

FLOOD RISK ASSESSMENT

Site Address

78A High Street
Littlehampton
BN17 5DX

Date

05/01/2026

Location of site: 502868 / 102085 (shown as easting and northing coordinates)

Location

78A High Street, Littlehampton, BN17 5DX

Flat Area 37.5 m²

Proposed Development Change of use of Ground floor E to 1 Bed room flat .

Flood Zone The site is located in Flood Zone 3a.

Topography The ground level at the site ranges from 2.70mAOD (SE) to 3.21mAOD (NW).

Sequential and Exception Tests

Development for a change of use, Sequential and Exception Tests should not be required.

Main Sources of Flooding

The River Arun, located 300m southwest and the English Channel (Littlehampton Coastline), 824m south of the site.

Flood Defences

EA and SFRA mapping suggest that the site benefits from Walls, Flood Gates, Natural High Ground level and Embankments on the banks of the River Arun and a Beach, Groynes and Engineered High Ground on the Littlehampton sea front Coastline. Hold the Line is the relevant management approach for all relevant areas.

Records of Historic**Flooding**

EA and SFRA mapping suggest that 4no. historic fluvial/tidal, 3no. tidal, 3no. pluvial and 5no. events from an unknown source occurred within 500m of the site, with the site not being impacted. A further 22no. sewers floods incidents occurred in the BN17 5 postcode area, with specific locations not shown.

Fluvial (River) and Tidal Sea Flood Risk

Medium – During the defended 0.5% AEP (2125) event, the site witnesses a flood depth of 1.07m to a level of 3.89mAOD. The site is suggested to remain dry during the 0.1% AEP.

Pluvial (Surface Water) Flood Risk

Low – During the RoFSW (2040 – 2060) event, the southeast site is suggested to have an 8High9 pluvial flood risk, to depths of up to 0.3m. The existing building is indicated to be at a 8Low9 risk of flooding to depths of up to 0.2m.

Flood Risk from Artificial Sources

Low – EA mapping suggest that <flooding from reservoirs is unlikely in this area

Groundwater Flood Risk

Low –Based on to the BGS, the site is potentially susceptible to groundwater flooding of property situated below ground level. The ground water table depth is nearly less than 3mbgl.

Development Impacts on Local Flood Risk

The proposed development is for a change of use and therefore will not increase the site impermeable or built-up area. As such, it will have no adverse impact on local flood risk area .

Proposed Flood Risk Mitigation Measures

- The habitable rooms and proposed will be located on the 1st floor, which will have a finished floor level of approximately 2.97mAOD.
- Occupants will sign up for EA Emergency Flood Warning Direct Service;
- Safe egress to Flood Zone 1 is a 1-minutes walk to the east along the High Street .

Surface Water Management SuDS

SuDS would reduce current surface water the nature of the site, there are limited potentials for implementation. Considerations will be given to SuDS planters and rainwater butts where possible.

Introductions

This Flood Risk assessment is prepared by Joseph Design Ltd at request of Wahab Azizi

To support planning applications for change of use from E to one bedroom flat proposed development address is at 78A High street Littlehampton BN17 5DX

The aim of this report is to establish the flood risk assessment to the site from all potential

where possible, to propose suitable mitigation methods to reduce any risks of flooding to an acceptable level. It purpose to make an assessment of whether the development of this site will be safe for its lifetime, taking into account climate change and the vulnerability of its users, without increasing flood risk .

The FRA assesses flood risk to the site from tidal, fluvial, surface water, groundwater, sewers and artificial sources. The report FRA has been produced in accordance with the National Planning Policy Framework and its supporting guidance.

www.gov.uk

When development is exempt from the sequential test

A development is exempt from the sequential test if it is:

- a householder development like residential extensions, conservatories or loft conversions
- a small non-domestic extensions with a footprint of less than 250 square metres
- a change of use (except changes of use to a caravan, camping or chalet site, or to a mobile home or park home site)
- solely at risk from surface water flooding and a site-specific FRA demonstrates it will be safe throughout its lifetime, without increasing flood risk elsewhere – this exemption does not apply to sources of flooding other than surface water
 - The purpose of this report is to establish the flood risk to the site from all potential
 - sources and, where possible, to propose suitable mitigation methods to reduce any
 - risks to an acceptable level. It aims to make an assessment of whether the

- development will be safe for its lifetime, taking into account climate change and the
- vulnerability of its users, without increasing flood risk elsewhere.
- The FRA assesses flood risk to the site from tidal, fluvial, surface water, groundwater,
- sewers and artificial sources. The FRA has been produced in accordance with the
- National Planning Policy Framework (NPPF) and its supporting guidance.
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Summary of Data

- The following research has been undertaken as part of the FRA:
- Desktop assessment of topographical, hydrological and hydrogeological settings
- through review of the information sourced from the British Geological Survey
- (BGS), the Environment Agency (EA) and the Ordnance Survey (OS);
- Review of publicly available flood risk mapping provided by the EA;
- Review of the Preliminary Flood Risk Assessment (PFRA) and Level 1 Strategic
- Flood Risk Assessment (SFRA) produced by the LLFA outlining flood risk from
- various sources within the borough.

Legislative & Policy Context

- The Floods and Water Management Act was introduced in 2010. The Act defines the role of lead local flood authority (LLFA) for an area. All LLFA are required to develop,
- maintain, apply and monitor a strategy for local flood risk management in its area,
- called local flood risk management strategy
- Alongside the Act, Flood Risk Regulations (2009) outline the roles and responsibilities
- of the various authorities, which include preparing Flood Risk Management Plans and
- identifying how significant flood risks are to be mitigated.

Policy Content

- The National Planning Policy Framework (NPPF) sets out the Government's
- in this framework apply to the preparation of local and neighbourhood plans and to decisions on planning applications.
- from the online document from paragraphs 170 to 186.

- Inappropriate development in areas at risk of flooding should be avoided by directing
- development away from areas at highest risk (whether existing or future). Where
- development is necessary in such areas, the development should be made safe for its
- lifetime without increasing flood risk elsewhere.
-
- Strategic policies should be informed by a strategic flood risk assessment, and should
- manage flood risk from all sources. They should consider cumulative impacts in,
- affecting, local areas susceptible to flooding, and take account of advice from the
- Environment Agency and other relevant flood risk management authorities, such as
- lead local flood authorities and internal drainage boards.
-
- 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 – so as to avoid, where possible, flood risk to people and
- property. They should do this, and manage any residual risk, by:
- Applying the sequential test and then, if necessary, the exception test as set out
- below;
- Safeguarding land from development that is required, or likely to be required, for
- current or future flood management;
- 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
- 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.
- areas known to be at risk now or in future from any form of flooding, by following the
- steps set out below.

