the site is located in land designated as Flood Zone 3 (high probability of fluvial flooding). The eastern part of the site is shown to be in Flood Zone 1 (low probability of flooding). Parts of the north west and north east of site are shown to be in Flood Zone 2 (medium probability of flooding).

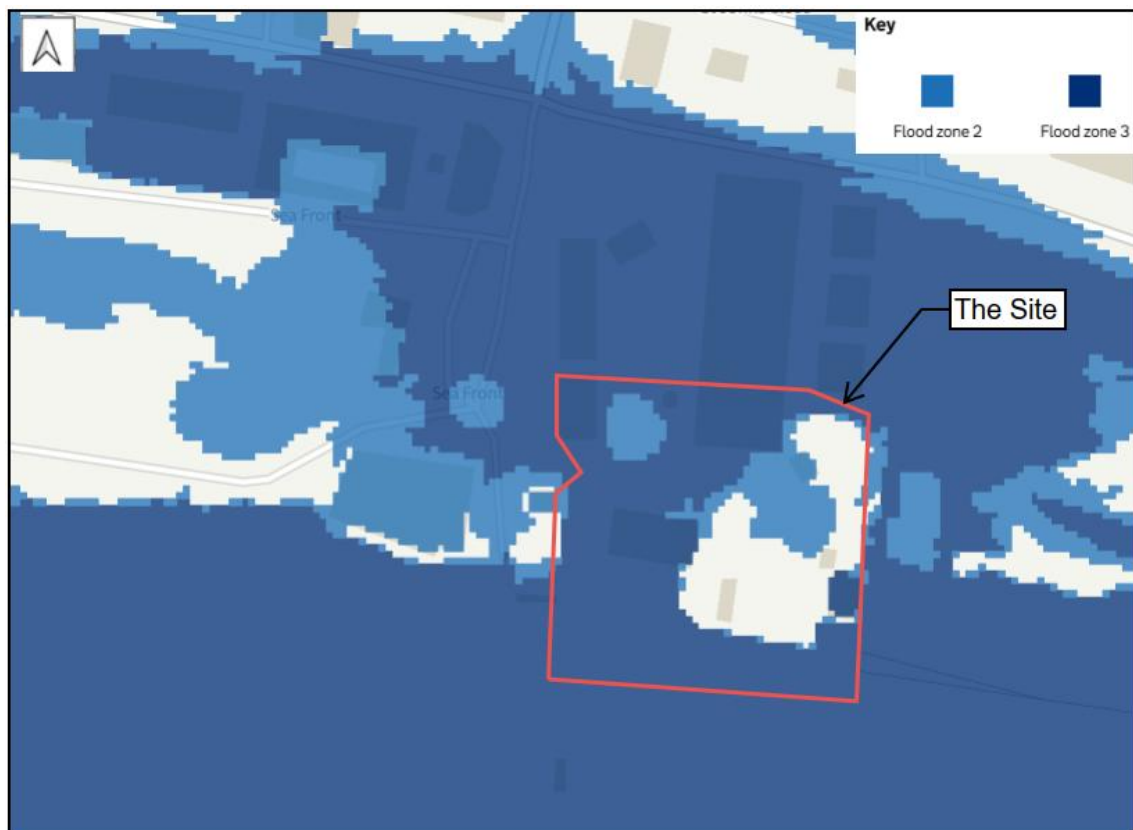


Figure 5-1: EA Flood Map for Planning (Rivers and Sea)

Hydraulic Modelling

- 5.4. The East Solent Flood Inundation Model for Hayling Island, Portsea Island, Gosport to Warsash was re-simulated for Partnership for South Hampshire Strategic Flood Risk Assessment (2024) (Portsmouth City Council).
- 5.5. The SFRA model is based on the existing 2D hydrodynamic tidal models from the East Solent Study which was completed in 2015 – 2018 with the results of this model being provided.
- 5.6. The 2018 hydraulic model was simulated for a range of scenarios (with defences and without defences) and a range of events to understand the present day and future flood risk from tidal sources. This was used to update the Flood Map for Planning Flood Zones and enable the mapping of 'areas benefitting from defences' (ABDs) at that time.
- 5.7. For each flood model, the following events were simulated:
- 10%, 4%, 3.33%, 1.33%, 1%, 0.5%, 0.2% and 0.1% Annual Exceedance Probability (AEP) events for the Present Day (2015).
 - 0.5% and 0.1% AEP events using UKCP09 climate change guidance medium emissions scenario and projected to the years 2031, 2065 and 2115.
- 5.8. The 2018 study indicates levels for the 0.5% climate change event 2115 epoch the level on the site is 5.13m AOD and for the 0.1% climate change event epoch 2115 is 5.22m AOD. The defence level at this location is 5.00m AOD.

Sea Level Allowances

- 5.9. The Planning Practice Guidance states that to allow for the predicted impacts of climate change on sea level rise, the increases presented in Table 2-2 should be allowed for. Considering the lifespan and proposed uses of the development, the 'Upper End' 2125 epoch should be used, as highlighted below:

Table 2-2: Sea level allowances by river basin district for each epoch in mm for each year (based on 1981 to 2000 baseline) – the total sea level rise for each epoch is in brackets

Area of England	Allowance	2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	Cumulative rise 2000 to 2125 (meters)
South East	Higher Central	5.7 (200)	8.7 (261)	11.6 (348)	13.1 (393)	1.20
South East	Upper End	6.9 (242)	11.3 (339)	15.8 (474)	18.2 (546)	1.60

Predicted flood levels and depths

- 5.10. Product 4 data was requested from the EA and is included in **Appendix K**. The data shows the highest tidal modelled flood level at the Site is 4.97m AOD for the 0.5% AEP.
- 5.11. In accordance with the latest UKCP18 climate change guidance for the South East region, the design flood level has been updated to reflect the full cumulative sea level rise allowance for the period 2000 to 2125. For more vulnerable development, the 'Upper End' climate change scenario has been used, by applying a cumulative rise of 1.6m. When added to the present day modelled flood level of 4.97m AOD, this gives a climate change flood level of **6.57m AOD**.

Existing Defences

- 5.12. According to the EA's data (**Appendix K**), flood defences are present along the beach, immediately to the south of the Site. These consist of an embankment (asset ID 470240) with an effective crest level of 5.0m AOD. Refer to Figure 5-2 and 5-3 below.



Figure 5-2 Location of Defences (Refer to Appendix K for complete EA Product 4 Data)

Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	470211	Beach					4.50
2	470240	Embankment					5.0
3	470243	Embankment					5.50

Figure 5-3 Flood Defence Data (Refer to Appendix K for complete EA Product 4 Data)

5.13. The current defences offer a level of protection up to 5.0mAOD, offering a 50% AEP standard of protection. However, the crest level is below the predicted flood level when accounting for climate change. The below flood mitigation measures will therefore be required.

Pluvial Flooding

5.14. The risk of flooding from surface water is presented in the GOV.UK online map at a strategic scale. It can be seen from the surface water flood map in Figure 5-4 that the site is shown to have a very low to low risk of flooding for the majority of the site. However, there is a small portion with the northern part of the site which contains high surface water flood risk.

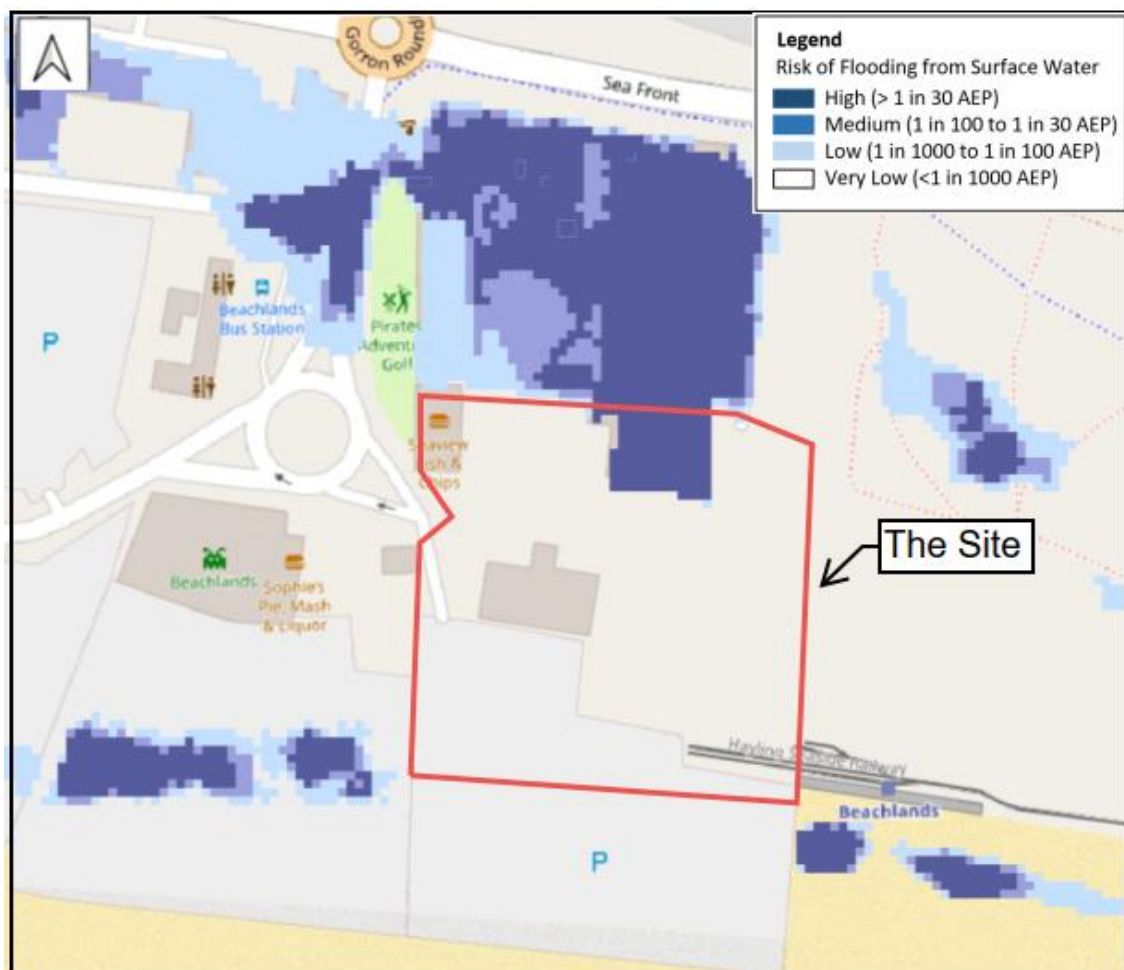


Figure 5-4: Environment Agency Flood Map for Surface Water

5.15. The series of roads called Sea Front contain road gullies to drain any surface water runoff. The proposed surface water drainage within the proposed development site will drain any surface water within the site hence mitigating the risk of surface water flooding. Therefore, the risk of surface water flooding is considered low.

Groundwater Flooding

5.16. The site is underlain by Wittering Formation – Sand, silt and clay. This is overlain by superficial Storm Beach Deposits – Gravel. According to SFRA 2024, the site is located within medium area susceptible to groundwater flooding; see Figure 5-5.



Figure 5-5: Geological Permeability Map (Source; SFRA)

5.17. According to the records held on the British Geological Survey website, a borehole (BGS Reference SZ79NW59) is located approximately 175m north from the site. The borehole was drilled to a depth of 3.91m (1.13mbgl). Groundwater was encountered at a depth of 4.59m (0.5m bgl). However, boreholes to the west of the site within similar strata identified groundwater at a depth of 1.5m – 2.5m bgl.

Sewer Flooding

5.18. There are no surface water sewers located in the vicinity of the site whilst the risk of flooding from foul water sewers is considered 'very low'. The overall risk of sewer flooding is therefore considered 'very low'.

Artificial Sources

5.19. There are no canals or reservoirs within the vicinity of the site and the Environment Agency mapping shows that there is no flood risk from these sources at the development site.

Summary of Flood Risk

5.20. A summary of the assessed risk of flooding from all sources is shown in Table 5-1 below.

<i>Source</i>	<i>Level of Flood Risk</i>
Tidal/Fluvial	High
Pluvial	Low
Groundwater	Low
Sewer	Very Low
Artificial Sources	Negligible

Table 5-1: Summary of Flood Risk

6. Flood Risk Management

Finished Floor Levels and Safe Haven

- 6.1. The climate change flood level has been calculated at 6.57m AOD (which is the 1 in 200 year tidal event plus allowance for increase in levels up to the year 2125). Upper ground floor residential units will be located 300mm above the design flood level at a minimum finished floor level of 6.87m AOD.

Safe access and egress

- 6.2. The 1 in 200 year tidal hazard mapping for tidal flooding up to the 2065 shows there is dry access as shown in Figure 6-1 below:



Figure 6-1: 1 in 200 Year Tidal Hazard Mapping up to 2065

- 6.3. The 1 in 200 year tidal hazard mapping for tidal flooding up to the 2115 shows there

is not dry access as shown in Figure 6-2 below. However, the route to the site only contains 'danger for some' indicating that emergency vehicles could enter the site. Therefore, safe refuge is recommended in this case, with access for lower ground floor lobby occupiers being via the internal residential stair cores, allowing them to access safe refuge in the event of flooding.

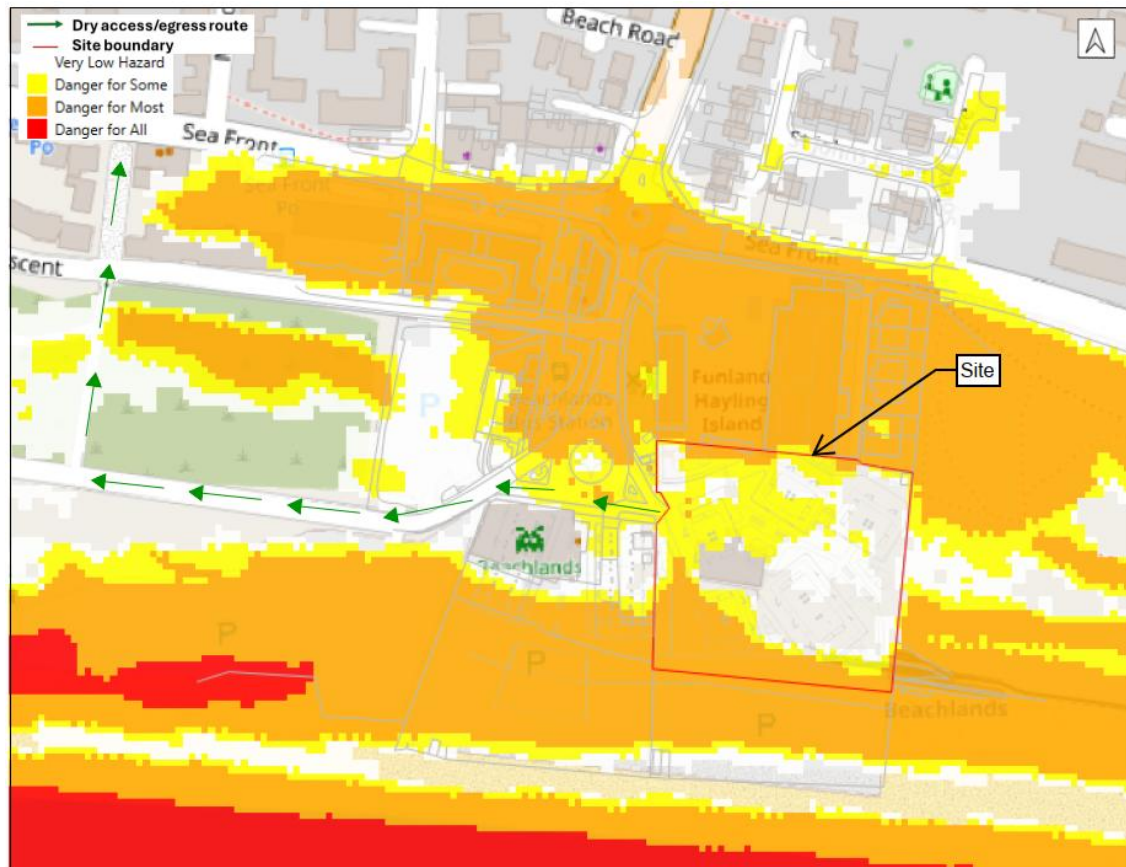


Figure 6-2: 1 in 200 Year Tidal Hazard Mapping up to 2115

- 6.4. A Flood Response Plan has been produced and is included in **Appendix L**.
- 6.5. Residents should be registered with the Environment Agency's Flood Warning and Alert Service, providing advance notice of any flood risk and allowing time, for evacuation safely if instructed.
- 6.6. In the event of a flood, safe refuge will be available at all times within the upper floors of the development, which are located significantly above the design flood level. If instructed to evacuate by the emergency services, site users will be able to exit towards the west along an unnamed public road, then turn north onto Sea Front

Road.

Flood Resilience Measures

6.7. The buildings will incorporate flood resistance and/or resilience construction to a minimum level of 7.17m AOD (corresponding to the design flood level plus 600mm freeboard) to minimise the potential damage that could be caused by flooding, including:

- Use materials with good drying and cleaning properties;
- Design for water to drain away after flooding;
- Design access to all spaces to permit drying and cleaning;
- Raise the level of electrical wiring, appliances, utility metres, electrical, service and ventilation entry points as high as reasonably practicable;
- Coat walls with internal cement-based renders; apply tanking on the inside of all internal walls;
- Ground supported floors with concrete slabs coated with impermeable membrane;
- Use water resistant internal doors;
- Using materials and construction with low permeability;
- Raising thresholds; and
- Flood doors with waterproof seals.