-
- Within this context the aim of the sequential test is to steer new development to areas
- with the lowest risk of flooding from any source. Development should not be allocated
- or permitted if there are reasonably available sites appropriate for the proposed
- development in areas with a lower risk of flooding. The strategic flood risk assessment
- will provide the basis for applying this test.
-
- The sequential test should be used in areas known to be at risk now or in the future
- from any form of flooding, except in situations where a site-specific flood risk
- assessment demonstrates that no built development within the site boundary,
- including access or escape routes, land raising or other potentially vulnerable
- elements, would be located on an area that would be at risk of flooding from any
- source, now and in the future (having regard to potential changes in flood risk).
- Applications for some minor development and changes of use ⁽⁶²⁾ should also not be
- subject to the sequential test, nor the exception test set out below, but should still meet
- the requirements for site-specific flood risk assessments set out in footnote ⁽⁶³⁾.
- Having applied the sequential test, if it is not possible for development to be located in
- areas with a lower risk of flooding (taking into account wider sustainable development
- objectives), the exception test may have to be applied. The need for the exception test
- will depend on the potential vulnerability of the site and of the development proposed,
- in line with the Flood Risk Vulnerability Classification set out in Annex 3.
- The application of the exception test should be informed by a strategic or site-specific
- flood risk assessment, depending on whether it is being applied during plan production
- or at the application stage. To pass the exception test it should be demonstrated that:
- a) the development would provide wider sustainability benefits to the community
- that outweigh the flood risk; and

- b) the development will be safe for its lifetime taking account of the vulnerability of
- its users, without increasing flood risk elsewhere, and, where possible, will reduce
- flood risk overall.
-
- Both elements of the exception test should be satisfied for development to be allocated
- or permitted.
- Where planning applications come forward on sites allocated in the development plan
- through the sequential test, applicants need not apply the sequential test again.
- However, the exception test may need to be reapplied if relevant aspects of the
- proposal had not been considered when the test was applied at the plan-making stage,
- or if more recent information about existing or potential flood risk should be taken into
- account.
-
- Paragraph 181 of the National Planning Policy Framework (NPPF) states that:
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- When determining any planning applications, local planning authorities should
- ensure that flood risk is not increased elsewhere. Where appropriate, applications
- should be supported by a site-specific flood-risk assessment (See Note 1)
- Development should only be allowed in areas at risk of flooding where, in the light of
- this assessment (and the sequential and exception tests, as applicable) it can be
- demonstrated that:
-
- within the site, the most vulnerable development is located in areas of lowest flood
- risk unless there are overriding reasons to prefer a different location
- the development is appropriately flood resistant and resilient such that, in the
- event of a flood, it could be quickly brought back into use without significant
- refurbishment;
- it incorporates sustainable drainage systems, unless there is clear evidence that
- this would be inappropriate;
- any residual risk can be safely managed; and
- safe access and escape routes are included where appropriate, as part of an
- agreed emergency plan.
- Paragraph 182 states that:

- Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity. Sustainable drainage systems provided as part of proposals for major development should:

- a) take account of advice from the Lead Local Flood Authority;
- b) have appropriate proposed minimum operational standards; and
- c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.

A major development is defined as:

a residential development: 10 dwellings or more or residential development with a site area of 0.5 hectares or more where the number of dwellings is not yet known
a non-residential development: provision of a building or buildings where the total floor space to be created is 1000 square metres or more or where the floor area is not yet known, a site area of 1 hectare or more.

Coastal Change

In coastal areas, planning policies and decisions should take account of the UK Marine

Policy Statement and marine plans. Integrated Coastal Zone Management should be pursued across local authority and land/sea boundaries, to ensure effective alignment of the terrestrial and marine planning regimes.

Plans should reduce risk from coastal change by avoiding inappropriate development

in vulnerable areas and not exacerbating the impacts of physical changes to the coast.

They should identify as a Coastal Change Management Area any area likely to be affected by physical changes to the coast, and:

- a) be clear as to what development will be appropriate in such areas and in what circumstances; and
- b) make provision for development and infrastructure that needs to be relocated
 - away from Coastal Change Management Areas.

Development in a Coastal Change Management Area will be appropriate only where it is demonstrated that:

a) it will be safe over its planned lifetime and not have an unacceptable impact on coastal change;

b) the character of the coast including designations is not compromised;

- c) the development provides wider sustainability benefits; and
- d) the development does not hinder the creation and maintenance of a continuous signed and managed route around the coast ⁽⁶⁴⁾.

Local planning authorities should limit the planned lifetime of development in a Coastal

Change Management Area through temporary permission and restoration conditions, where this is necessary to reduce a potentially unacceptable level of future risk to people and the development.

Local planning policy Arun Council

Policy W DM2

Flood risk

Development in areas at risk from flooding, identified on the latest Environment

Agency flood risk maps and the Council's Strategic Flood Risk Assessment (SFRA), will only be permitted where all of the following criteria have been satisfied:

- a. The sequential test in accordance with the National Planning Policy Guidance has been met.
- b. A site specific Flood Risk Assessment demonstrates that the development will be safe, including access and egress, without increasing flood risk elsewhere and reduce flood risk overall.
- c. The sustainability benefits to the wider community are clearly identified.
- d. The scheme identifies adaptation and mitigation measures.
- e. Appropriate flood warning and evacuation plans are in place; and
- f. New site drainage systems are designed to take account of events which exceed the normal design standard i.e. consideration of flood flow routing and utilising temporary storage areas.

The reports prepared as part of the criteria above must take into account contingency

allowances, taking climate change into account as set out in Flood Risk Assessments:

climate change allowances section of the NPPG.

In locations where strategic flood defence or resilient and resistant construction

measures are necessary within the site itself, proposals will be required to demonstrate how measures have been incorporated as an intrinsic part of the scheme

in a manner which is compatible with the latest Strategic Flood Risk Assessment.

All development proposals must take account of relevant Surface Water Management

Plans, Catchment Flood Management Plans and related Flood Defence Plans and

strategies such as the Lower Tidal River Arun Strategy. The council may require financial contributions from development on sites where measures to address flood risk or to improve the environmental quality of watercourses have been identified by these Plans and Strategies.

Local planning policy West Sussex Policy W17 Flooding

1. Proposals for waste development will be permitted provided that:
 - mitigation measures are provided to an appropriate standard so that there would not be an increased risk of flooding on the site or elsewhere;
 - they are compatible with Shoreline Management Plans and/or Catchment Flood Management Plans and the integrity of functional floodplains is maintained;
 - appropriate measures are used to manage surface water runoff including, where appropriate, the use of sustainable drainage systems (SUDS); and
 - they would not have an unacceptable impact on the integrity of sea, tidal, or fluvial flood defences, or impede access for future maintenance and improvements of such defences.
2. Proposals for waste development in 8areas at risk of flooding9 will not be permitted unless they pass the Sequential Test and, where applicable, the Exception Test set out in national policy.

EA Standard Advice on flood Risk

when carrying out flood risk assessments for developments.

Flood Risk Assessments are required for developments within one of the Flood Zones.

This includes developments:

in Flood Zone 2 or 3 including minor development and change of use more than 1 hectare (ha) in Flood Zone 1;

less than 1 ha in Flood Zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs);

in an area within Flood Zone 1 which has critical drainage problems as notified by the Environment Agency.

Site location and area Lead Local Flood Authority

The site is located at 78A High Street, Littlehampton, BN17 5DX and is centred at

A site location map and aerial photo are shown in Figure 1 and 2. Photographs of the site are available in

The site falls within the jurisdiction of Arun in terms of the planning process.

Lead Local Flood Authority

West Sussex County Council is also the Lead Local Flood Authority (LLFA).

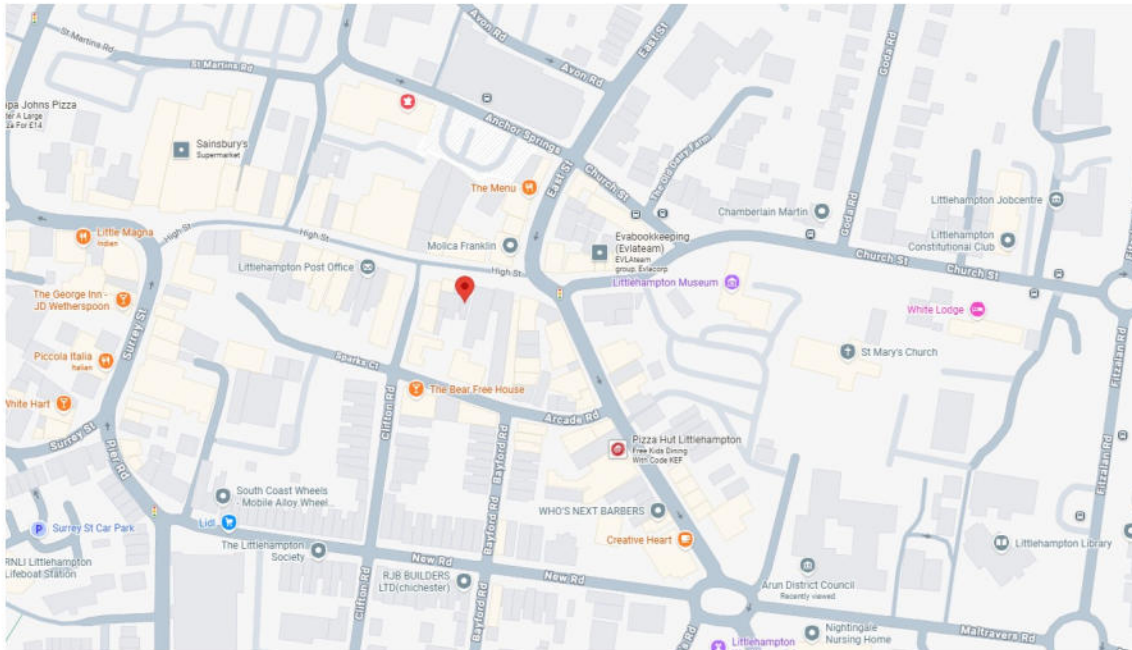


Figure 1: Site Location Map



Figure 2: Site Aerial Map

Flood Zone

For planning purposes, the site is located in Flood Zone 3a as defined by the EA and LLFA.

Site and Surrounding land use

The site is currently used as a retail shop



A

Building

Summary of surrounding land uses

Boundary

Land Use Description

Immediately Adjacent

(Within 0 – 25m)

General Local Area

(Within 25 – 250m)

Northern

High Street, Mixed Use

(Commercial/Residential)

Commercial, Residential

Eastern

Pharmacy, Mixed Use

(Commercial/Residential)

Commercial, Residential, Place of

Worship, Greenspace, Library

Southern Shopping Centre (The Arcade)

Commercial, Residential,

Greenspace (Caffyns Field), I

Western

Vape Shop, Mixed Use

(Commercial/Residential)

Commercial, Residential

Hydrology

The nearest main watercourse is the River Arun which is located approximately 300m southwest. The English Channel, specifically the Littlehampton Coastline, is also located 825m south of the site.

Geology

Data from the British Geological Survey indicates that the underlying superficial geology is characterised as Raised Beach Deposits (Sand and Gravel). The underlying bedrock geology is characterized as the Lewes Nodular Chalk, Seaford Chalk, Newhaven Chalk, Culver Chalk and Portsdown Chalk Formations (Chalk).

Hydrogeology

The site lies upon a Secondary A superficial aquifer and a Principal bedrock aquifer.

The ground level at the site ranges from 2.70mAOD to the rear of the site at the southeast to 3.21mAOD when approaching High Street northwest

The existing building lies at approximately 2.97mAOD,

High Street lies at approximately 3.01mAOD.

When considering the further surrounding area, the site lies upon an area of relatively

low-lying elevation, which stretches from the River Arun to across East Street (the B2187). The River Arun lies at lows of approximately -1.58m AOD, with highs in elevation being situated at the northern catchment area, which comprises predominantly residential neighbourhoods in Littlehampton.

The Sequential and Exception Tests

The Sequential Test is not required if the proposed development is a minor development or if it involves a change of use unless the development is a caravan, camping chalet, mobile home or park home site.

Based on Government data Guidance, Minor Development means:

Exempt from the Sequential test

householder development like residential extensions, conservatories or loft conversions

small non-domestic extensions with a footprint of less than 250 square metres

change of use (except changes of use to a caravan, camping or chalet site, or to a mobile home or park home site)

Development is also exempt from the sequential test if it is a development on a site allocated in the development plan through the sequential test and:

the proposal is consistent with site's allocated use

there have been no significant changes to the known level of flood risk to the site, now or in the future, which would have affected the outcome of the test

Exception Test

Table 2: Flood risk vulnerability and flood zone ‘incompatibility’

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

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Fluvial & Tidal Flood Risk

Excessive rainfall cause fluvial and river flooding, Heavy snow melt causes a river to exceed it's capacity.

Two main types of fluvial flooding

- Overbank flooding – this occurs when water rises steadily and overflows over the edges of a river or stream;
- Flash flooding – this is characterized by an intense, high velocity torrent of water that occurs in an existing river channel with little to no notice. Flash floods are very dangerous and destructive not only because of the force of the water, but also the hurtling debris that is often swept up in the flow.

EA Modelled Fluvial Flood Risk Zones

Flooding maps produced by environment Agency Available historic data and hydraulic modelling to defines zone of flooding risk .