Coastal Erosion

6.8. As mentioned above, the Site benefits from flood defences immediately to the south, which consist of an embankment with a crest level of 5m AOD.

6.9. The Site is located within Option Development Unit 9 of the Hayling Island Coastal Management Strategy (January 2025). In this area, the beach serves as the primary defence against coastal erosion and is maintained by Havant Borough Council.

6.10. The Shoreline Management Plan Policy for the area is 'Hold the Line for the next 100 years'. The strategy involves maintain a healthy beach through ongoing beach management, including the installation of new rock groynes.

6.11. An adaptive management plan is in place for this ODU, ensuring that, if necessary, additional defences will be constructed at the back of the beach in response to sea level rise.

6.12. Based on the above, the proposed development will remain protected from coastal erosion throughout its lifetime.

Proposed Flood Wall

6.13. A proposed flood wall is proposed around the majority of the perimeter of the site, to provide a secondary form of flood protection. Refer to **Appendix A** for site proposals.

6.14. The site is surrounded by a flood wall with a top height of 6.35m above AOD, whilst the wall has openings along the southern wall these will be fitted with self-closing flood barriers, provided by Lakeside Flood Solutions or similar approved. The self-closing system resides below the ground in a steel or concrete basin. It automatically rises with incoming water, creating an effective barrier. As the water level lowers again, the system works in reverse and lowers back to the ground.

6.15. To note the western opening for vehicular access will remain open at all times and not contain any self-closing flood barriers.

Surface Water Exceedance Flow Routes

6.16. As the site is generally flat (and predominantly surrounded by the flood wall), exceedance flows would permeate (from the permeable roads/resin paths) into the beach sands below and then into the sea. When there is high tide, there will be localised surface water ponding away from the proposed buildings, and then the exceedance surface water runoff would permeate into the ground as the tide lowers. The likelihood of a high tide and an exceedance rainfall event (beyond the 1 in 100yr + CC event) happening at the same time is unlikely.

7. Surface Water Management

Existing Surface Water Drainage

- 7.1. The existing site is currently occupied by the Funland Amusement Parks with a car park further south to the beach. The topographical survey indicates there is no existing surface water drainage system. It is assumed, given that there are no public sewers, and the site is located adjacent to the English Channel and beach, that the site currently drains via infiltration or overland flow.

Existing Discharge Rates

- 7.2. The overall site area is approximately 1.17ha, with 0.64ha being impermeable and 0.53ha being permeable.
- 7.3. The existing runoff rates from the developable area were determined using the Wallingford Procedure Rational Method for an assumed critical 5-minute storm:

$$Q = 2.78 \times i \times A$$

Where:

Q = Peak Discharge (l/s)

i = Rainfall Intensity (mm/hr)

(50.8mm/hr for 1yr 5 min storm - TRRL Report 595)

A = Contributing Impermeable Areas (ha)

- 7.4. The surface water run-off generated from the Site during the 1 year, 30 year, and 100 year rainfall events are provided in **Appendix D**.
- 7.5. The Greenfield runoff rates from the Site have been determined using the UK Wallingford UKSuDS website based on the FEH Statistical Method.

7.6. A summary of both the Brownfield (existing impermeable area) and equivalent greenfield runoff (developable area) rates are provided in *Table 6-1* below with the calculations provided in **Appendices D and E**.

<i>Scenario</i>	<i>Area</i>	<i>Q_{1yr.}</i>	<i>Q_{30yr.}</i>	<i>Q_{100yr.}</i>
<i>Brownfield</i>	0.640 ha	90.4 l/s	201.1 l/s	256.0 l/s
<i>Greenfield</i>	0.734 ha	0.8 l/s	2.2 l/s	3.0 l/s

Table 6-1: Comparative Brownfield and Greenfield Runoff Rates

Drainage Hierarchy

7.7. In accordance with the NPPF Planning Practice Guidance, surface water runoff should be disposed of according to the following hierarchy:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.

These are assessed in full below.

Into the Ground (Infiltration)

7.8. The site is located on Storm Beach Deposits (gravels) which form the stone beach to the south of the site which further underlain by a bedrock of Wittering Formation (sand, silt and clay).

7.9. The superficial deposits are likely to promote infiltration whilst it is noted that Wittering Formation can have variable infiltration potential.

7.10. Due to the site's location there will be a tidal influence on groundwater levels, and given that a minimum 1m should be allowed between the peak measured groundwater level and the base of any proposed infiltration, infiltration is not deemed viable for the main (permeable surfacing) roads or for the discharge of roof runoff. However it is deemed appropriate for the minor areas of shallow permeable resin footways.

To a Surface Water Body

7.11. The nearest waterbody is the English Channel to the south of the site. As the drainage will interact so closely with the sea and the tide, it is appropriate to allow a free discharge from the site (in accordance with the National SuDS Standards). The assessment has considered the interaction of a free discharge with a surcharged outfall (i.e. at high tide) to ensure there is no negative effects to the development site if a dual event of heavy rainfall and a high tide were to occur.

To a Surface Water Sewer, Highway Drain, Or Another Drainage System

7.12. There are no known existing surface water sewers within the vicinity of the site and has therefore been discounted as a means of discharge from the site.

To a Combined Water Sewer

7.13. There are no combined water sewers within the vicinity of the site and has therefore been discounted as a means of discharge from the site.

Proposed Sustainable Drainage Systems (SuDS)

7.14. The constraints and opportunities for the use of SuDS techniques within the Site is appraised in Table 6-2 below, adopting the management train approach outlined in CIRIA C753 'The SuDS Manual'.

Type	Infiltration Devices (Source Control)
Constraints	High groundwater and variable infiltration potential could inhibit infiltration techniques as a main discharge option.
Opportunities	None
Type	Permeable Paving (Source Control)
Constraints	None
Opportunities	Unlined permeable paving can be incorporated.
Type	Rainwater Harvesting (Source Control)
Constraints	The benefits of rainwater harvesting on a specific design storm event cannot be quantified, due to the seasonal availability of storage within the structure.

Opportunities	None given the site use and materials surrounding the development.
Type	<i>Swales etc. (Permeable Conveyance)</i>
Constraints	Significant land requirement to accommodate 1:3 side slopes.
Opportunities	None
Type	<i>Bio Retention Systems</i>
Constraints	Limited benefits to attenuation requirements in larger developments.
Opportunities	No significant streetside trees or planting is proposed and therefore opportunities are extremely limited.
Type	<i>Green/Blue Roofs</i>
Constraints	Limited benefits to attenuation requirements in larger developments and require additional structural integrity.
Opportunities	None
Type	<i>Attenuation Tanks (End of Line Treatment)</i>
Constraints	None
Opportunities	Oversize pipes or geocellular storage could be utilised if required.

Table 6-2: C753 SuDS Management Train

7.15. After consideration of the CIRIA C753 approach the most viable SuDS options for the development site is considered to be permeable paving, and free discharge into the English Channel with a geocellular attenuation tank to account for high tide and high rainfall events.

7.16. In order to fully utilise the permeable paving, and ensure that the roof runoff is sufficiently treated, it is proposed to use rainwater diffuser units (by Polypipe or similar approved) to discharge the roof runoff into the permeable paving, which would then permeate into the perforated pipes at the bottom of the permeable paving, and eventually discharge to the geocellular attenuation tank.

Pre and Post Development Impermeable Area

7.17. The developable site area is 0.734ha. Table 6-3 below shows the breakdown of pre and post development impermeable areas.

Site Ref.	Impermeable Area (ha)	Permeable Area (ha)	% Impermeable
<i>Pre-Development</i>	0.640 ha	0.094 ha	87%
<i>Post-Development</i>	0.473 ha	0.277 ha	64%

Table 6-3: Summary of Pre and Post Development Impermeable Areas

7.18. Table 6-4 below shows the breakdown of post development impermeable areas in more detail, as a percentage of the developable area (0.734ha).

Proposed Areas	Area (ha)	%	Discharge Location
<i>Permeable (Soft Landscaping)</i>	0.261 ha	36%	N/A
<i>Unlined Permeable Paving (Resin)</i>	0.046 ha	6 %	Small area to infiltrate into ground
<i>Unlined Permeable Road (Asphalt)</i>	0.204 ha	28 %	English Channel
<i>Roofs (5 buildings)</i>	0.224 ha	30 %	English Channel
Total	0.734 ha	100 %	

Table 6-4: Summary of Post-Development Impermeable Areas

Proposed Discharge Rates

7.19. As it is proposed to discharge the surface water drainage through free discharge into the English Channel, it is not necessary to set a restricted discharge rate from the site.

Proposed Surface Water Attenuation

7.20. In order to protect the site against tidal influence, a flap valve should be placed on the outfall headwall and pipe along with additional storage in the form of a geocellular attenuation tank to manage flows during a high tide event. Calculations have been run for the updated scheme and can be found in **Appendix G**. The proposed surface water drainage strategy layout is provided in **Appendix F**.

7.21. The National Tidal and Sea Level Facility by the University of Liverpool provides tidal information. The nearest tide gauge is Portsmouth. The Mean High Water Springs (MHWS) is 4.80m AOD and the Mean Low Water Springs (MLWS) is 1.10m AOD. The invert level of the surcharged outfall is 3.40m AOD. The tide has been modelled assuming two high tides per day approximately 6 hours apart.

7.22. The *Causeway Flow* design software has been utilised to calculate the storage requirements for the 1 in 2 year, 1 in 30-year, 1 in 100-year and 1 in 100-year + 45% climate change allowance events with a total storage volume for the attenuation of 342m³ required (area of 450m² with 0.8m depth and 95% porosity) and a total storage volume for the permeable paving of 215m³ required (area of 2044m² with 0.35m depth and 30% porosity). These calculations can be found in full in **Appendix G**.

Urban Creep

7.23. As the proposed development is for residential flats there is no requirement for urban creep to be considered for the development.

Maintenance and Management of System

7.24. The maintenance of all SuDS components will be in accord with the best practices and the CIRIA Manual C753. The responsibility will lie with a Management Company appointed by the developer. The name of the Management Company is to be advised at a later date.

7.25. SuDS maintenance plan can be found in **Appendix J**.

Surface Water Quality

7.26. The recommended stage of treatment in terms of water quality will be provided through the aforementioned SuDS features. In line with the SuDS Manual C753, Tables 26.2 and 26.3, the pollution hazard and mitigation indices associated with residential roofs can be mitigated by the provision of SuDS features.

7.27. Refer to **Appendix I** for the pollution hazard and mitigation indices which shows the criteria has been met for this proposed development.

Updated National Standards for Sustainable Drainage Systems (SuDS)

Standard 1: Runoff Destinations

7.28. The development is discharging to the English Channel (Priority 3), whilst allowing for passive infiltration (unlined) for the road and footway areas (Priority 2). There is no requirement for non-potable use of water on site and therefore the proposals utilise the highest relevant priority.

Standard 2: Management of Everyday Rainfall Interception)

7.29. It is stated that *"Where the surface also drains an adjacent impermeable area, compliance shall be assumed for all soil types where the system is unlined if the additional impermeable area is no greater than the permeable area."*

7.30. The proposed permeable roads (0.204 ha) and permeable footways (0.046 ha) are unlined and comprise an area of 0.250 ha. The impermeable area of the five building roofs are 0.224 ha. Therefore the proposed SuDS design complies with the above requirement and is therefore appropriate.

Standard 3: Management of Extreme Rainfall and Flooding

7.31. The proposed SuDS design provides adequate storage, with no flooding noted on site, for up to the 100-year storm event including a 45% allowance for climate change. The design is therefore compliant with Standard 3. Refer to **Appendix G** for hydraulic calculations.

Standard 4: Water Quality

- 7.32. The drainage design utilises permeable paving which will provide treatment to the discharge and meets the requirements of In line with the SuDS Manual C753, Tables 26.2 and 26.3 and is therefore considered in compliance with Standard 4.
- 7.33. Refer to **Appendix I** for the pollution hazard and mitigation indices tables.

Standard 5: Amenity

- 7.34. The proposed SuDS strategy incorporates proposed soft landscaping and planting to enhance the visual qualities of the site.
- 7.35. New planted beds with trees and shrubs together with open grass and seating areas located throughout the site will be accessible via the pedestrian walkway for all residents to enjoy, in addition, each flat has its own private balcony the majority of which offer a sea view.
- 7.36. As the site is located at the seafront, the beach will also provide additional amenity.

Standard 6: Biodiversity

- 7.37. The landscaping proposals have been designed to provide a significant increase in biodiversity over the current use of the site and have taken into account the Ecological reports produced by Arbtech Consulting Ltd.
- 7.38. The baseline value of the site has raised from 0.14 area based habitat units to 0.74 habitat units, with a net change of 0.60 units resulting in a 440% gain with all the trading rules met.
- 7.39. The opportunity has been taken to greatly improve the green space and biodiversity of the site and to keep parking and green space separated. The green space areas provide seven planted beds with trees and shrubs and open grass areas.

Standard 7: Design of Drainage for Construction, Operation, Maintenance,
Decommissioning and Structural Integrity

- 7.40. The design has been produced with consideration to longer term construction methods to ensure that the proposals are deliverable. This includes details on the levels of the associated drainage works alongside appropriate specification of materials and design to ensure that the proposals remain operational for the appropriate lifetime.
- 7.41. A Management and Maintenance Plan which sets out the mitigation works to ensure the on-going functionality of the design following construction can be found in **Appendix J**.

8. Proposed Foul Water Drainage Strategy

- 8.1. The existing site is currently occupied by an amusement park and therefore has limited foul water discharge, estimated to be 3.8 l/s, based on the British Flows and Loads guidance.
- 8.2. Calculations for the proposed development have been undertaken, also based on the British Flows and Loads guidance, where it is estimated that the proposed development will produce a peak foul flow from the site equating to 2.5 l/s. Refer to the Foul Loading Calculations provided in **Appendix H**.
- 8.3. It is proposed that foul flows from the development will discharge into Southern Water sewer located to the west of the site subject to confirmation of the invert level of the head of the run. A preliminary layout of the foul water drainage is provided in **Appendix F**.

9. Conclusions

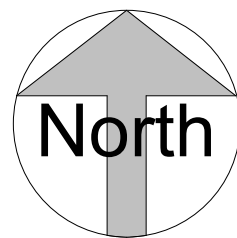
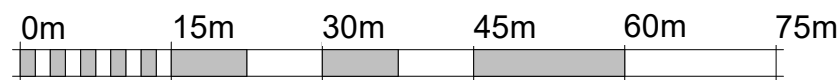
- 9.1. Ardent Consulting Engineers, has been appointed by Mr & Mr Hill and Mr & Mr Cogger to prepare a Flood Risk Assessment and Drainage Statement to support a planning application for a proposed development at the land at Hayling Island, PO11 0AG.
- 9.2. The scheme proposals comprise of five blocks that contain 55 residential units with a mix of two-bedroom and three-bedroom units. The development is classified as having a 'More Vulnerable' classification within the NPPF. The proposed development layout plans are provided in **Appendix A**.
- 9.3. The lower ground floor (lobby level) is at a level of 5.150m AOD. The upper ground floor (residential units) is at a level of 6.870m AOD which is 300mm above the 200 year tidal event plus allowance for increase in levels up to the year 2125.
- 9.4. Given that the site is situated in Flood Zone 2 and Flood Zone 3, the sequential test would need to be undertaken. However, the site was allocated in the 2014 Havant Borough Local Plan as Beachlands (HYY2/HY45) for potential development in housing, leisure and tourism. The Sequential Test at that time was completed as part of the allocation process and therefore does not need to be undertaken again. The allocation is confirmed within the Strategic Flood Risk Assessment (Local Plan Sites) in November 2018 to inform the Local Plan update.
- 9.5. The 2018 East Solent Flood Inundation Model for Hayling Island study indicates levels for the 0.5% climate change event 2115 epoch the level on the site is 5.13m AOD and for the 0.1% climate change event epoch 2115 is 5.22m AOD. The defence level at this location is 5.00m AOD.
- 9.6. The 1 in 200 year tidal hazard mapping for tidal flooding up to the 2065 shows there is dry access. The 1 in 200 year tidal hazard mapping for tidal flooding up to the 2115 shows there is not dry access. However, the route to the site only contains 'danger for some' indicating that emergency vehicles could enter the site. Therefore, safe refuge is recommended in this case, with access for lower ground floor lobby occupiers being via the internal residential stair cores, allowing them to access safe refuge in the event of flooding.
- 9.7. Groundwater levels are noted to range in the vicinity of the site but boreholes to the west of the site within similar strata identified groundwater at a depth of 1.5m –

2.5m bgl.