The EA fluvial zones

- Flood zone 1: Less than 1 in 1000 (0.1%) annual probability of flooding;
 - Flood zone 2: Between 1 in 100 (1%) and 1 in 1000 (0.1%) annual probability of flooding;
 - Flood zone 3: Greater than 1 in 100 (1%) annual probability of fluvial flooding.
-
- Flood zone 3a: Greater than 1 in 100 (1%) annual probability of fluvial flooding and/or greater than 1 in 200 (0.5%) annual probability of tidal flooding;

Functional flood plain

- Flood zone 3b (definition specific to the LLFA). Less than a 1 in 20 (5%) annual probability of fluvial and/or tidal flooding.
- 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 parameter.

Functional floodplain will normally comprise:

- lands having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is

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

- Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

Mechanism for Tidal Flooding

Tidal flooding may happen by seasonal high tides by storm where increase water level above astronomical tide level is created storm driven wave action

Historic records Fluvial & Tidal flooding incident

Historic records of EA flooding. These maps indicate that there has been historic flooding in the vicinity of the site in the years 1975, 1983, 1985 and 2020, when the defences were overtopped.

Examination of the LLFA9s Level 1 SFRA indicates a further 3no. historic tidal flooding

instances 500m of the site. These occurred 415m southeast.
270m south, 295m southeast and

The SFRA also indicates 5no. historic flood incident of unknown source 140m southwest, 460m west and 460m southwest. southeast, 370m northeast, 420m

The site was not impacted during any historic flooding

Historic and Recorded flood outlines

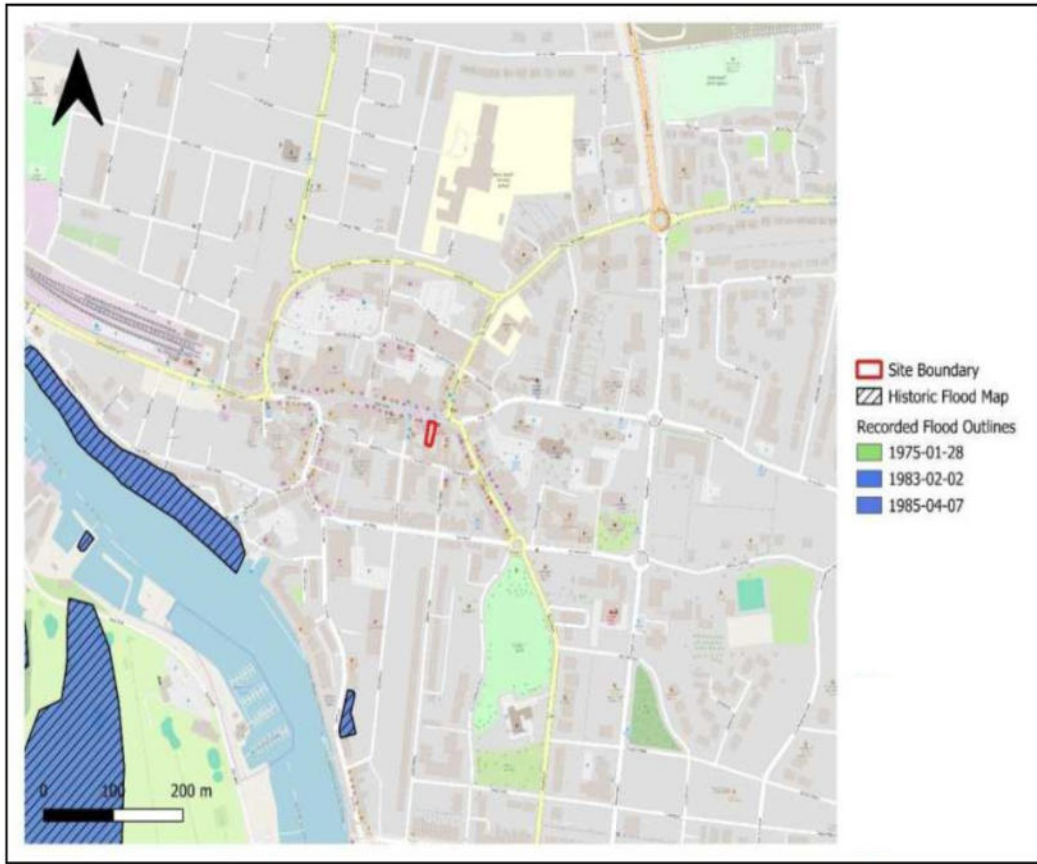


Figure 1

EA Climate Change Allowances for Peak River Flow

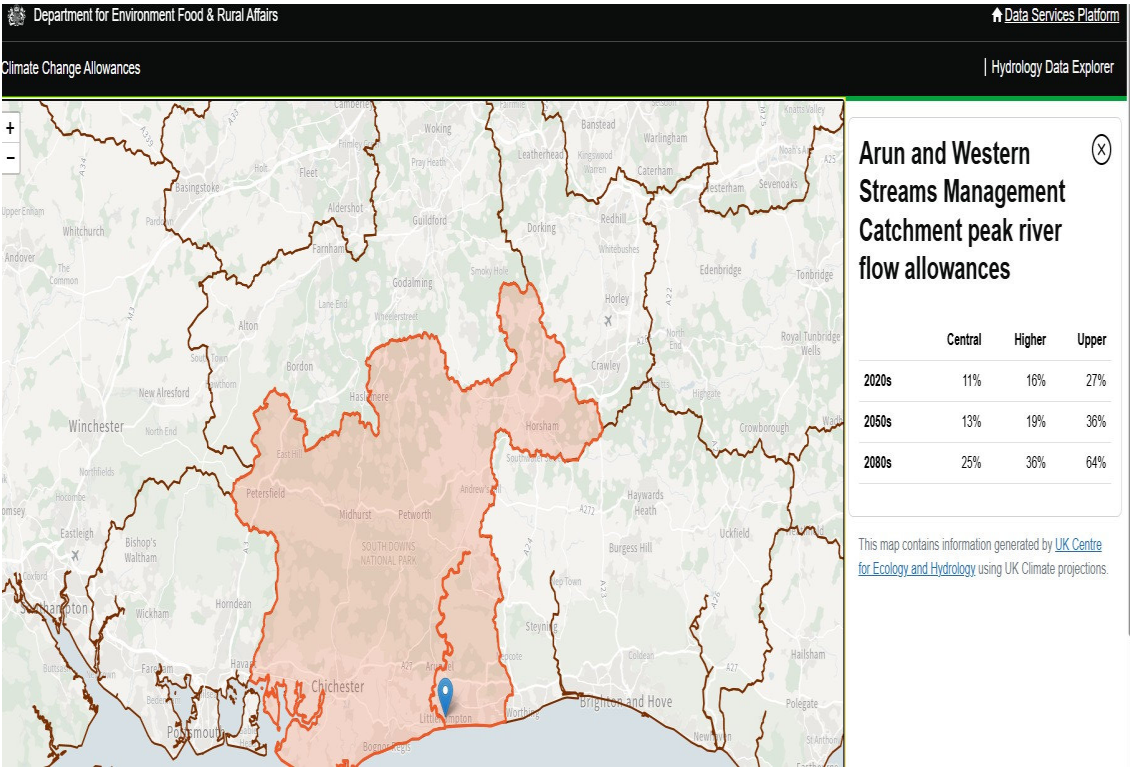


Figure 2

EA Flood defence map

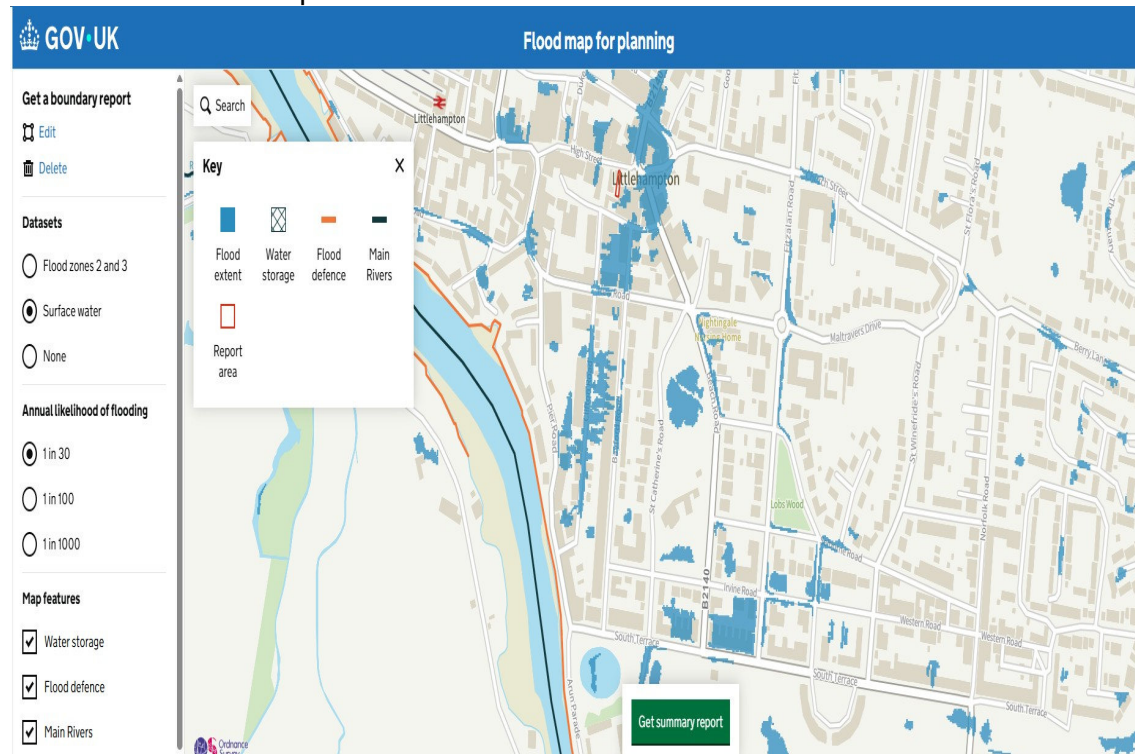


Figure 3

Wall Flood gates Embankments & Natural east bank of River Arun
Defence Crest level 3.39m AOD – 4.80m AOD

Site benefit from a beach Groynes & Engineering high ground coastal sea defences are n't outlined in the Environment Agency mapping .

Peak River flow Climate changes Allowances

The EA [Climate change allowances for peak river flow](#) map show that the site considered to be in the Arun and Western Streams Managements Catchment. The climate change allowances for this catchment are available in [Figure 2](#)

In flood zones 2 or 3a for:

- essential infrastructure – use the higher central allowance
- highly vulnerable – use central allowance (development should not be permitted in flood zone 3a)
- more vulnerable – use the central allowance
- less vulnerable – use the central allowance

In flood zone 3b for:

- highly vulnerable development should not be permitted
- more vulnerable development should not be permitted
- less vulnerable development should not be permitted

Climate change allowance of 25 % should be used

Site is positioned in the South East River Basing District South East of England
Sea level climate change allowance for new residential is proposed upper end allowances of 0.018m per year will be used until 2125 when considering tidal flooding .

Arun Coastal Modelling (2012)

Defended

These indicate that during the defended 0.5% AEP (2115) tidal event, the site and proposed development witness a maximum flood depth of 0.89m to a level of 3.72 mAOD.

When considering climate change, for the 0.5% defended AEP (2125) event, the depth rises to 1.07m to a level of 3.89mAOD. The site is indicated to remain dry during the 0.1% AEP.

Undefended

undefended 0.5% AEP (2115) tidal event, the site and proposed development witness a maximum flood depth of 2.26m to a level of 4.94mAOD.

When considering climate change, in the 0.5% AEP (2125) event, this depth rises to 2.44m to a level of 5.05mAOD. In the 0.1% AEP, this level reduces to 4.05mAOD.

Surface Water Drainage

The existing site discharge surface water to the public sewer it is deemed sustainable to reuse this connection to continue to discharge surface water runoff The public sewer .

The surface water runoff from the developed site will be no different to pre and post application there will be no increase in surface water runoff of the site as result of the development

The risk of flooding from surface water is considered to be low and is likely that the current drainage system is sufficient for proposed use no changes to the current surface water .

Pluvial (Surface Water) Flood Risk

.Surface water flooding occurs when the volume and intensity of rainfall overwhelms local drainage systems.

Unlike flooding from rivers, surface water flooding can happen many miles from a river. This means it can happen in places that people would not expect. It happens because there is nowhere else for the rainwater to go.

Main Potential source of local pluvial flooding

Main potential source of pluvial flooding to the site is considered to be surface water ponding and flooding associated with rainfall.

Record of Historic Pluvial Flooding incident

Examination of the LLFA9s Level 1 SFRA revealed evidence of 3no. pluvial flooding incidents occurring 75m southwest, 300m southeast and 495m northwest. The site was not impacted.

A further 5no. historic flood events of an unknown source have also occurred within 500m of the site

A map showing the location of historic flooding incidents is available in [Figure 1](#) .

Surface Water Flood Risk from Artificial Sources (Reservoirs and Canals)

The EA's reservoir flood risk map indicates that the site lies in an area where flooding from reservoirs is unlikely

An examination of OS mapping and the mapping revealed no indications of significant reservoirs or canals within 5km of the site.