- 9.8. The site is located on Storm Beach Deposits (gravels) which form the stone beach to the south of the site which further underlain by a bedrock of Wittering Formation (sand, silt and clay).
- 9.9. The superficial deposits are likely to promote infiltration whilst it is noted that Wittering Formation can have variable infiltration potential.
- 9.10. Due to the site's location there will be a tidal influence on groundwater levels, and given that a minimum 1m should be allowed between the peak measured groundwater level and the base of any proposed infiltration, infiltration is not deemed viable for the main (permeable surfacing) roads or for the discharge of roof runoff. However it is deemed appropriate for the minor areas of permeable resin footways.
- 9.11. In order to protect the site against tidal influence, a flap valve should be placed on the outfall headwall and pipe along with additional storage in the form of a geocellular attenuation tank to manage flows during a high tide event.
- 9.12. The *Causeway Flow* design software has been utilised to calculate the storage requirements for the 1 in 2 year, 1 in 30-year, 1 in 100-year and 1 in 100-year + 45% climate change allowance events with a total storage volume for the attenuation of 342m³ required (area of 450m² with 0.8m depth and 95% porosity) and a total storage volume for the permeable paving of 215m³ required (area of 2044m² with 0.35m depth and 30% porosity).
- 9.13. The National Tidal and Sea Level Facility by the University of Liverpool provides tidal information. The nearest tide gauge is Portsmouth. The Highest Astronomical Tide (HAT) is 5.18m AOD and the Lowest Astronomical Tide (LAT) is 0.20m. The invert level of the surcharged outfall is 3.40m AOD. The tide has been modelled assuming two high tides per day approximately 6 hours apart.
- 9.14. The existing site is currently occupied by an amusement park and therefore has limited foul water discharge, estimated to be 3.8 l/s, based on the British Flows and Loads guidance.

- 9.15. Calculations for the proposed development have been undertaken, also based on the British Flows and Loads guidance, where it is estimated that the proposed development will produce a peak foul flow from the site equating to 2.5 l/s.
- 9.16. It is proposed that foul flows from the development will discharge into Southern Water sewer located to the west of the site subject to confirmation of the invert level of the head of the run.
- 9.17. In conclusion, this FRA demonstrates that the proposals are consistent with the aims of NPPF, PPG and Development Plan. The site would not be at risk of flooding or increase the flood risk to others as a result of the proposed development and the proposed management of surface water runoff is proportionate for the development

Appendix A



VISUAL SCALE 1:750 @ A3

2 Main Site Plan

1 : 750



**IJ Murray
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These drawings are for planning and, if specified, building regulation purposes only and are not for construction. All dimensions should be checked on site before work commences

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IJ Murray Associates Ltd

**Mr Marshall Hill Hayling
Fair Development HI
V6**

Site Plan

Project number	Project Number	A102
Date	Issue Date	
Drawn by	Author	
Paper size	A3 (Print 100% no borders)	Scale
		1 : 750

Appendix B

Amusement Arcade

STATION SCHEDULE

STN	A	471372.935	98489.436	5.065
STN	B	471383.127	98485.344	4.505
STN	C	471423.008	98489.373	4.848
STN	D	471450.956	98483.381	4.830
STN	E	471466.240	98483.284	4.934
STN	F	471500.489	98481.125	5.258
STN	G	471503.307	98483.257	4.943
STN	H	471489.810	98486.021	4.956
STN	I	471433.357	98483.960	4.920
STN	J	471441.427	98744.903	5.282
STN	K	471458.487	98748.398	4.721
STN	D1	471443.400	98687.239	4.660
STN	D2	471482.909	98676.041	3.822
STN	H1	471452.132	98483.117	4.934

NO ACCESS

NO ACCESS

EXISTING

LEVEL DATUM

Survey profile levels set to Ordnance Survey National using GPS Smartnet RTK network.

NOTES

1. All dimensions and levels to be checked on site by contractor prior to fabrication/construction.
2. This drawing is to be read in conjunction with all relevant consultant's and/or specialist's drawings and documents. Any discrepancies or variations are to be notified to SurveyCloud Ltd before the affected work commences.
3. This drawing and the copyright and patents therein are the property of SurveyCloud Ltd and may not be used or reproduced without prior consent.

KEY

A	Approximate	LB	Lintel Box
AB	Air Brick	LP	Lamp Post
AC	Arch Crown Height	LTB	Lighting Bollard
Agg	Aggregate	MH	Manhole
AS	Arch Spring Height	MK	Marker Post
Asph	Asphalt	MPO	Manhole Post
B	Bollard	NP	Name Plate
BB	Beltline Beacon	OH	Overhead Cable
BH	Borehole	OHB	Overhead Building
Bpav	Brick Pavers	OCHE	Overhead Electric Cable
BIS	Back Inlet Gully	CHT	Overhead Telecom Cable
BRW	Brick Wall	FB	Foot Box
BS	Barrel Vault	PM	Parking Meter
C	Celling Height	PO	Post
CCP	Celling Straps Up	PML	Parapet Wall Level
CF	False Ceiling Height	RB	Removable Bollard
CH	Celling Hatch	RE	Rodding Eye
CL	Cover Level	RG	Road Gully
Co	Cobble	RL	Ridge Level
Conc	Concrete	RPO	Reflective Post
Cpav	Crazy Paving	RS	Road Sign
Cup	Cupboard	RWP	Rampway Post
CPO	Concrete Post	SH	Window Sill to Head Height
CPS	Concrete Paving Slabs	SP	Soil Pipe
CWT	Cold Water Tank	SSL	Structural Slab Level
D	Depth (metres)	STN	Survey Station
DC	Drainage Channel	SVP	Soil Vent Pipe
DH	Door Head Height	SWC	Surface Water IC
DPC	Damp Proof Course	TGB	Telephone Call Box
EL	Eaves Level	TFL	Top Fence Level
EP	Electric Pole	TL	Traffic Light
ER	Earth Rod	TLCB	Traffic Light Control Box
FB	Fixed Bollard	Tran	Tram
FFL	Finished Floor Level	TP	Telegraph Pole
FH	Fire Hydrant	Tpav	Tactile Paving
FL	Flood Light	TPO	Timber Post
FP	Flag Pole	TWL	Top Wall Level
FPO	Fence Post	U	Unknown
FR	Flat Roof Level	UB	Underside of Beam Height
FWC	Four Wheel IC	UBW	Underside of Beam Height
G	Gully	UD	Underside of Ducting Height
GA	Gas Meter	UP	Underside of Pipe Height
GP	Gas Pipe	US	Underside
GPO	Gas Post	UTL	Unable to Lift
H	Height (metres)	VP	Vent Pipe
HB	Hinged Bollard	WAC	Window Arch Crown Height
HWC	Hot Water Cylinder	WAC	Window Arch Spring Height
IC	Inspection Cover	WH	Window Head Height
ID	Invert Depth	WL	Water Level
IL	Invert Level	WM	Water Meter
JB	Joint Box	WP	Water Pipe
KIG	Kerb Inlet Gully	WS	Window Sill Height
L	Level	WSV	Water Stop Valve
Revision	Comment	Date	

Client
MR MARSHALL HILL

Project
CAROUSEL AMUSEMENTS LTD
1 SEA FRONT, HAYLING ISLAND
HAMPSHIRE PO11 5AG

Title
EXISTING TOPOGRAPHIC PLAN

Drawing Number	Revision	Status
SD25739-E2.0	A	EXISTING
Scale	Sheet Size	Drawn By
1:200	A1	DW
Date	Drawn By	Date
SEPTEMBER 2025		

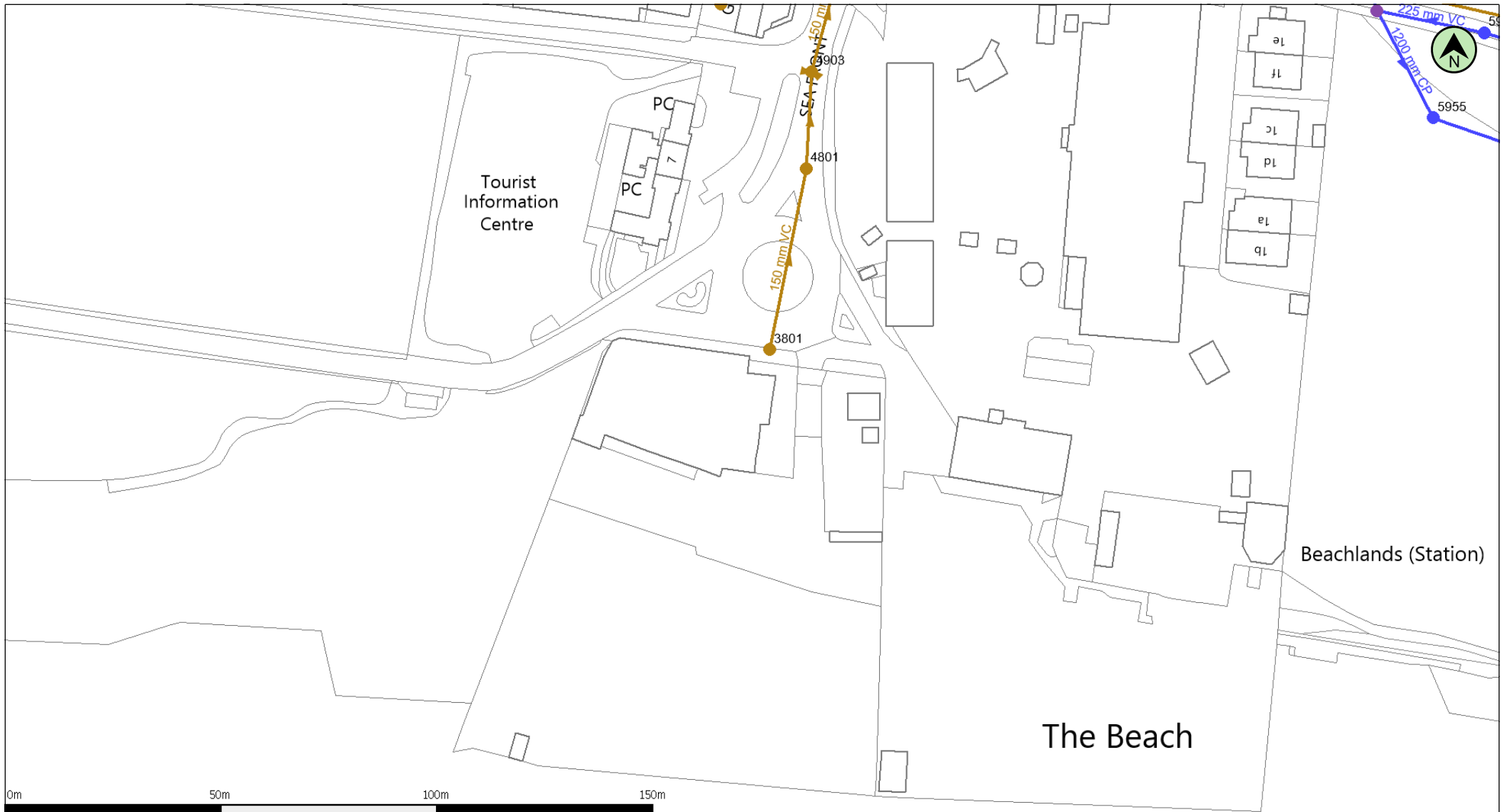
SURVEYCLOUD LTD

Worthing Road
Claydon Lane
Hampshire GU26 1DD

Phone 07500 668 926
Office 01702 262 485
mail@surveycloud.co.uk
www.surveycloud.co.uk

1:200 Scale (metres)
0 2m 4m 6m 8m 10m

Appendix C

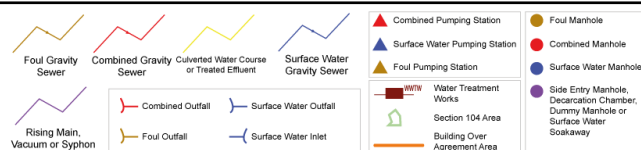


(c) Crown copyright and database rights 2024 Ordnance Survey 100031673 Date: 02/09/24 Scale: 1:1250 Map Centre: 471390,98833 Data updated: 22/08/24 Our Ref: 1558687 - 1 Wastewater Plan A4 Powered by digdat

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2024 Ordnance Survey 100031673 .This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



lbarrett@ardent-ce.co.uk
Beachland



Appendix D

Existing site information:

Site Boundary Area 11700 m²
 Developable Area 0.734 ha

Impermeable Area 0.640 ha

Modified Rational Method Equation: $Q_n = 2.78 CiA$

where:

C *Runoff Coeffi* = 1 (in this case 1 as using impermeable area)
 i_n *Rainfall Intensity for n return period (mm/hr)*
 A *Impermeable Area (Ha)*
 Q_n *Runoff for n return period (l/s)*

Rainfall Intensity:

The rainfall intensities for various return periods were extracted from Table 1(a) of the Transport and Road Research Laboratory Report - Estimated rainfall for drainage calculations in the United Kingdom (TRRL Report LR 595) by C. P. Young. For the 5 min duration.

i_1 50.8 mm/hr
 i_{30} 113.02 mm/hr
 i_{100} 143.9 mm/hr

Existing Surface Water Runoff:

Therefore:

			C		i_n		A		Q_n
Q_1	2.78	x	1	x	50.8	x	0.640	=	90.38 l/s
Q_{30}	2.78	x	1	x	113.0	x	0.640	=	201.09 l/s
Q_{100}	2.78	x	1	x	143.9	x	0.640	=	256.03 l/s

Appendix E

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	<input type="text" value="16/09/2025"/>
Calculated by	<input type="text"/>
Reference	<input type="text"/>
Model version	<input type="text" value="2.1.2"/>

Location

Site name	<input type="text" value="Hayling Island"/>
Site location	<input type="text"/>



Site easting (British National Grid)	<input type="text" value="471454"/>
Site northing (British National Grid)	<input type="text" value="98835"/>

Site details

Total site area (ha)	<input type="text" value="0.734"/>	ha
----------------------	------------------------------------	----

Greenfield runoff

Method

Method	<div>FEH statistical</div>
--------	----------------------------

FEH statistical

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	<div>683mm</div>	☐	<div>683</div>
BFIHOST	<div>0.734</div>		
QMed-QBar conversion	<div>1.136</div>	☐	<div>1.136</div>
QMed (l/s)	<div>0.83l/s</div>		
QBar (FEH statistical) (l/s)	<div>0.94l/s</div>		

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	<div>7</div>	☐	<div>7</div>
1 year growth factor	<div>0.85</div>		
2 year growth factor	<div>0.88</div>		
10 year growth factor	<div>1.62</div>		
30 year growth factor	<div>2.3</div>		
100 year growth factor	<div>3.19</div>		
200 year growth factor	<div>3.74</div>		

Results

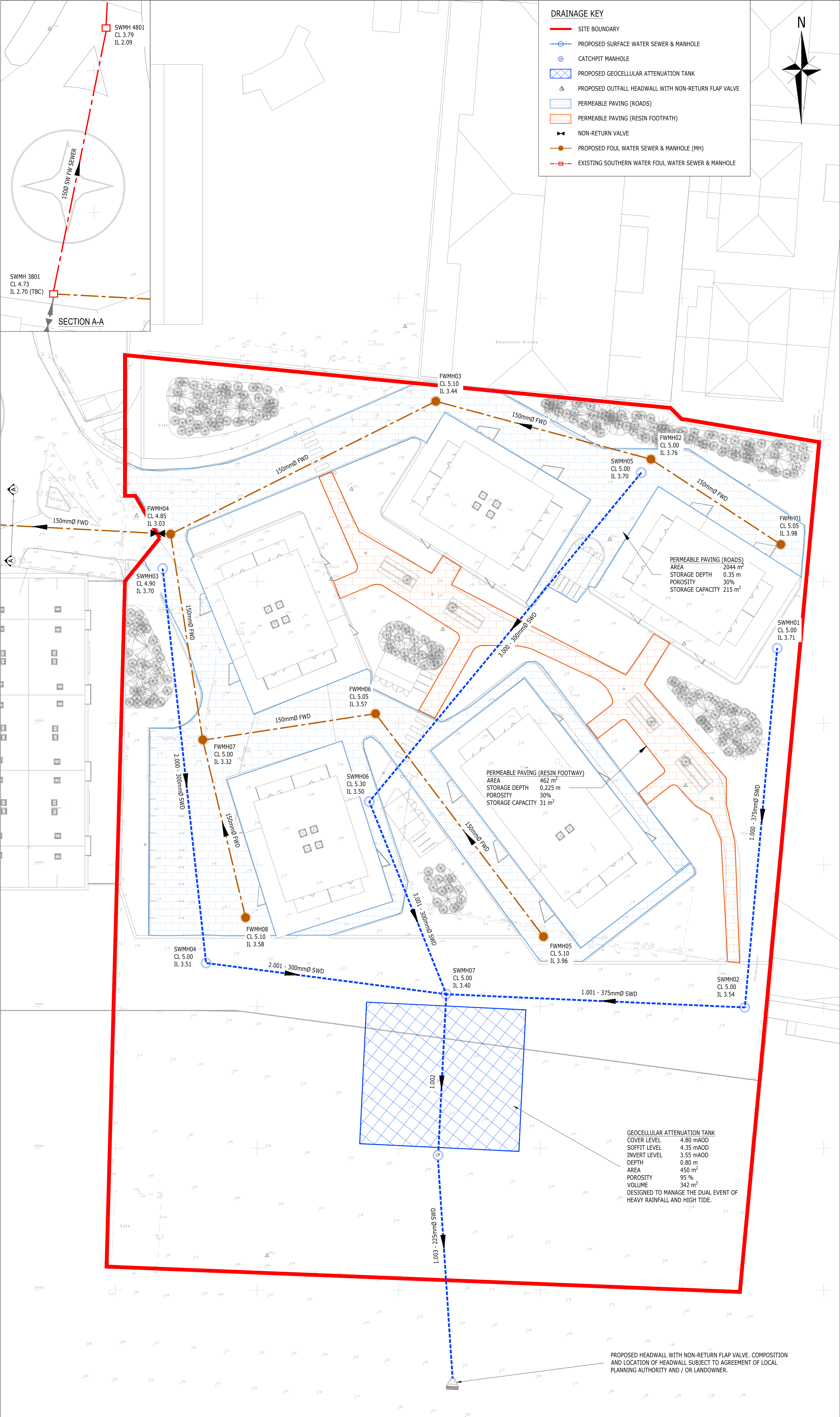
Method	<div>FEH statistical</div>
Flow rate 1 year (l/s)	<div>0.8l/s</div>
Flow rate 2 year (l/s)	<div>0.8l/s</div>
Flow rate 10 years (l/s)	<div>1.5l/s</div>
Flow rate 30 years (l/s)	<div>2.2l/s</div>
Flow rate 100 years (l/s)	<div>3.0l/s</div>
Flow rate 200 years (l/s)	<div>3.5l/s</div>