Sewer Flooding

Examination of the LLFA9s Level 1 SFRA revealed evidence of 22no. historic sewer flooding incidents in the BN17 5 postcode area. It is unknown whether the site was impacted.

A further 5no. historic flood events of an unknown source have also occurred within 500m of the site; these are detailed in

A map showing recorded incidents of historic flooding is available in [Figure 1](#) .

Climate change

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

During the Risk of flood surface water (RoFSW) present day (2025) and RoFSW climate change (2040 – 2060) scenario, the site witnesses a High risk of flooding to depths of up to 0.3m, which is isolated to the southeastern outside space

The existing building is indicated to be at a Low risk of flooding to depths of up to 0.2m.

Ground water Flood Risk

Flooding from Groundwater occurs when water rises from an underlying aquifer .

Groundwater flooding occur in areas underlain by principle aquifers .

A high groundwater table also has potential to exacerbate the risk of surface water and fluvial flooding reducing rainfall.

Historic records of ground water flooding

Examination of the LLFA9s Level 1 SFRA revealed 5 no. historic flooding events of an unknown source also occurred 500m of the site;

.

Fact to Groundwater Flooding

The Groundwater Flooding Susceptibility Map provided by BGS indicates that the site has potential for groundwater flooding to occur at property situated below ground level. The Groundwater Depth map also provided by BGS indicates the groundwater level may be approximately less than 3mbgl.

Change of area and footprint

Existing and proposed are the same the proposed development will not alter the impermeable area or built up area of the site .

Will impact upon flood flow rate unlikely, Surface water run off rates, local flood storage or flood flow pathways .

Possible flooding resilience Mitigation work if required

Removable flood boards could be provided in the passageway to the rear yard

Emergency plan

Death or injury can occur drowning hard objects carried out along by water risk to life depend on depth of water and velocity of flood water .

Danger to people wading in flood water

FD2321/TR1 and FD2321/TR2 are **technical reports from a joint research project by DEFRA and the Environment Agency (EA)** titled "Flood Risks to People

Danger Estimated formula

$$HR = d \times (v + 0.5) + DF$$

where, HR = hazard rating; d = depth of flooding (m); v = velocity of floodwaters (m/sec); and DF = debris factor.

Flood Hazard Rating

Velocity	Depth									
	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.0	2.25	2.50
0.0	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25
0.5	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
1.0	0.38	0.75	1.13	1.50	1.88	2.25	2.63	3.00	3.38	3.75
1.5	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
2.0	0.63	1.25	1.88	2.50	3.13	3.75	4.38	5.00	5.63	6.25
2.5	0.75	1.50	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50
3.0	0.88	1.75	2.63	3.50	4.38	5.25	6.13	7.00	7.88	8.75
3.5	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
4.0	1.13	2.25	3.38	4.50	5.63	6.75	7.88	9.00	10.13	11.25
4.5	1.25	2.50	3.75	5.00	6.25	7.50	8.75	10.00	11.25	12.50
5.0	1.38	2.75	4.13	5.50	6.88	8.25	9.63	11.00	12.38	13.75

Debris Factor

Depths	Pasture/Arable Land	Woodland	Urban
0 to 0.25	0	0	0
0.25 to 0.75	0.5	1	1
d>0.75 and/or v > 2	0.5	1	1

EA After a flood

After a flood, water levels may rise and fall for several weeks depending on drainage and any further rainfall.

Avoid entering flood water unless absolutely necessary. Flood water can be much deeper than it appears and hide dangers, such as uncovered manholes and sharp objects.

If you must enter flood water, move slowly and carefully, avoiding fast-moving water. Keep updated on [weather reports](#). Call Floodline on **0345 988 1188** or visit [Flood alerts and warnings - GOV.UK \(check-for-flooding.service.gov.uk\)](#) for the latest flood warnings 24 hours a day.

Access and Safe Egress

Safe egress to Flood Zone 1 is available by a 1-minute walk west on High Street. Figure A

All tenant to register with EA Flood warning

Get flood warnings by text, phone or email

Use this service to get flood warnings from the Environment Agency if your home or organisation in England is at risk of flooding. The service is free.

You can get messages about flooding from rivers, the sea or groundwater, depending on your area.

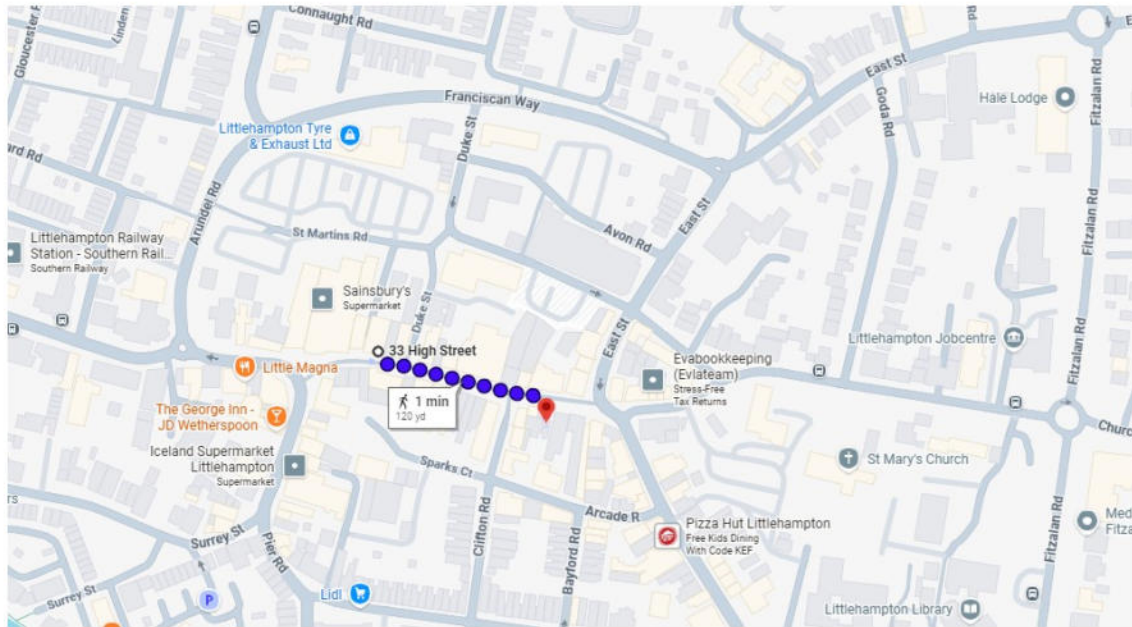
You cannot get flood warnings for surface water flooding (sometimes known as 'flash flooding')

Sign up by phone

If you're in England, Scotland or Wales you can sign up, update your details or cancel your account by calling Floodline.