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

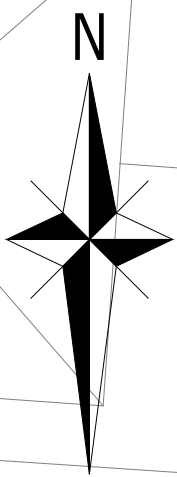
This report was produced using the Greenfield runoff rate estimation tool (2.1.2) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com/) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Appendix F



DRAINAGE KEY

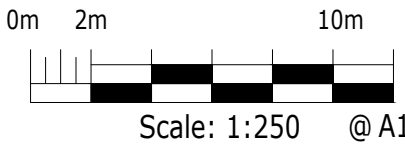
- SITE BOUNDARY
- PROPOSED SURFACE WATER SEWER & MANHOLE
- CATCHPIT MANHOLE
- PROPOSED GEOCELLULAR ATTENUATION TANK
- PROPOSED OUTFALL HEADWALL WITH NON-RETURN FLAP VALVE
- PERMEABLE PAVING (ROADS)
- PERMEABLE PAVING (RESIN FOOTPATH)
- NON-RETURN VALVE
- PROPOSED FOUL WATER SEWER & MANHOLE (MH)
- EXISTING SOUTHERN WATER FOUL WATER SEWER & MANHOLE



- NOTES:**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT SPECIFICATION, INC. RISK ASSESSMENTS AND ALL OTHER RELATED DRAWINGS ISSUED BY THE ENGINEER.
 - DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
 - ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS OTHERWISE STATED.
 - ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE WORKS.
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INFORMATION SUMMARY			
INFORMATION TYPE	SOURCE	REFERENCE	REVISION & DATE
SITE LAYOUT	IH MURRAY ASSOCIATES LTD	A102	V6 19-09-2025
TOPOGRAPHICAL SURVEY	SURVEYCLOUD LTD	SD25739-E2.0	- 16-09-2025
LANDSCAPE	IH MURRAY ASSOCIATES LTD	A102	V6 19-09-2025
STRATEGIC LEVELS	IH MURRAY ASSOCIATES LTD	A126	V6 19-09-2025

PRELIMINARY



GEOCELLULAR ATTENUATION TANK
COVER LEVEL 4.80 mAOD
SOFFIT LEVEL 4.35 mAOD
INVERT LEVEL 3.55 mAOD
DEPTH 0.80 m
AREA 450 m²
POROSITY 95 %
VOLUME 342 m³
DESIGNED TO MANAGE THE DUAL EVENT OF HEAVY RAINFALL AND HIGH TIDE.

PROPOSED HEADWALL WITH NON-RETURN FLAP VALVE. COMPOSITION AND LOCATION OF HEADWALL SUBJECT TO AGREEMENT OF LOCAL PLANNING AUTHORITY AND / OR LANDOWNER.

Rev	Description	Drn	Chk	App	Date
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Client
MR & MR HILL AND MR & MR COGGER

Project Title:
HAYLING FAIR DEVELOPMENT

Drawing Title:
PROPOSED SURFACE WATER DRAINAGE LAYOUT

Drawn by JS	Checked by JS	Approved by CC
A1 Scale 1:250	Date Sept. 2025	Revision -

Drawing Number
2504860-ACE-XX-00-DR-C-0301

Appendix G

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.061	4.00	5.000	1350	81.175	62.668	1.100
2	0.061	4.00	5.000	1350	76.572	11.960	1.270
5	0.061	4.00	5.000	1200	61.936	87.434	1.110
6	0.061	4.00	5.300	1200	23.512	40.863	1.612
7	0.061	4.00	5.000	1350	34.498	13.690	1.410
8			4.800	1350	33.832	1.922	1.250
8_OUT			3.700	1200	31.697	-41.386	0.300
3	0.061	4.00	4.900	1200	-5.578	73.900	1.010
4	0.061	4.00	5.000	1200	0.520	18.134	1.295

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
3.000	5	6	60.376	0.600	3.890	3.688	0.202	298.9	300	5.11	50.0
3.001	6	7	29.310	0.600	3.688	3.590	0.098	299.1	300	5.65	50.0
1.002	7	8	11.787	0.600	3.590	3.550	0.040	294.7	375	5.86	50.0
1.003	8	8_OUT	43.361	0.600	3.550	3.400	0.150	289.1	225	6.81	50.0
2.000	3	4	56.098	0.600	3.890	3.705	0.185	303.2	300	5.04	50.0
2.001	4	7	34.267	0.600	3.705	3.590	0.115	298.0	300	5.67	50.0
1.000	1	2	50.916	0.600	3.900	3.730	0.170	299.5	375	4.81	50.0
1.001	2	7	42.110	0.600	3.730	3.590	0.140	300.8	375	5.49	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
3.000	0.904	63.9	8.3	0.810	1.312	0.061	0.0	72	0.627
3.001	0.904	63.9	16.5	1.110	1.110	0.122	0.0	104	0.762
1.002	1.050	116.0	57.9	1.035	0.875	0.427	0.0	187	1.049
1.003	0.764	30.4	57.9	1.025	0.075	0.427	0.0	225	0.778
2.000	0.897	63.4	8.3	0.710	0.995	0.061	0.0	73	0.625
2.001	0.905	64.0	16.5	0.995	1.110	0.122	0.0	103	0.762
1.000	1.041	115.0	8.3	0.725	0.895	0.061	0.0	68	0.613
1.001	1.039	114.8	16.5	0.895	1.035	0.122	0.0	96	0.746

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	60.376	298.9	300	Circular	5.000	3.890	0.810	5.300	3.688	1.312
3.001	29.310	299.1	300	Circular	5.300	3.688	1.312	5.000	3.590	1.110
1.002	11.787	294.7	375	Circular	5.000	3.590	1.035	4.800	3.550	0.875
1.003	43.361	289.1	225	Circular	4.800	3.550	1.025	3.700	3.400	0.075
2.000	56.098	303.2	300	Circular	4.900	3.890	0.710	5.000	3.705	0.995
2.001	34.267	298.0	300	Circular	5.000	3.705	0.995	5.000	3.590	1.110
1.000	50.916	299.5	375	Circular	5.000	3.900	0.725	5.000	3.730	0.895
1.001	42.110	300.8	375	Circular	5.000	3.730	0.895	5.000	3.590	1.035

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	5	1200	Manhole	Adoptable	6	1200	Manhole	Adoptable
3.001	6	1200	Manhole	Adoptable	7	1350	Manhole	Adoptable
1.002	7	1350	Manhole	Adoptable	8	1350	Manhole	Adoptable
1.003	8	1350	Manhole	Adoptable	8_OUT	1200	Manhole	Adoptable
2.000	3	1200	Manhole	Adoptable	4	1200	Manhole	Adoptable
2.001	4	1200	Manhole	Adoptable	7	1350	Manhole	Adoptable
1.000	1	1350	Manhole	Adoptable	2	1350	Manhole	Adoptable
1.001	2	1350	Manhole	Adoptable	7	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
1	81.175	62.668	5.000	1.100	1350		0	1.000	3.900	375
2	76.572	11.960	5.000	1.270	1350		1	1.000	3.730	375
							0	1.001	3.730	375
5	61.936	87.434	5.000	1.110	1200		0	3.000	3.890	300
6	23.512	40.863	5.300	1.612	1200		1	3.000	3.688	300
							0	3.001	3.688	300
7	34.498	13.690	5.000	1.410	1350		1	3.001	3.590	300
							2	2.001	3.590	300
							3	1.001	3.590	375
							0	1.002	3.590	375
8	33.832	1.922	4.800	1.250	1350		1	1.002	3.550	375
							0	1.003	3.550	225
8_OUT	31.697	-41.386	3.700	0.300	1200		1	1.003	3.400	225
3	-5.578	73.900	4.900	1.010	1200		0	2.000	3.890	300
4	0.520	18.134	5.000	1.295	1200		1	2.000	3.705	300
							0	2.001	3.705	300

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	0	0	0
100	45	0	0

Node 8_OUT Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to All storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	-2.300	300	0.780	600	-1.068	900	-0.452	1200	0.164
60	-1.684	360	1.400	660	-1.684	960	0.164	1260	-0.452
120	-1.068	420	0.780	720	-2.300	1020	0.780	1320	-1.068
180	-0.452	480	0.164	780	-1.684	1080	1.400	1380	-1.684
240	0.164	540	-0.452	840	-1.068	1140	0.780	1440	-2.300

Node 7 Online Orifice Control

Flap Valve	✓	Invert Level (m)	3.590	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.300		

Node 8 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	3.550
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	45

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	450.0	0.0	0.800	450.0	0.0	0.801	0.0	0.0

Node 3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.400	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	5	Depth (m)	0.350
Safety Factor	2.0	Width (m)	22.600	Inf Depth (m)	
Porosity	0.30	Length (m)	22.600		

Node 4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.500	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	22.600	Inf Depth (m)	
Porosity	0.30	Length (m)	22.600		

Node 5 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.500	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1	Depth (m)	0.350
Safety Factor	2.0	Width (m)	22.600	Inf Depth (m)	
Porosity	0.30	Length (m)	22.600		

Node 6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.800	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.350
Safety Factor	2.0	Width (m)	22.600	Inf Depth (m)	
Porosity	0.30	Length (m)	22.600		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	108.847	30.800
2 year 15 minute winter	76.384	30.800
2 year 30 minute summer	69.973	19.800
2 year 30 minute winter	49.104	19.800
2 year 60 minute summer	47.300	12.500
2 year 60 minute winter	31.425	12.500
2 year 120 minute summer	31.786	8.400
2 year 120 minute winter	21.118	8.400
2 year 180 minute summer	25.325	6.517
2 year 180 minute winter	16.462	6.517
2 year 240 minute summer	20.434	5.400
2 year 240 minute winter	13.576	5.400
2 year 360 minute summer	15.933	4.100
2 year 360 minute winter	10.357	4.100
2 year 480 minute summer	12.701	3.356
2 year 480 minute winter	8.438	3.356
2 year 600 minute summer	10.475	2.865
2 year 600 minute winter	7.157	2.865
2 year 720 minute summer	9.376	2.513
2 year 720 minute winter	6.301	2.513
2 year 960 minute summer	7.723	2.034
2 year 960 minute winter	5.116	2.034
2 year 1440 minute summer	5.629	1.509
2 year 1440 minute winter	3.783	1.509
2 year 2160 minute summer	4.062	1.123
2 year 2160 minute winter	2.799	1.123
2 year 2880 minute summer	3.417	0.916
2 year 2880 minute winter	2.297	0.916
2 year 4320 minute summer	2.673	0.699

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 4320 minute winter	1.760	0.699
2 year 5760 minute summer	2.288	0.586
2 year 5760 minute winter	1.481	0.586
2 year 7200 minute summer	2.028	0.517
2 year 7200 minute winter	1.309	0.517
2 year 8640 minute summer	1.851	0.472
2 year 8640 minute winter	1.195	0.472
2 year 10080 minute summer	1.727	0.441
2 year 10080 minute winter	1.115	0.441
30 year 15 minute summer	272.371	77.072
30 year 15 minute winter	191.138	77.072
30 year 30 minute summer	180.328	51.027
30 year 30 minute winter	126.546	51.027
30 year 60 minute summer	122.066	32.258
30 year 60 minute winter	81.098	32.258
30 year 120 minute summer	71.978	19.022
30 year 120 minute winter	47.821	19.022
30 year 180 minute summer	54.066	13.913
30 year 180 minute winter	35.144	13.913
30 year 240 minute summer	42.117	11.130
30 year 240 minute winter	27.982	11.130
30 year 360 minute summer	31.543	8.117
30 year 360 minute winter	20.504	8.117
30 year 480 minute summer	24.512	6.478
30 year 480 minute winter	16.285	6.478
30 year 600 minute summer	19.873	5.436
30 year 600 minute winter	13.579	5.436
30 year 720 minute summer	17.574	4.710
30 year 720 minute winter	11.811	4.710
30 year 960 minute summer	14.272	3.758
30 year 960 minute winter	9.454	3.758
30 year 1440 minute summer	10.225	2.740
30 year 1440 minute winter	6.872	2.740
30 year 2160 minute summer	7.262	2.007
30 year 2160 minute winter	5.003	2.007
30 year 2880 minute summer	6.033	1.617
30 year 2880 minute winter	4.055	1.617
30 year 4320 minute summer	4.607	1.205
30 year 4320 minute winter	3.034	1.205
30 year 5760 minute summer	3.863	0.989
30 year 5760 minute winter	2.500	0.989
30 year 7200 minute summer	3.362	0.858
30 year 7200 minute winter	2.170	0.858
30 year 8640 minute summer	3.018	0.770
30 year 8640 minute winter	1.948	0.770
30 year 10080 minute summer	2.774	0.708
30 year 10080 minute winter	1.790	0.708
100 year 15 minute summer	346.332	98.000
100 year 15 minute winter	243.040	98.000
100 year 30 minute summer	230.741	65.292
100 year 30 minute winter	161.924	65.292
100 year 60 minute summer	156.831	41.446
100 year 60 minute winter	104.195	41.446
100 year 120 minute summer	90.714	23.973
100 year 120 minute winter	60.268	23.973
100 year 180 minute summer	67.586	17.392
100 year 180 minute winter	43.932	17.392
100 year 240 minute summer	52.408	13.850
100 year 240 minute winter	34.819	13.850
100 year 360 minute summer	39.054	10.050
100 year 360 minute winter	25.386	10.050
100 year 480 minute summer	30.305	8.009
100 year 480 minute winter	20.134	8.009
100 year 600 minute summer	24.567	6.720
100 year 600 minute winter	16.785	6.720
100 year 720 minute summer	21.734	5.825
100 year 720 minute winter	14.607	5.825
100 year 960 minute summer	17.684	4.657
100 year 960 minute winter	11.714	4.657
100 year 1440 minute summer	12.686	3.400
100 year 1440 minute winter	8.526	3.400

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year 2160 minute summer	9.022	2.493
100 year 2160 minute winter	6.217	2.493
100 year 2880 minute summer	7.482	2.005
100 year 2880 minute winter	5.028	2.005
100 year 4320 minute summer	5.632	1.473
100 year 4320 minute winter	3.709	1.473
100 year 5760 minute summer	4.654	1.191
100 year 5760 minute winter	3.012	1.191
100 year 7200 minute summer	4.001	1.021
100 year 7200 minute winter	2.582	1.021
100 year 8640 minute summer	3.553	0.906
100 year 8640 minute winter	2.293	0.906
100 year 10080 minute summer	3.235	0.825
100 year 10080 minute winter	2.088	0.825
100 year +45% CC 15 minute summer	502.181	142.100
100 year +45% CC 15 minute winter	352.408	142.100
100 year +45% CC 30 minute summer	334.575	94.673
100 year +45% CC 30 minute winter	234.789	94.673
100 year +45% CC 60 minute summer	227.405	60.097
100 year +45% CC 60 minute winter	151.083	60.097
100 year +45% CC 120 minute summer	131.535	34.761
100 year +45% CC 120 minute winter	87.389	34.761
100 year +45% CC 180 minute summer	97.999	25.219
100 year +45% CC 180 minute winter	63.702	25.219
100 year +45% CC 240 minute summer	75.992	20.082
100 year +45% CC 240 minute winter	50.487	20.082
100 year +45% CC 360 minute summer	56.629	14.572
100 year +45% CC 360 minute winter	36.810	14.572
100 year +45% CC 480 minute summer	43.942	11.612
100 year +45% CC 480 minute winter	29.194	11.612
100 year +45% CC 600 minute summer	35.622	9.743
100 year +45% CC 600 minute winter	24.339	9.743
100 year +45% CC 720 minute summer	31.515	8.446
100 year +45% CC 720 minute winter	21.180	8.446
100 year +45% CC 960 minute summer	25.642	6.752
100 year +45% CC 960 minute winter	16.986	6.752
100 year +45% CC 1440 minute summer	18.395	4.930
100 year +45% CC 1440 minute winter	12.362	4.930
100 year +45% CC 2160 minute summer	13.082	3.615
100 year +45% CC 2160 minute winter	9.014	3.615
100 year +45% CC 2880 minute summer	10.848	2.907
100 year +45% CC 2880 minute winter	7.291	2.907
100 year +45% CC 4320 minute summer	8.167	2.135
100 year +45% CC 4320 minute winter	5.378	2.135
100 year +45% CC 5760 minute summer	6.748	1.727
100 year +45% CC 5760 minute winter	4.367	1.727
100 year +45% CC 7200 minute summer	5.801	1.480
100 year +45% CC 7200 minute winter	3.744	1.480
100 year +45% CC 8640 minute summer	5.152	1.314
100 year +45% CC 8640 minute winter	3.325	1.314
100 year +45% CC 10080 minute summer	4.691	1.197
100 year +45% CC 10080 minute winter	3.027	1.197

Results for 2 year Critical Storm Duration. Lowest mass balance: 96.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	3.969	0.069	9.0	0.1755	0.0000	OK
15 minute winter	2	13	3.959	0.229	18.5	0.5489	0.0000	OK
15 minute winter	5	10	3.964	0.074	9.0	0.1646	0.0000	OK
15 minute winter	6	12	3.965	0.277	19.9	0.5235	0.0000	OK
15 minute winter	7	13	3.954	0.364	49.5	0.8353	0.0000	OK
600 minute winter	8	465	3.739	0.189	7.0	81.1292	0.0000	OK
120 minute summer	8_OUT	360	4.800	1.400	7.9	0.0000	0.0000	OK
15 minute winter	3	10	3.964	0.074	9.0	0.1737	0.0000	OK
15 minute winter	4	13	3.969	0.264	17.7	0.5482	0.0000	OK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	8.8	0.476	0.076	2.0660	
15 minute winter	2	1.001	7	19.7	0.297	0.172	3.7894	
15 minute winter	5	3.000	6	8.7	0.447	0.136	2.4007	
15 minute summer	6	3.001	7	15.6	0.318	0.244	1.9795	
15 minute winter	7	1.002	8	56.7	1.868	0.489	0.6213	
600 minute winter	8	1.003	8_OUT	23.4	0.805	0.771	1.6350	96.4
15 minute winter	3	2.000	4	8.7	0.474	0.137	2.1608	
15 minute summer	4	2.001	7	17.4	0.314	0.272	2.2410	

Results for 30 year Critical Storm Duration. Lowest mass balance: 96.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	11	4.593	0.693	35.7	1.7605	0.0000	SURCHARGED
15 minute winter	2	11	4.532	0.802	47.7	1.9181	0.0000	SURCHARGED
15 minute winter	5	12	4.523	0.633	25.2	1.7623	0.0000	SURCHARGED
15 minute winter	6	11	4.516	0.828	44.8	1.5624	0.0000	SURCHARGED
15 minute winter	7	11	4.468	0.878	112.8	2.0172	0.0000	SURCHARGED
600 minute winter	8	450	3.870	0.320	12.8	137.0567	0.0000	SURCHARGED
120 minute summer	8_OUT	360	4.800	1.400	23.7	0.0000	0.0000	OK
15 minute winter	3	12	4.461	0.571	29.9	3.8307	0.0000	SURCHARGED
15 minute summer	4	11	4.468	0.763	44.3	1.5820	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	27.1	0.507	0.236	5.6159	
15 minute winter	2	1.001	7	47.3	0.429	0.412	4.6446	
15 minute winter	5	3.000	6	27.1	0.488	0.425	4.2516	
15 minute winter	6	3.001	7	45.3	0.644	0.709	2.0640	
15 minute winter	7	1.002	8	123.3	2.334	1.063	0.6856	
600 minute winter	8	1.003	8_OUT	36.2	0.959	1.193	1.7245	179.6
15 minute winter	3	2.000	4	45.8	0.651	0.722	3.9504	
15 minute winter	4	2.001	7	55.3	0.785	0.864	2.4131	

Results for 100 year Critical Storm Duration. Lowest mass balance: 96.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	4.732	0.832	33.7	2.1137	0.0000	FLOOD RISK
15 minute winter	2	10	4.697	0.967	64.0	2.3120	0.0000	SURCHARGED
15 minute winter	5	12	4.570	0.680	42.2	4.8874	0.0000	SURCHARGED
15 minute summer	6	10	4.641	0.953	48.6	1.8002	0.0000	SURCHARGED
15 minute summer	7	10	4.612	1.022	119.6	2.3480	0.0000	SURCHARGED
600 minute winter	8	450	3.934	0.384	15.6	164.7905	0.0000	SURCHARGED
960 minute winter	8_OUT	1080	4.800	1.400	31.2	0.0000	0.0000	OK
15 minute winter	3	12	4.506	0.616	59.8	9.0693	0.0000	SURCHARGED
15 minute winter	4	11	4.542	0.837	59.2	2.9638	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	42.9	0.488	0.373	5.6159	
15 minute summer	2	1.001	7	69.9	0.634	0.609	4.6446	
15 minute winter	5	3.000	6	41.1	0.584	0.644	4.2516	
15 minute summer	6	3.001	7	57.4	0.815	0.898	2.0640	
30 minute summer	7	1.002	8	134.0	2.414	1.155	0.6535	
600 minute winter	8	1.003	8_OUT	39.9	1.040	1.313	1.7245	237.1
15 minute winter	3	2.000	4	55.3	0.785	0.872	3.9504	
15 minute winter	4	2.001	7	61.1	0.867	0.954	2.4131	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 96.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	9	4.895	0.995	52.3	2.5277	0.0000	FLOOD RISK
15 minute winter	2	9	4.857	1.127	88.4	2.6950	0.0000	FLOOD RISK
15 minute winter	5	13	4.632	0.742	76.9	13.2974	0.0000	SURCHARGED
15 minute summer	6	9	4.677	0.989	57.8	1.8664	0.0000	SURCHARGED
15 minute summer	7	9	4.719	1.129	160.5	2.5937	0.0000	FLOOD RISK
600 minute winter	8	435	4.075	0.525	21.8	224.9747	0.0000	SURCHARGED
600 minute winter	8_OUT	360	4.800	1.400	45.8	0.0000	0.0000	OK
15 minute winter	3	14	4.582	0.692	80.7	20.8783	0.0000	SURCHARGED
15 minute winter	4	11	4.589	0.884	96.4	7.2505	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	57.6	0.522	0.501	5.6159	
15 minute summer	2	1.001	7	104.1	0.944	0.907	4.6446	
15 minute winter	5	3.000	6	53.8	0.764	0.842	4.2516	
15 minute winter	6	3.001	7	57.4	0.815	0.898	2.0640	
15 minute winter	7	1.002	8	149.2	2.441	1.287	0.8045	
720 minute winter	8	1.003	8_OUT	45.9	1.177	1.510	1.7245	349.3
15 minute winter	3	2.000	4	65.0	0.923	1.024	3.9504	
15 minute winter	4	2.001	7	66.6	0.946	1.041	2.4131	

Appendix H

EXISTING FOUL WATER



Development Type	Proposed Area/Units		Hours (hrs)	s Water Flow Rate l/day			Peak Factor	Peaked Loading l/s			Development Loading (l/s)
Commercial premises per 100 m sq	82	m sq	12	300	per	property	6.6	0.045833333	per	property	3.758

=

3.8

PROPOSED FOUL WATER

Development Type	Proposed Area/Units		Hours (hrs)	s Water Flow Rate l/day			Peak Factor	Peaked Loading l/s			Development Loading (l/s)
Residential Units	55	property	24	600	per	property	6.6	0.045833333	per	property	2.521

=

2.5

	Dry weather flow (in litres per day)	Daily Discharge (in litres)
General Housing per property	600	4000
School per pupil	80	528
Assembly Hall per seat	10	66
Cinema per seat	10	66
Theatre per seat	10	66
Sports Hall per person	50	330
Hotel per room	550	3630
Guest House per room	200	1320
Motel per room	300	1980
Holiday Apartment per person	150	990
Leisure Park per person	220	1452
Caravan Pk standard per space	250	1650
Caravan Site serviced per space	450	2970
Camping site standard per space	200	1320
Camping site serviced per space	350	2310
Public House per seat	150	990
Restaurant/Day Care Centre per person	270	1782
Drive in restaurant per seat	380	2508
Hospital per bed	750	4950
Nursing/Care Home per bed	375	2475
Offices per 100m sq	750	4950
Shopping Centre per 100m sq	400	2640
Warehouse per 100m sq	150	990
Commercial premises per 100 m sq	300	1980
Manufacturing unit per 100m sq	550	3630

Appendix I

**C753 SIMPLE INDEX TREATMENT
METHOD**
Sep 2025

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/industrial roofs)	Low	0.3	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, home zones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g. hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (e.g. haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

Table 1: Pollution hazard indices for different land use classifications
(land use in bold applicable for the development).

Type of SuDS component	Mitigation indices		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bio retention system (i.e. raingardens)	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8
Green/Blue Roof (similar to Bio retention system)	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Table 2: Indicative SuDS mitigation indices for discharges to surface waters
(bold text is applicable to this development).

**C753 SIMPLE INDEX TREATMENT
METHOD****Sep 2025**

For surface water discharge from Residential Parking Areas and Low Traffic Roads <300 traffic movements/day			
	Required mitigation indices		
Source	TSS	Metals	Hydrocarbons
Low	0.5	0.4	0.4
Type of SuDS component provided			
Permeable pavement	0.7	0.6	0.7
Total	0.7	0.6	0.7
Check	+0.2	+0.2	+0.3

Table 3: SuDS mitigation indices provided

Appendix J

SuDS Element	Permeable Paving	
Maintenance Period	Maintenance Task	Frequency
Regular Maintenance	Brushing and vacuuming	Once a year or as required
Occasional Maintenance	Stabilise and mow contributing adjacent area	As required
	Removal of weed or management using glyphosate applied directly into weeds by an applicator rather than spraying	As required
	Remediate any landscaping which 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 structural performance or a hazard to users.	As required
Monitoring	Rehabilitation of surface or upper structure by remedial sweeping	Every 10 to 15 years, or as required
	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Monthly for three months, 48hrs after large storms in first 6 months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 1: SuDS Operation and Maintenance Requirements – Permeable Paving

SUDS Element	Attenuation Tank	
Maintenance Period	Maintenance Task	Frequency
Maintenance Work	Inspect and identify any areas 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 risk to performance)	Monthly
	Remove sediment from pre-treatment structures and/or internal forebays.	Annually, or as required
Remedial Work	Repair/rehabilitate inlets, outlets, 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.

Table 2: SuDS Operation and Maintenance Requirements - Attenuation Tank

SUDS Element	Inlets, Outlets, Controls And Inspection Chambers	
Maintenance Period	Maintenance Task	Frequency
Regular Maintenance	Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage.	Monthly
	Strim vegetation 1m min. surround to structures and keep hard aprons free from silt and debris	Monthly
	Remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn	Annually
Occasional Maintenance	Check topsoil levels are 20mm above edges of baskets and chambers to avoid mower damage	As necessary
Remedial work	Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary.	As required
	Repair physical damage if necessary.	As required

Table 3: SuDS Operation and Maintenance Requirements - Basins, Ponds & Wetlands

Appendix K

Flood risk assessment data



Location of site: 471466 / 98843 (shown as easting and northing coordinates)

Document created on: 10 September 2025

This information was previously known as a product 4.

Customer reference number: 995EM76AMGF2

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods
- flood defences and attributes
- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Hampshire County.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Hayling Island 2018 - East Solent Model

Scenario(s): Defended tidal, defences removed tidal, defended climate change tidal, defences removed climate change tidal

Date: 1 July 2018

This model contains the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

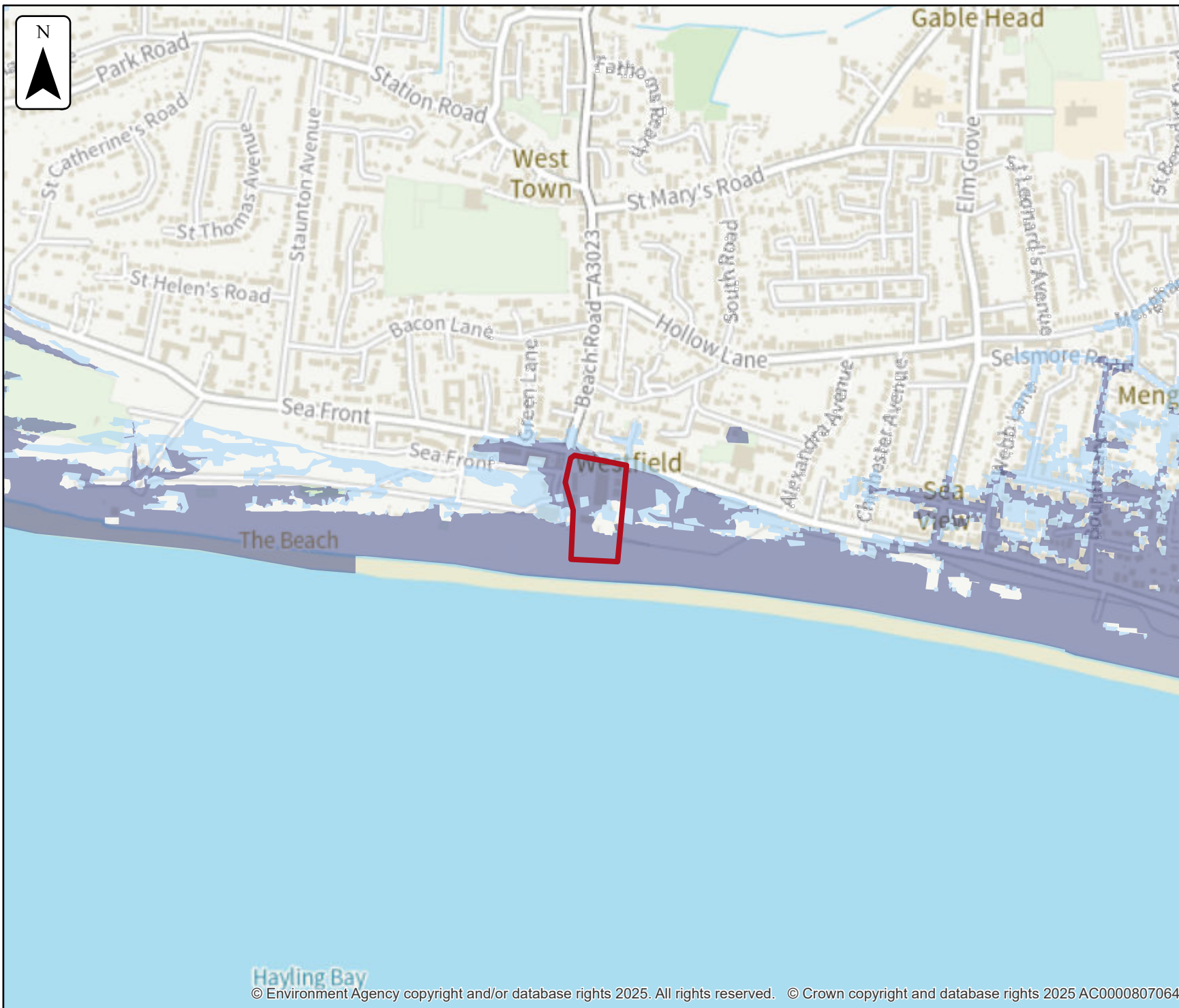
- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



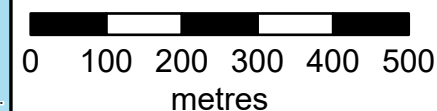
Flood map for planning

Location (easting/northing)
471466/98843

Scale
1:10,000

Created
10 Sep 2025

-  Selected area
-  Flood Zone 3
-  Flood Zone 2



Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Hampshire County Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



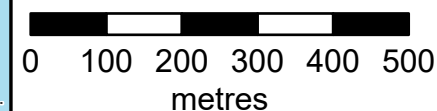
Past floods

Location (easting/northing)
471466/98843

Scale
1:10,000

Created
10 Sep 2025

-  Selected area
-  Main river
- Date of flood event
 November, 2005



Hayling Bay

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Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
3 November 2005	3 November 2005	sea	overtopping of defences	No