Floodline
Telephone: 0345 988 1188
Textphone: 0345 602 6340
24-hour service

Safe Egress to Flood Zone 1 Direction



References

1. National Planning Policy Framework NPPF, July, 2021.
2. Planning Practice Guidance: Flood Risk and Coastal Change, Updated 06 March 2014.
3. Arun – Adoption Arun Local Plan 2011 – 2031, July 2018
4. Arun JBA Consulting – Level Strategic Flood Risk Assessment, August 2016
5. Arun Mott Macdonald – Arun Strategic Surface Water Management Study, October 2016

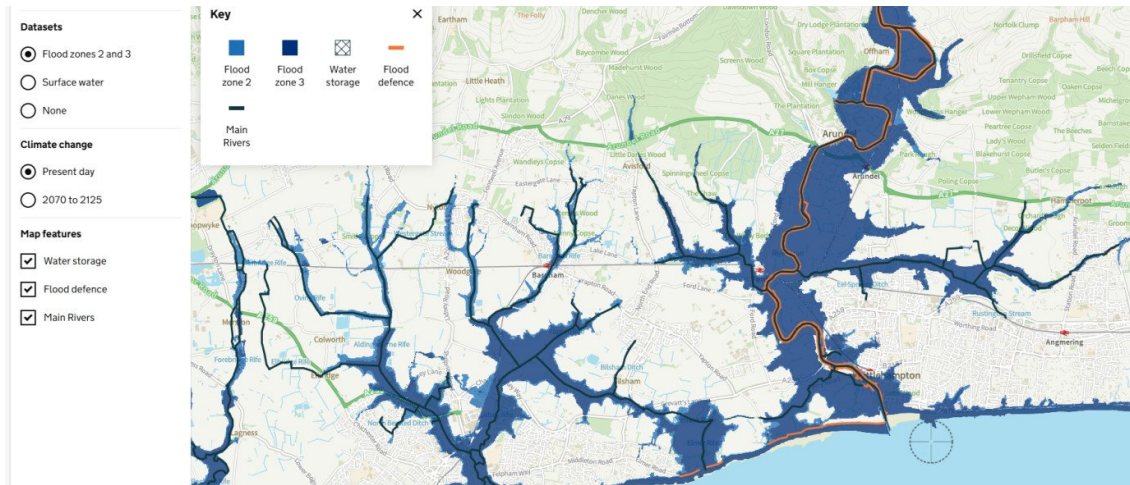
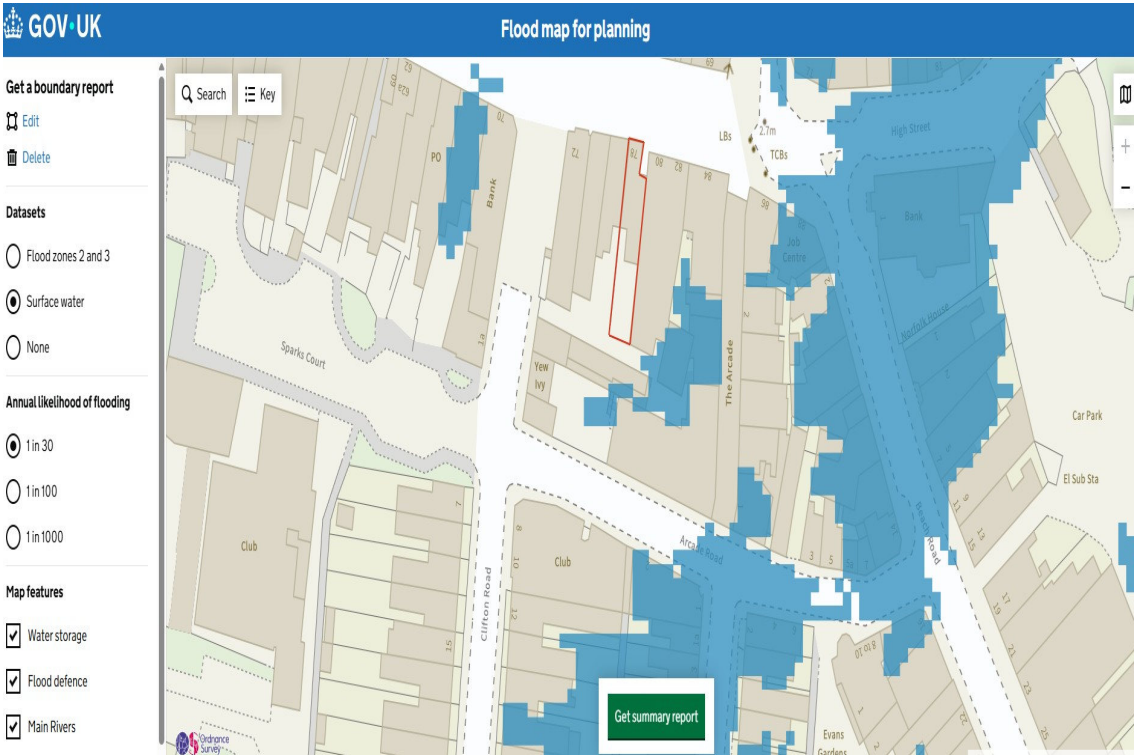
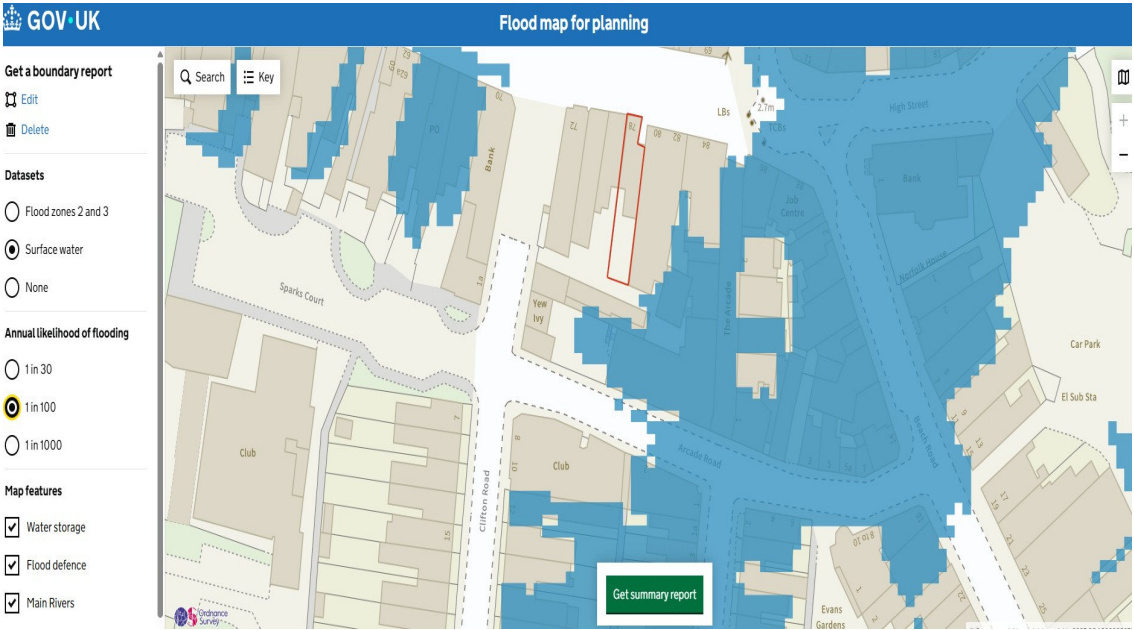