Flood defences and attributes

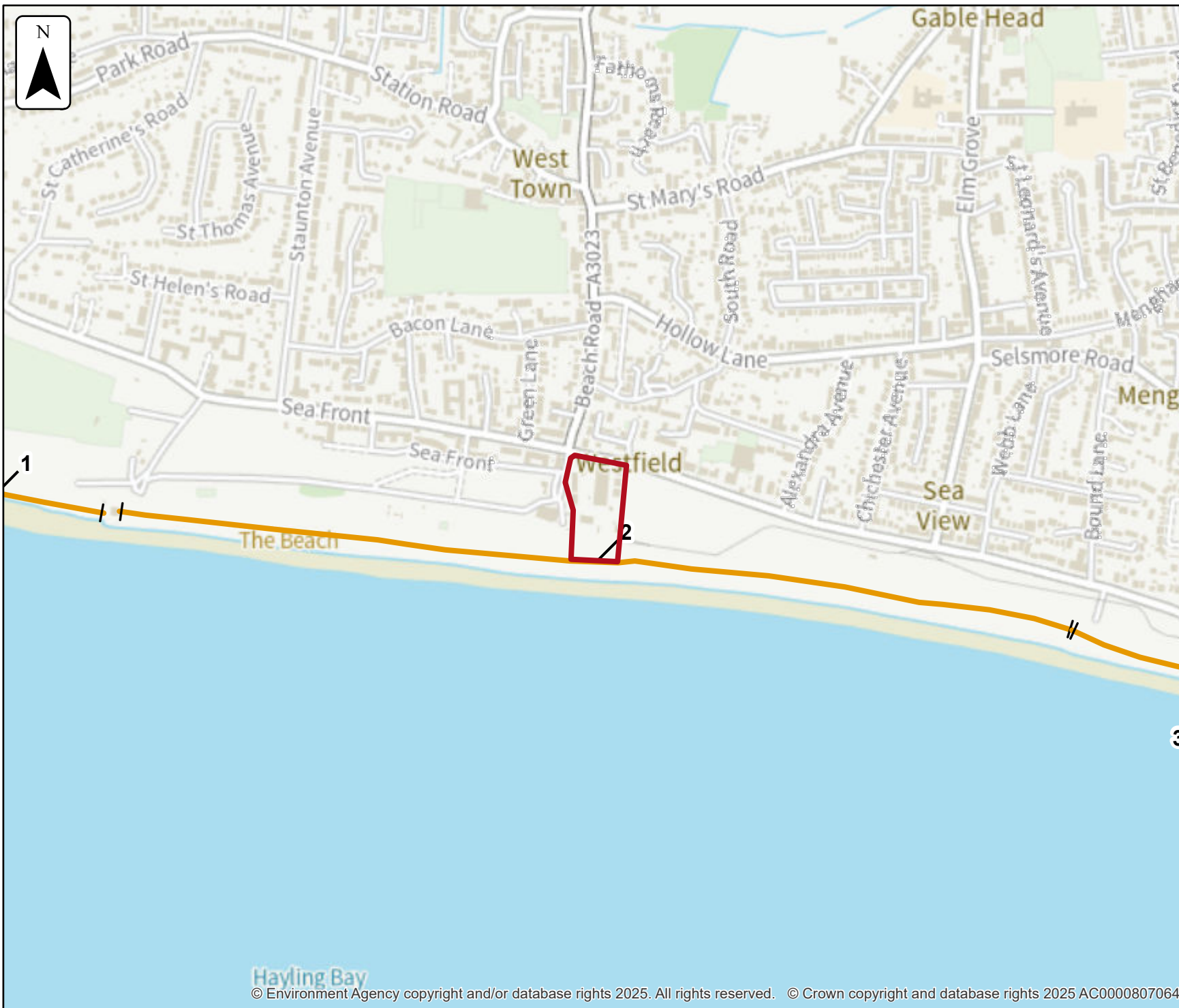
The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk



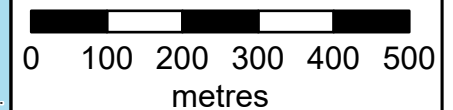
Flood defences

Location (easting/northing)
471466/98843

Scale
1:10,000

Created
10 Sep 2025

-  Selected area
-  Main river
-  Flood defence



Hayling Bay

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Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	470211	Beach					4.50
2	470240	Embankment					5.0
3	470243	Embankment					5.50

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

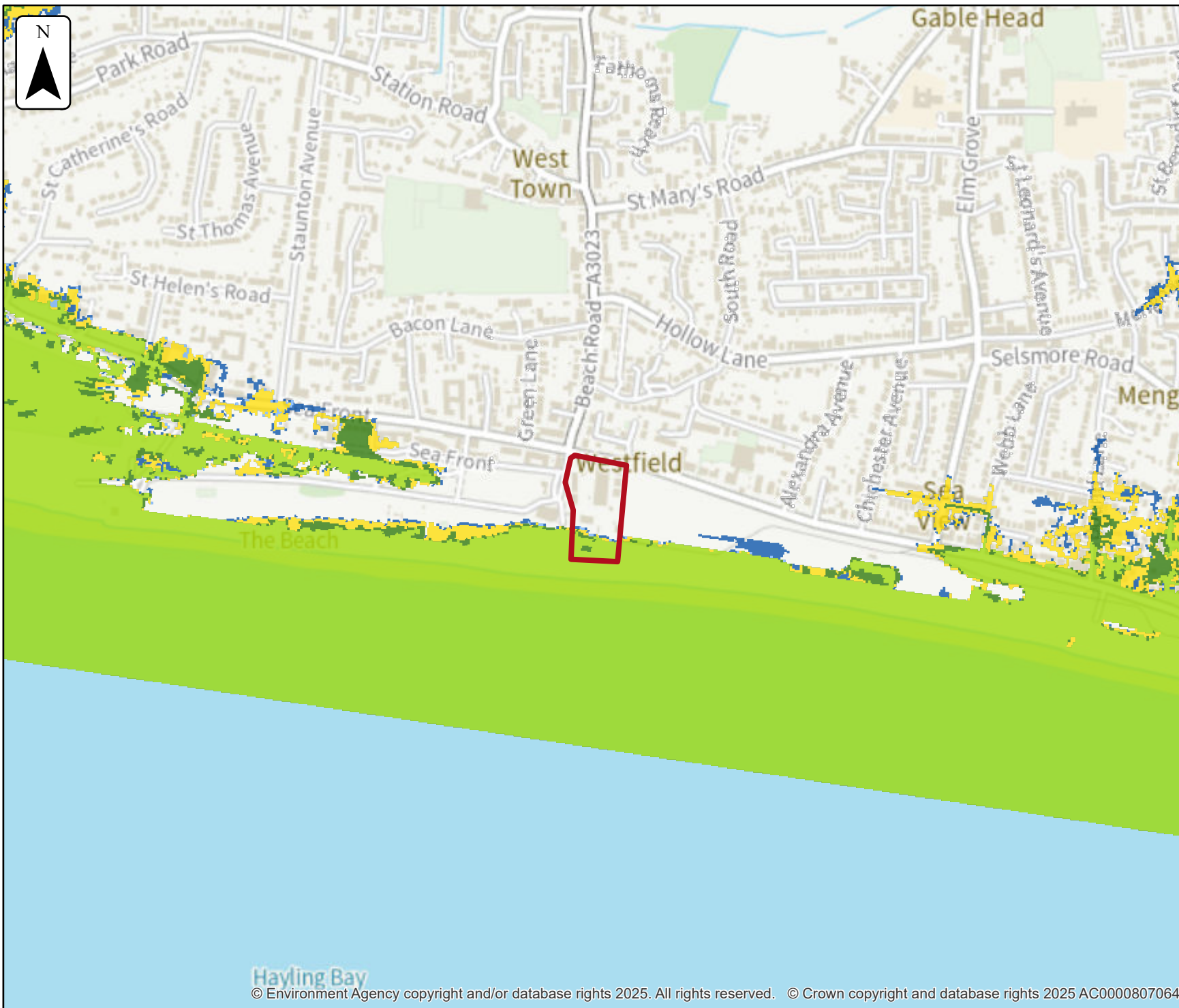
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- Defended modelled tidal: risk of flooding from the sea where there are flood defences
- Defences removed modelled tidal: risk of flooding from the sea where flood defences have been removed
- Defended climate change modelled tidal: risk of flooding from the sea where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled tidal: risk of flooding from the sea where flood defences have been removed, including estimated impact of climate change



Defences removed climate change modelled tidal extent

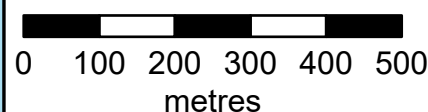
Location (easting/northing)
471466/98843

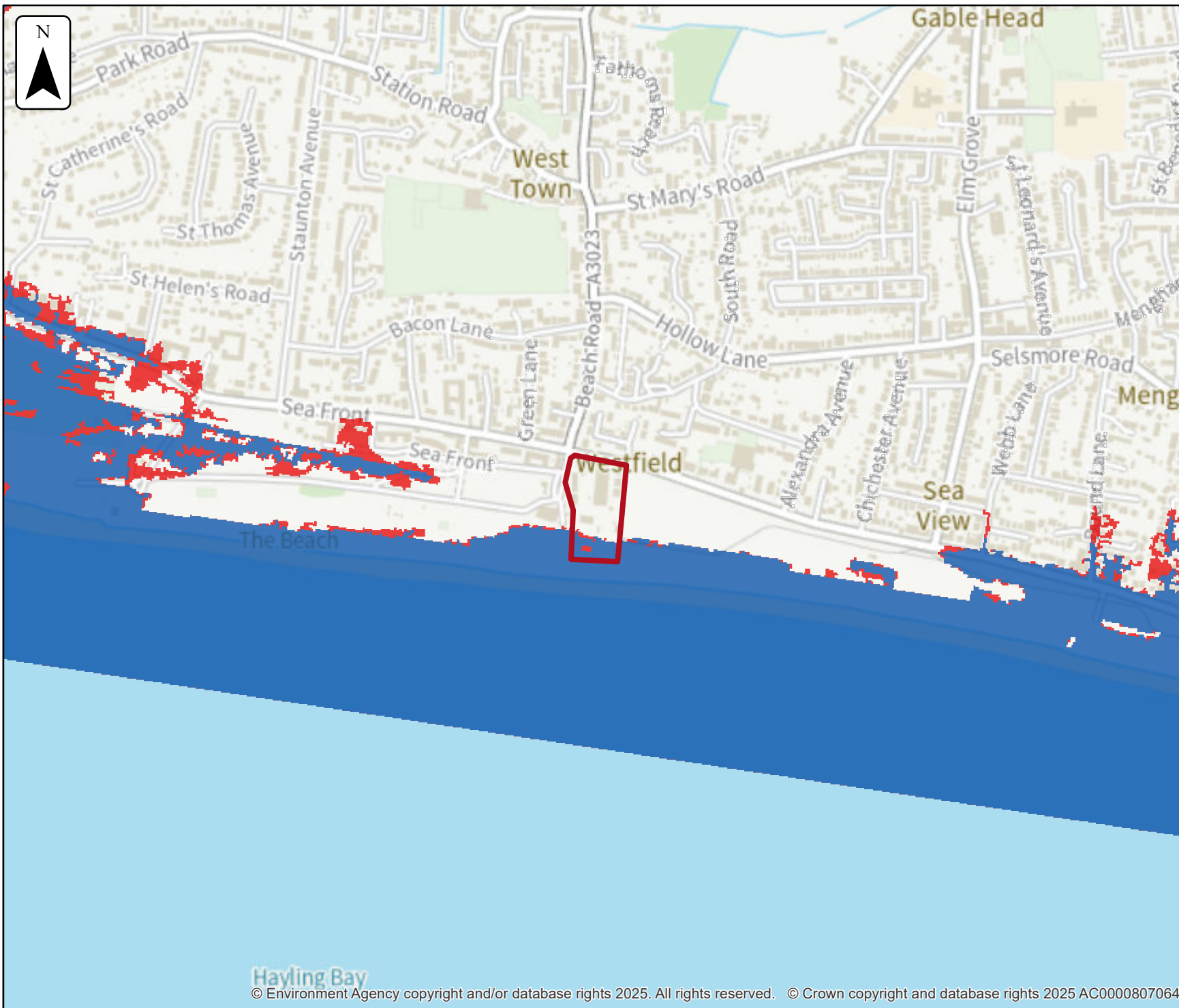
Scale Created
1:10,000 10 Sep 2025

Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river
- Modelled flood extent
 -  0.5% AEP (+90mm)
 -  0.5% AEP (+320mm)
 -  0.5% AEP (+744mm)
 -  0.1% AEP (+320mm)
 -  0.1% AEP (+744mm)

Flood extents may not be
visible where they overlap
other return periods





Defences removed modelled tidal extent

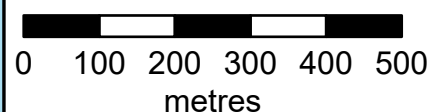
Location (easting/northing)
471466/98843

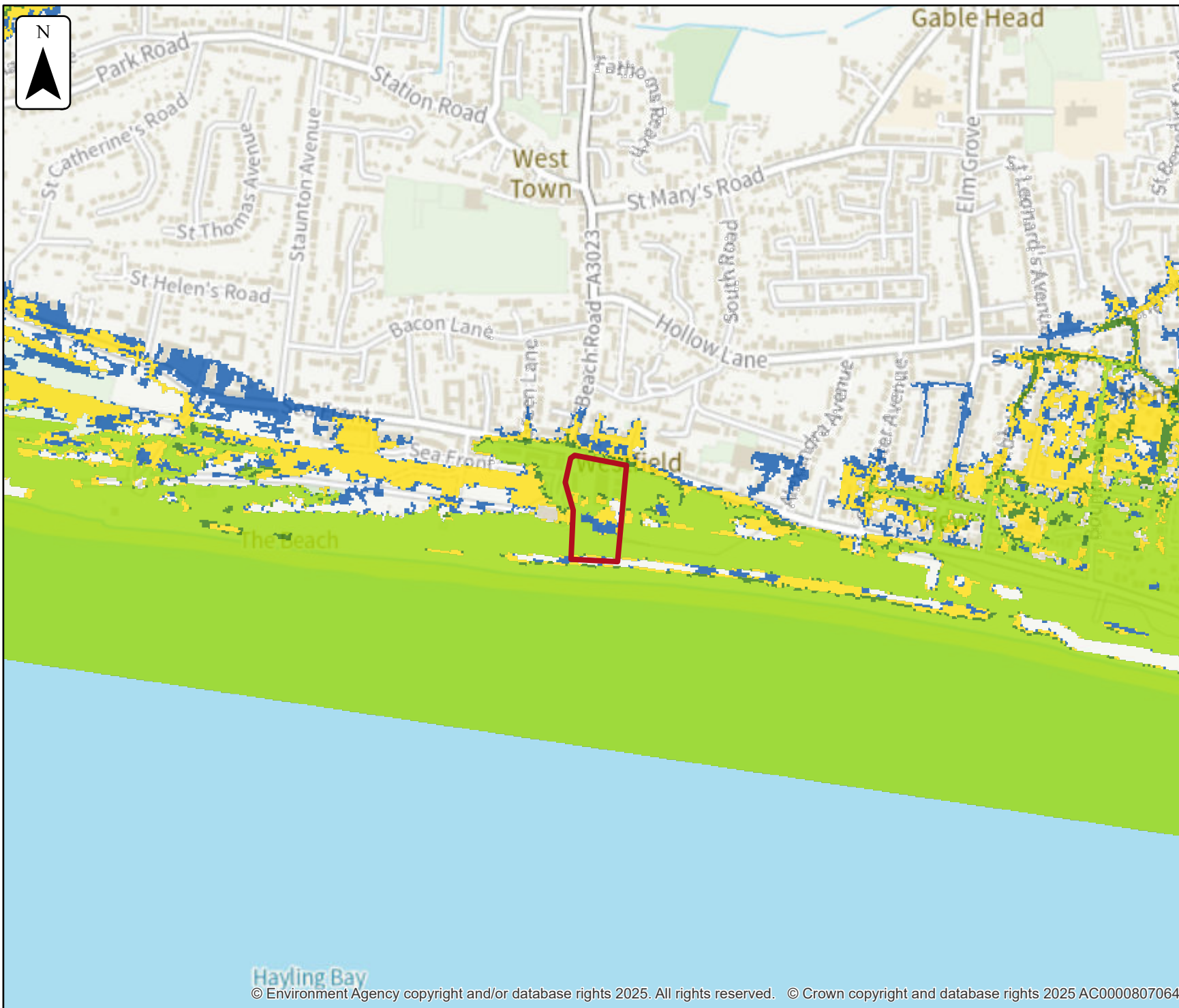
Scale Created
1:10,000 10 Sep 2025

Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river
- Modelled flood extent
 -  0.5% AEP
 -  0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





**Defended
climate change
modelled tidal extent**

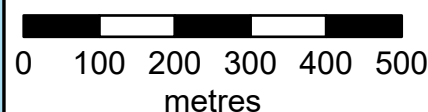
Location (easting/northing)
471466/98843

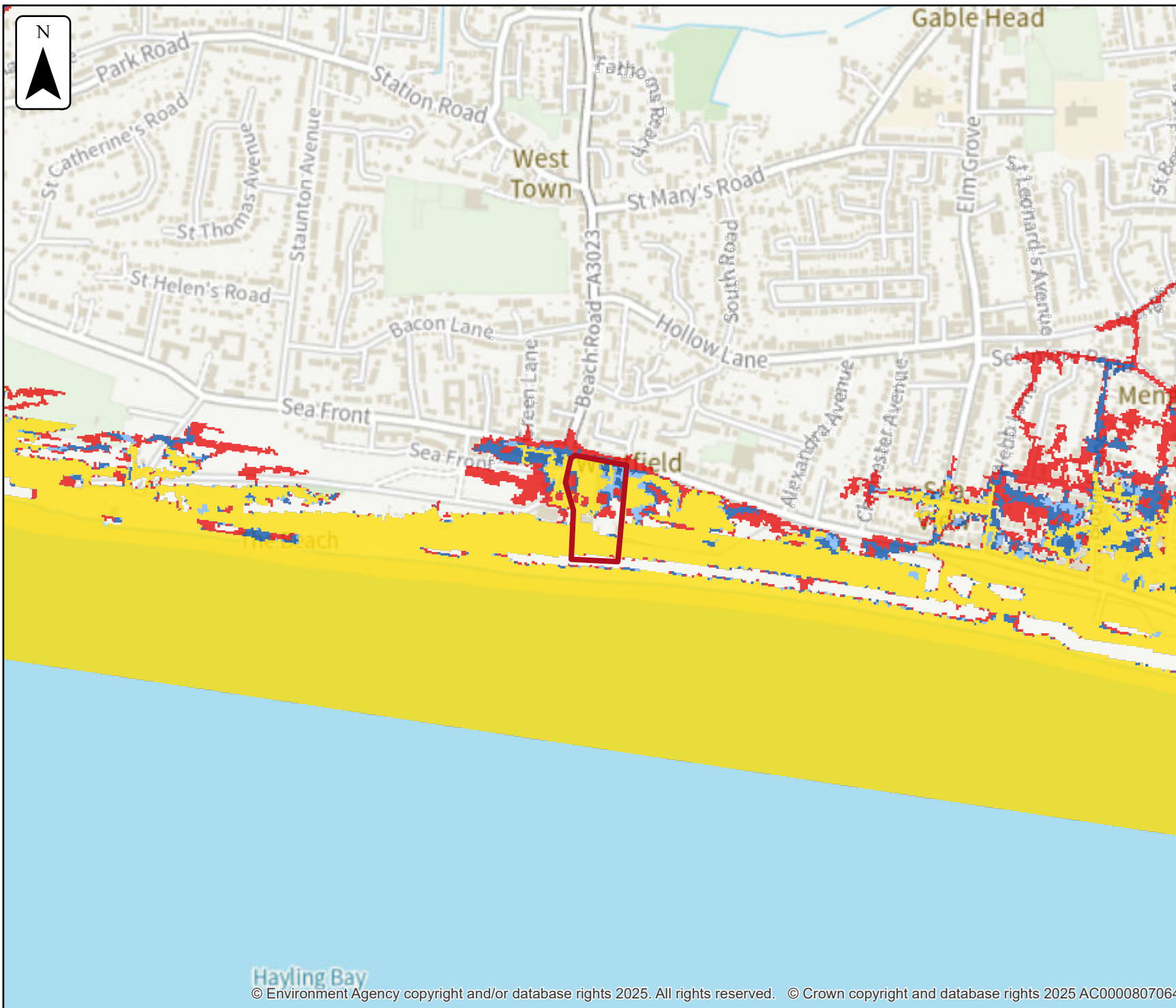
Scale Created
1:10,000 10 Sep 2025

Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river
- Modelled flood extent
 -  0.5% AEP (+90mm)
 -  0.5% AEP (+320mm)
 -  0.5% AEP (+744mm)
 -  0.1% AEP (+320mm)
 -  0.1% AEP (+744mm)

Flood extents may not be
visible where they overlap
other return periods





Defended modelled tidal extent

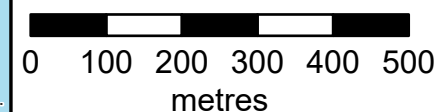
Location (easting/northing)
471466/98843

Scale Created
1:10,000 10 Sep 2025

Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river
- Modelled flood extent
 -  1.33% AEP
 -  1% AEP
 -  0.5% AEP
 -  0.1% AEP

Flood extents may not be
visible where they overlap
other return periods



Hayling Bay

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Defended modelled tidal extent and height

Location (easting/northing)
471466/98843

Scale Created
1:2,500 10 Sep 2025

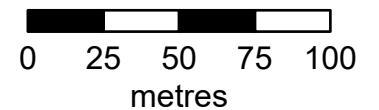
Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  0 - 1.125
-  1.125 - 2.25
-  2.25 - 3.375
-  3.375 - 4.5
-  4.5 - 5.625
-  5.625 - 6.75
-  6.75 - 7.875
-  7.875 - 9.0
-  9.0 - 10.125

This map shows the
0.1% AEP height data



Sample point data

Defended

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height
1	471401	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	471439	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	471477	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	471515	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	471401	98770	NoData	4.88	4.90	4.94	NoData	4.97	NoData	5.02
6	471439	98770	NoData	4.88	4.90	4.94	NoData	4.97	NoData	5.02
7	471477	98770	NoData	4.88	4.90	4.94	NoData	4.97	NoData	5.03
8	471515	98770	NoData	4.89	4.90	4.94	NoData	4.98	NoData	5.03
9	471401	98808	NoData	4.88	4.90	4.94	NoData	4.97	NoData	5.02
10	471439	98808	NoData	4.88	4.90	4.94	NoData	4.97	NoData	5.02
11	471477	98808	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	471515	98808	NoData	4.89	4.90	4.94	NoData	4.98	NoData	5.04

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height
13	471401	98846	NoData	4.72	4.73	4.76	NoData	4.77	NoData	4.98
14	471439	98846	NoData	4.81	4.82	4.85	NoData	4.88	NoData	4.98
15	471477	98846	NoData	NoData	NoData	NoData	NoData	4.86	NoData	4.98
16	471515	98846	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
17	471401	98884	NoData	4.02	4.02	4.16	NoData	4.50	NoData	4.98
18	471439	98884	NoData	3.83	3.85	4.16	NoData	4.50	NoData	4.98
19	471477	98884	NoData	NoData	NoData	4.16	NoData	4.50	NoData	4.98
20	471515	98884	NoData	NoData	NoData	NoData	NoData	4.50	NoData	4.98
21	471401	98922	NoData	NoData	NoData	NoData	NoData	4.50	NoData	4.98
22	471439	98922	NoData	3.79	3.85	4.16	NoData	4.50	NoData	4.98
23	471477	98922	NoData	NoData	NoData	NoData	NoData	4.50	NoData	4.98
24	471515	98922	NoData	NoData	NoData	NoData	NoData	4.50	NoData	4.98

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height
25	471439	98960	NoData	NoData	NoData	NoData	NoData	NoData	NoData	4.98
Max value in selected area:			NoData	4.89	4.90	4.94	NoData	4.98	NoData	5.04

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	471401	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	471439	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	471477	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	471515	98732	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	471401	98770	NoData	0.85	0.86	0.90	NoData	0.93	NoData	0.99
6	471439	98770	NoData	0.75	0.76	0.80	NoData	0.83	NoData	0.89
7	471477	98770	NoData	0.70	0.71	0.76	NoData	0.79	NoData	0.84
8	471515	98770	NoData	0.83	0.84	0.89	NoData	0.92	NoData	0.98
9	471401	98808	NoData	0.30	0.31	0.36	NoData	0.39	NoData	0.44
10	471439	98808	NoData	0.34	0.35	0.39	NoData	0.42	NoData	0.48
11	471477	98808	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	471515	98808	NoData	0.09	0.10	0.15	NoData	0.18	NoData	0.24

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
13	471401	98846	NoData	0.04	0.05	0.07	NoData	0.09	NoData	0.29
14	471439	98846	NoData	0.03	0.03	0.06	NoData	0.09	NoData	0.19
15	471477	98846	NoData	NoData	NoData	NoData	NoData	0.05	NoData	0.17
16	471515	98846	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
17	471401	98884	NoData	0.01	0.01	0.15	NoData	0.49	NoData	0.97
18	471439	98884	NoData	0.03	0.04	0.36	NoData	0.70	NoData	1.18
19	471477	98884	NoData	NoData	NoData	0.04	NoData	0.38	NoData	0.86
20	471515	98884	NoData	NoData	NoData	NoData	NoData	0.26	NoData	0.74
21	471401	98922	NoData	NoData	NoData	NoData	NoData	0.64	NoData	1.12
22	471439	98922	NoData	0.15	0.21	0.52	NoData	0.86	NoData	1.34
23	471477	98922	NoData	NoData	NoData	NoData	NoData	0.31	NoData	0.79
24	471515	98922	NoData	NoData	NoData	NoData	NoData	0.27	NoData	0.75

Label	Easting	Northing	10% AEP	4% AEP	3.33% AEP	1.33% AEP	1% AEP	0.5% AEP	0.2% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
25	471439	98960	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.10
Max value in selected area:			NoData	0.89	0.91	0.95	NoData	0.98	NoData	1.39

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Defences removed modelled tidal extent and height

Location (easting/northing)
471466/98843

Scale Created
1:2,500 10 Sep 2025

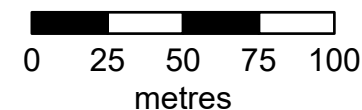
Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  0 - 1.125
-  1.125 - 2.25
-  2.25 - 3.375
-  3.375 - 4.5
-  4.5 - 5.625
-  5.625 - 6.75
-  6.75 - 7.875
-  7.875 - 9.0
-  9.0 - 10.125

This map shows the
0.1% AEP height data



Sample point data

Defences removed

Label	Easting	Northing	0.5% AEP	0.1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Depth	Depth
1	471401	98732	NoData	NoData	NoData	NoData
2	471439	98732	NoData	3.47	NoData	0.12
3	471477	98732	NoData	3.47	NoData	0.08
4	471515	98732	NoData	3.47	NoData	0.03
5	471401	98770	NoData	NoData	NoData	NoData
6	471439	98770	NoData	NoData	NoData	NoData
7	471477	98770	NoData	NoData	NoData	NoData
8	471515	98770	NoData	NoData	NoData	NoData
9	471401	98808	NoData	NoData	NoData	NoData
10	471439	98808	NoData	NoData	NoData	NoData
11	471477	98808	NoData	NoData	NoData	NoData
12	471515	98808	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP	0.1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Depth	Depth
13	471401	98846	NoData	NoData	NoData	NoData
14	471439	98846	NoData	NoData	NoData	NoData
15	471477	98846	NoData	NoData	NoData	NoData
16	471515	98846	NoData	NoData	NoData	NoData
17	471401	98884	NoData	NoData	NoData	NoData
18	471439	98884	NoData	NoData	NoData	NoData
19	471477	98884	NoData	NoData	NoData	NoData
20	471515	98884	NoData	NoData	NoData	NoData
21	471401	98922	NoData	NoData	NoData	NoData
22	471439	98922	NoData	NoData	NoData	NoData
23	471477	98922	NoData	NoData	NoData	NoData
24	471515	98922	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP	0.1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Depth	Depth
25	471439	98960	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	NoData	NoData	NoData

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



**Defended
climate change
modelled tidal
extent and height**

Location (easting/northing)
471466/98843

Scale Created
1:2,500 10 Sep 2025

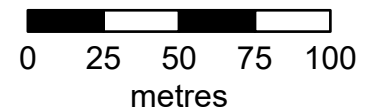
Model name
**Hayling Island 2018
East Solent Model**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  0 - 1.125
-  1.125 - 2.25
-  2.25 - 3.375
-  3.375 - 4.5
-  4.5 - 5.625
-  5.625 - 6.75
-  6.75 - 7.875
-  7.875 - 9.0
-  9.0 - 10.125

This map shows the
0.1% AEP +744mm height data



Sample point data

Defended climate change

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
1	471401	98732	NoData	NoData	4.05	NoData	4.24
2	471439	98732	NoData	NoData	4.05	3.79	4.22
3	471477	98732	NoData	NoData	NoData	NoData	4.22
4	471515	98732	NoData	NoData	NoData	NoData	NoData
5	471401	98770	4.98	5.00	NoData	NoData	5.19
6	471439	98770	4.99	5.00	NoData	NoData	5.20
7	471477	98770	4.99	5.01	NoData	NoData	5.20
8	471515	98770	4.99	5.01	NoData	NoData	5.21
9	471401	98808	4.98	5.00	NoData	NoData	5.19
10	471439	98808	4.99	5.00	NoData	NoData	5.20
11	471477	98808	NoData	NoData	NoData	NoData	5.21
12	471515	98808	5.00	5.01	NoData	NoData	5.22

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
13	471401	98846	4.78	4.83	NoData	NoData	5.22
14	471439	98846	4.89	4.90	NoData	NoData	5.21
15	471477	98846	4.87	4.88	NoData	NoData	5.22
16	471515	98846	NoData	NoData	NoData	NoData	NoData
17	471401	98884	4.64	4.83	NoData	NoData	5.22
18	471439	98884	4.64	4.83	NoData	NoData	5.22
19	471477	98884	4.64	4.83	NoData	NoData	5.22
20	471515	98884	4.64	4.83	NoData	NoData	5.22
21	471401	98922	4.64	4.83	NoData	NoData	5.22
22	471439	98922	4.64	4.83	NoData	NoData	5.22
23	471477	98922	4.64	4.83	NoData	NoData	5.22
24	471515	98922	4.64	4.83	NoData	NoData	5.22

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
25	471439	98960	NoData	NoData	NoData	NoData	5.22
Max value in selected area:			5.00	5.01	NoData	NoData	5.22

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended climate change

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
1	471401	98732	NoData	NoData	0.22	NoData	0.40
2	471439	98732	NoData	NoData	0.24	0.13	0.41
3	471477	98732	NoData	NoData	NoData	NoData	0.06
4	471515	98732	NoData	NoData	NoData	NoData	NoData
5	471401	98770	0.95	0.97	NoData	NoData	1.16
6	471439	98770	0.85	0.87	NoData	NoData	1.06
7	471477	98770	0.81	0.82	NoData	NoData	1.02
8	471515	98770	0.94	0.95	NoData	NoData	1.16
9	471401	98808	0.40	0.42	NoData	NoData	0.61
10	471439	98808	0.44	0.46	NoData	NoData	0.65
11	471477	98808	NoData	NoData	NoData	NoData	0.04
12	471515	98808	0.20	0.22	NoData	NoData	0.43

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
13	471401	98846	0.10	0.14	NoData	NoData	0.53
14	471439	98846	0.10	0.11	NoData	NoData	0.42
15	471477	98846	0.06	0.07	NoData	NoData	0.40
16	471515	98846	NoData	NoData	NoData	NoData	NoData
17	471401	98884	0.63	0.81	NoData	NoData	1.20
18	471439	98884	0.84	1.02	NoData	NoData	1.41
19	471477	98884	0.53	0.71	NoData	NoData	1.10
20	471515	98884	0.40	0.59	NoData	NoData	0.98
21	471401	98922	0.78	0.97	NoData	NoData	1.36
22	471439	98922	1.00	1.18	NoData	NoData	1.58
23	471477	98922	0.45	0.64	NoData	NoData	1.03
24	471515	98922	0.41	0.60	NoData	NoData	0.99

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
25	471439	98960	NoData	NoData	NoData	NoData	0.34
Max value in selected area:			1.05	1.23	NoData	NoData	1.62

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



**Defences removed
climate change
modelled tidal
extent and height**

Location (easting/northing)
471466/98843

Scale Created
1:2,500 10 Sep 2025

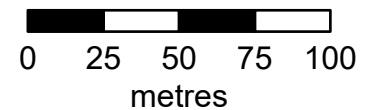
Model name
**Emsworth to
Littlehampton Model**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  0 - 1.125
-  1.125 - 2.25
-  2.25 - 3.375
-  3.375 - 4.5
-  4.5 - 5.625
-  5.625 - 6.75
-  6.75 - 7.875
-  7.875 - 9.0
-  9.0 - 10.125

This map shows the
0.5% AEP +1099mm height data



Sample point data

Defences removed climate change

Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Height	Height	Height	Height
1	471401	98732	NoData	NoData	NoData	4.41
2	471439	98732	NoData	NoData	NoData	NoData
3	471477	98732	NoData	NoData	NoData	NoData
4	471515	98732	NoData	NoData	NoData	NoData
5	471401	98770	NoData	NoData	NoData	NoData
6	471439	98770	NoData	NoData	NoData	NoData
7	471477	98770	NoData	NoData	NoData	NoData
8	471515	98770	NoData	NoData	NoData	NoData
9	471401	98808	NoData	NoData	NoData	NoData
10	471439	98808	NoData	NoData	NoData	NoData
11	471477	98808	NoData	NoData	NoData	NoData
12	471515	98808	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Height	Height	Height	Height
13	471401	98846	NoData	NoData	NoData	NoData
14	471439	98846	NoData	NoData	NoData	NoData
15	471477	98846	NoData	NoData	NoData	NoData
16	471515	98846	NoData	NoData	NoData	NoData
17	471401	98884	NoData	NoData	NoData	NoData
18	471439	98884	NoData	NoData	NoData	NoData
19	471477	98884	NoData	NoData	NoData	NoData
20	471515	98884	NoData	NoData	NoData	NoData
21	471401	98922	NoData	NoData	NoData	NoData
22	471439	98922	NoData	NoData	NoData	NoData
23	471477	98922	NoData	NoData	NoData	NoData
24	471515	98922	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Height	Height	Height	Height
25	471439	98960	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	NoData	NoData	NoData

Data in this table comes from the Emsworth to Littlehampton Model - Chichester Harbour (2016) model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defences removed climate change

Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Depth	Depth	Depth	Depth
1	471401	98732	NoData	NoData	NoData	0.39
2	471439	98732	NoData	NoData	NoData	NoData
3	471477	98732	NoData	NoData	NoData	NoData
4	471515	98732	NoData	NoData	NoData	NoData
5	471401	98770	NoData	NoData	NoData	NoData
6	471439	98770	NoData	NoData	NoData	NoData
7	471477	98770	NoData	NoData	NoData	NoData
8	471515	98770	NoData	NoData	NoData	NoData
9	471401	98808	NoData	NoData	NoData	NoData
10	471439	98808	NoData	NoData	NoData	NoData
11	471477	98808	NoData	NoData	NoData	NoData
12	471515	98808	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Depth	Depth	Depth	Depth
13	471401	98846	NoData	NoData	NoData	NoData
14	471439	98846	NoData	NoData	NoData	NoData
15	471477	98846	NoData	NoData	NoData	NoData
16	471515	98846	NoData	NoData	NoData	NoData
17	471401	98884	NoData	NoData	NoData	NoData
18	471439	98884	NoData	NoData	NoData	NoData
19	471477	98884	NoData	NoData	NoData	NoData
20	471515	98884	NoData	NoData	NoData	NoData
21	471401	98922	NoData	NoData	NoData	NoData
22	471439	98922	NoData	NoData	NoData	NoData
23	471477	98922	NoData	NoData	NoData	NoData
24	471515	98922	NoData	NoData	NoData	NoData

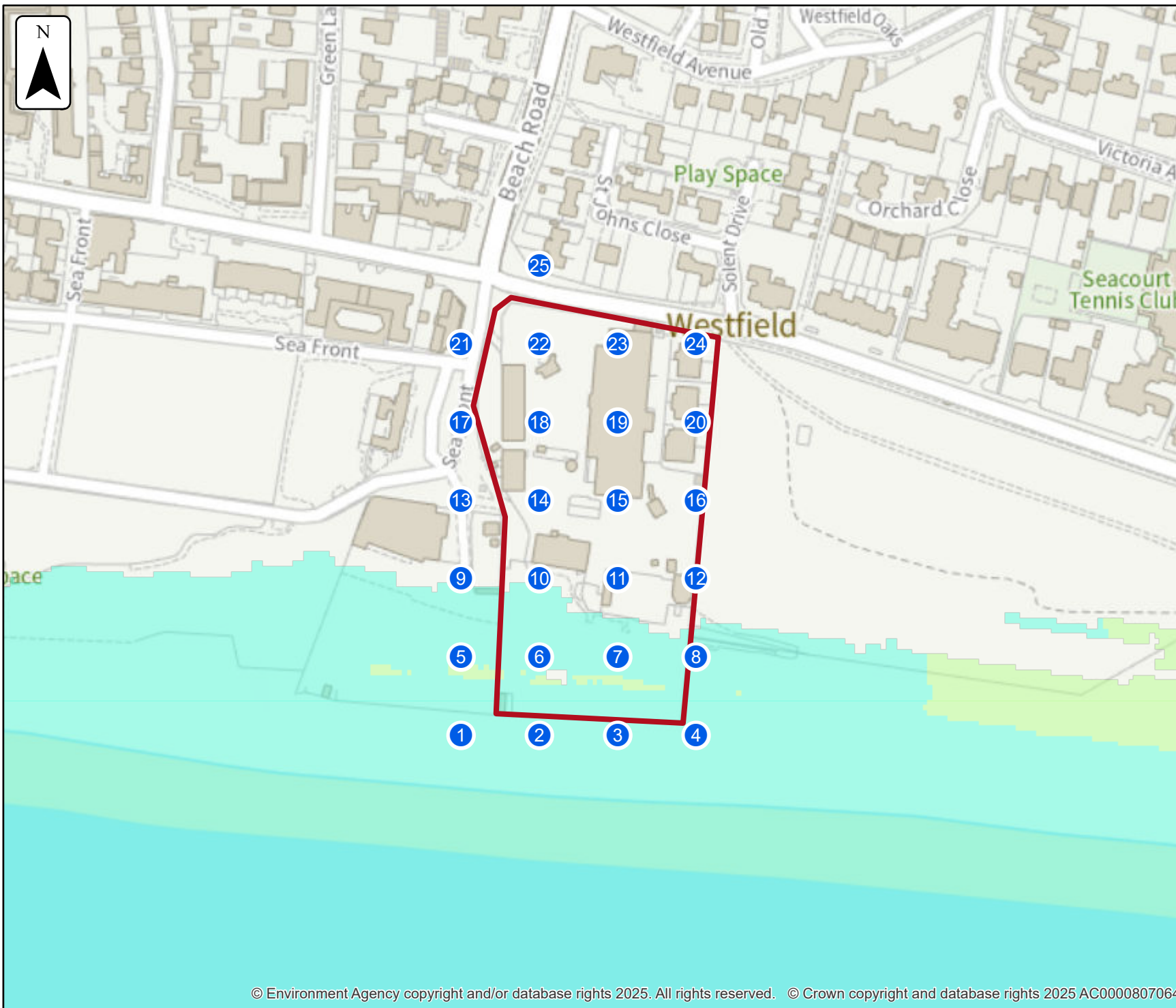
Label	Easting	Northing	0.5% AEP (+363mm)	0.5% AEP (+489mm)	0.5% AEP (+750mm)	0.5% AEP (+1099mm)
			Depth	Depth	Depth	Depth
25	471439	98960	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	NoData	NoData	NoData

Data in this table comes from the Emsworth to Littlehampton Model - Chichester Harbour (2016) model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Defences removed climate change modelled tidal extent and height

Location (easting/northing)
471466/98843

Scale Created
1:2,500 10 Sep 2025

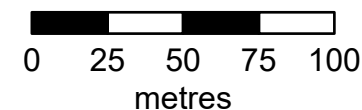
Model name
**Hayling Island 2018
East Solent Model**

- Selected area
- Main river

Modelled 2D grid
Water level in mAOD

- 0 - 1.125
- 1.125 - 2.25
- 2.25 - 3.375
- 3.375 - 4.5
- 4.5 - 5.625
- 5.625 - 6.75
- 6.75 - 7.875
- 7.875 - 9.0
- 9.0 - 10.125

This map shows the
0.1% AEP +744mm height data



Sample point data

Defences removed climate change

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
1	471401	98732	NoData	3.63	4.04	3.79	4.21
2	471439	98732	3.39	3.64	4.04	3.79	4.22
3	471477	98732	3.39	3.69	4.05	3.79	4.22
4	471515	98732	3.40	3.72	4.05	3.79	4.22
5	471401	98770	NoData	4.26	4.35	NoData	4.21
6	471439	98770	NoData	4.27	4.35	NoData	4.22
7	471477	98770	NoData	4.27	4.34	NoData	4.22
8	471515	98770	NoData	4.26	4.32	NoData	4.22
9	471401	98808	NoData	NoData	NoData	NoData	NoData
10	471439	98808	NoData	NoData	NoData	NoData	NoData
11	471477	98808	NoData	NoData	NoData	NoData	NoData
12	471515	98808	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
13	471401	98846	NoData	NoData	NoData	NoData	NoData
14	471439	98846	NoData	NoData	NoData	NoData	NoData
15	471477	98846	NoData	NoData	NoData	NoData	NoData
16	471515	98846	NoData	NoData	NoData	NoData	NoData
17	471401	98884	NoData	NoData	NoData	NoData	NoData
18	471439	98884	NoData	NoData	NoData	NoData	NoData
19	471477	98884	NoData	NoData	NoData	NoData	NoData
20	471515	98884	NoData	NoData	NoData	NoData	NoData
21	471401	98922	NoData	NoData	NoData	NoData	NoData
22	471439	98922	NoData	NoData	NoData	NoData	NoData
23	471477	98922	NoData	NoData	NoData	NoData	NoData
24	471515	98922	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Height	Height	Height	Height	Height
25	471439	98960	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	4.43	4.45	3.79	4.22

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defences removed climate change

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
1	471401	98732	NoData	0.08	0.49	0.24	0.66
2	471439	98732	0.05	0.30	0.70	0.44	0.87
3	471477	98732	0.02	0.29	0.66	0.40	0.82
4	471515	98732	0.00	0.28	0.61	0.35	0.78
5	471401	98770	NoData	0.23	0.32	NoData	0.18
6	471439	98770	NoData	0.13	0.22	NoData	0.08
7	471477	98770	NoData	0.09	0.16	NoData	0.04
8	471515	98770	NoData	0.21	0.27	NoData	0.16
9	471401	98808	NoData	NoData	NoData	NoData	NoData
10	471439	98808	NoData	NoData	NoData	NoData	NoData
11	471477	98808	NoData	NoData	NoData	NoData	NoData
12	471515	98808	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
13	471401	98846	NoData	NoData	NoData	NoData	NoData
14	471439	98846	NoData	NoData	NoData	NoData	NoData
15	471477	98846	NoData	NoData	NoData	NoData	NoData
16	471515	98846	NoData	NoData	NoData	NoData	NoData
17	471401	98884	NoData	NoData	NoData	NoData	NoData
18	471439	98884	NoData	NoData	NoData	NoData	NoData
19	471477	98884	NoData	NoData	NoData	NoData	NoData
20	471515	98884	NoData	NoData	NoData	NoData	NoData
21	471401	98922	NoData	NoData	NoData	NoData	NoData
22	471439	98922	NoData	NoData	NoData	NoData	NoData
23	471477	98922	NoData	NoData	NoData	NoData	NoData
24	471515	98922	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	0.5% AEP (+90mm)	0.5% AEP (+320mm)	0.5% AEP (+744mm)	0.1% AEP (+320mm)	0.1% AEP (+744mm)
			Depth	Depth	Depth	Depth	Depth
25	471439	98960	NoData	NoData	NoData	NoData	NoData
Max value in selected area:			NoData	0.28	0.43	0.16	0.58

Data in this table comes from the Hayling Island 2018 - East Solent Model model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Hampshire County.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Solent and South Downs Environment Agency team at ssdenquiries@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

Appendix L

FLOOD RESPONSE PLAN

Hayling Island, Fair Development

Sep 2025

FLOODING IS IN PROGRESS

If the reader is referring to this plan because flooding is in progress without a flood warning at or near the site:

- Move all people, pets, important belongings and your “emergency grab bag”¹ upstairs where emergency refuge is provided;
- Turn off gas, electricity and water supplies if safe to do so;
- Await further information from the emergency services or via local radio; and,
- Do not walk or drive through flood water, unless directed to by Emergency Services; 150 mm of fast flowing water can knock you over and 600mm of water will float your car.

ENVIRONMENT AGENCY FLOOD ZONES

ACCESS AND EGRESS ROUTES

The diagram overleaf outlines access and egress routes in the event of flooding at the site.



The upper floors of the development are designed to serve as an emergency refuge during an extreme flood event. However, if instructed by the Emergency Services to evacuate, it is strongly advised that you evacuate. The area could remain inundated for several days following an extreme flood event.

ENVIRONMENT AGENCY FLOOD WARNING CODES

The Environment Agency operates three levels of flood warnings as summarised below:

FLOOD ALERT
Flooding is possible. Be prepared.
FLOOD WARNING
Flooding is expected. Act Now.
SEVERE FLOOD WARNING
Severe flooding. Danger to life. Action Needed.

Evacuation Route

During a flood event, safe refuge is available within the upper floors of the development.

Safe dry access and egress is available if evacuating **before** flooding has started. It is recommended that occupants head north, then immediately turn west onto Sea Front Road before continuing north to a safe location.

An offsite refuge will be confirmed by emergency services during an event of a flood.

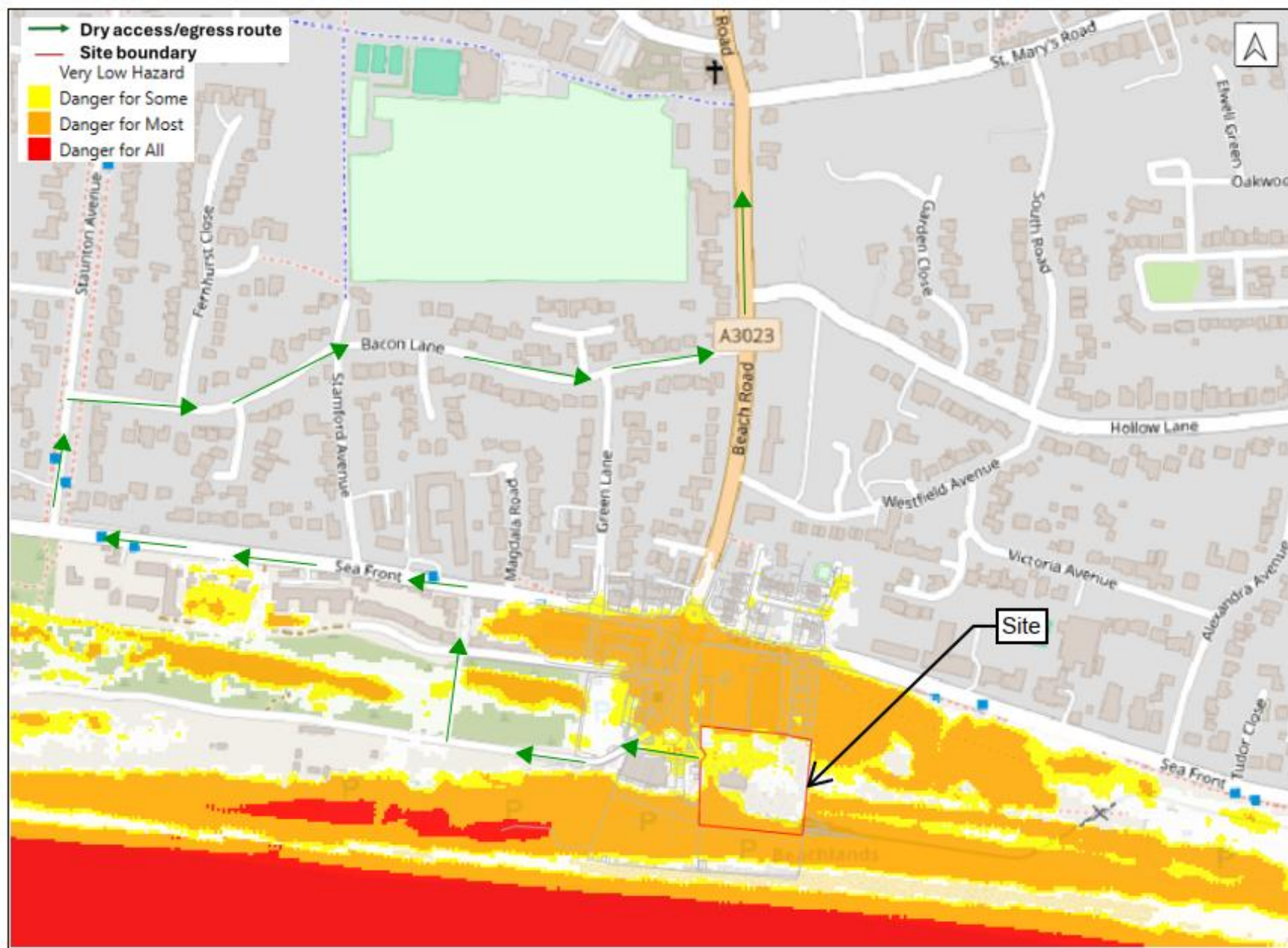
FLOOD RESPONSE PLAN

Hayling Island

ARDENT
CONSULTING ENGINEERS

AN EMPLOYEE OWNED COMPANY

Sep 2025



(CONTINUES OVERLEAF)

FLOOD RESPONSE PLAN

Hayling Island

Sep 2025

EMERGENCY CONTACT NUMBERS:

Agency	Number
Environment Agency Flood Warnings Direct	0345 988 1188
Havant Borough Council General Enquiries Contact	023 9244 6019
Floodline helpline (Telephone)	0345 988 1188
Floodline helpline (Textphone)	0345 602 6340
National Gas Emergency Service	0800 111 999
UK Power Networks (power cut)	0800 028 0247
Southern Water (emergencies)	0330 303 0368
NHS 111 Services	111
Police/Fire Brigade/Ambulance/Coastguard	999

IF THERE IS A DANGER TO LIFE ALWAYS DIAL 999 OR 112 AND ASK FOR THE APPROPRIATE EMERGENCY SERVICE.

EMERGENCY KIT

This is a useful bag that is packed with essentials in case you need to evacuate the premise. It should be stored somewhere you can easily get to. Handy things to keep in your grab bag include:

- A list of useful telephone numbers (local authority, insurance company, family and friends, Gas Safe registered gas engineer and trained electrician).
- Mobile phone charger.
- Spare keys.
- Toiletries, sanitary supplies.
- First-aid kit.
- Any essential medication, or details of your prescription.
- A wind-up or battery-operated radio with spare batteries.
- Torch with spare batteries.
- Cash and credit cards.
- Spare clothes and blankets.
- Sensible flat shoes.
- Bottled water.
- A stock of non-perishable snack items.
- Essential items for babies or pets.

If asked by the emergency services to leave your premise, please do so as quickly and calmly as possible. If you have time, turn off electricity, gas, and water supplies, unplug appliances, and lock all windows and doors. Take your grab bag with you.

An offsite refuge will be confirmed by emergency Services during an event

Occupants should listen to the advice and guidance from the emergency services at the time of an incident.

ANNUAL REVIEW OF PLAN

- Check the management team and contacts lists and update details if necessary;
- Contact the Environment Agency Floodline Service to check that the flood risk to the Site has not changed;
- Check if the evacuation procedures are still correct;
- Undertake Flood Evacuation exercise; and
- Check the flood emergency kit.

In accordance with the flood risk assessment and planning requirements for the site, the development has been designed and constructed to provide a safe temporary refuge at first floor level and above.

Note the flood extents were obtained from the Environment Agency and Havant Borough Council, and the information contained in this notice will be reviewed annually by the developments managing