Figure 1

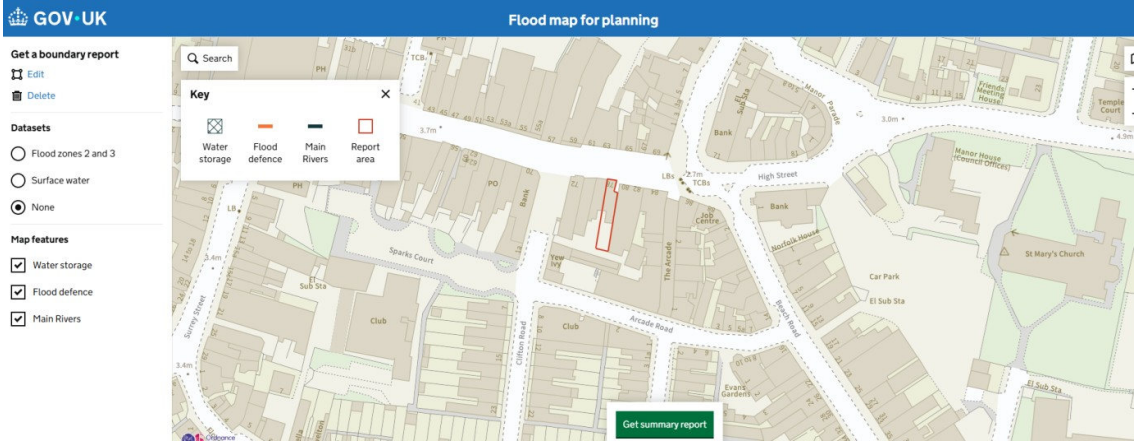
Annual likelihood of flooding 1 in 30



Annual likelihood of flooding 1 in 100



Report Area



Flood risk assessment data

Location of site: 502868 / 102085 (shown as easting and northing coordinates)

Document created on: 23 December 2025

This information was previously known as a product 4.

Customer reference number: T5VU186DV2X2/ EIR202548773

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 West Sussex County.

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

About the models used

Model name: Arun Coastal Model, 2012

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

Date: 20 August 2012

Model name: Littlehampton Update 2017 - River Arun Modelling Study

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

Date: 1 March 2017

These models contain 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:

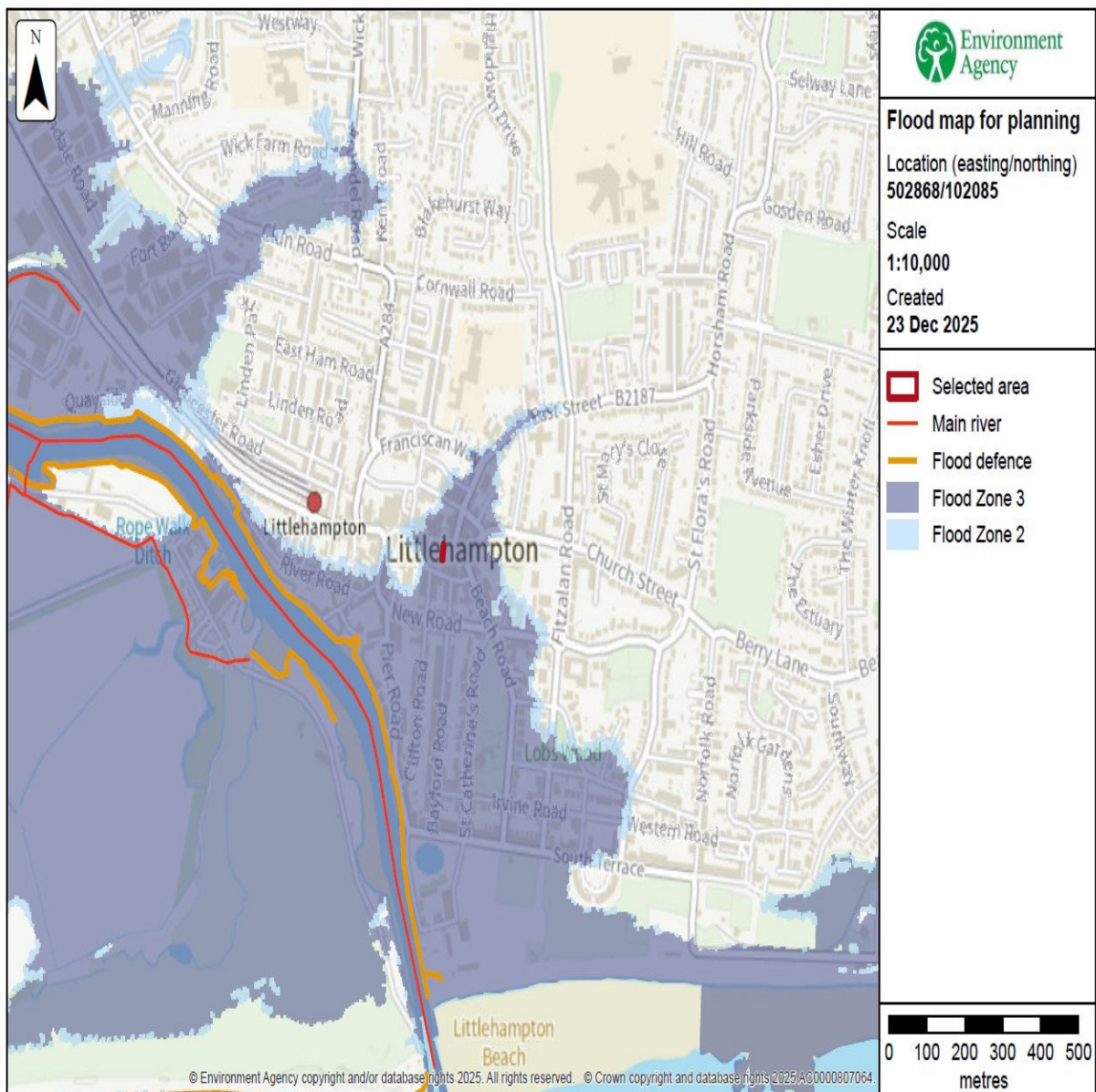
- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

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



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

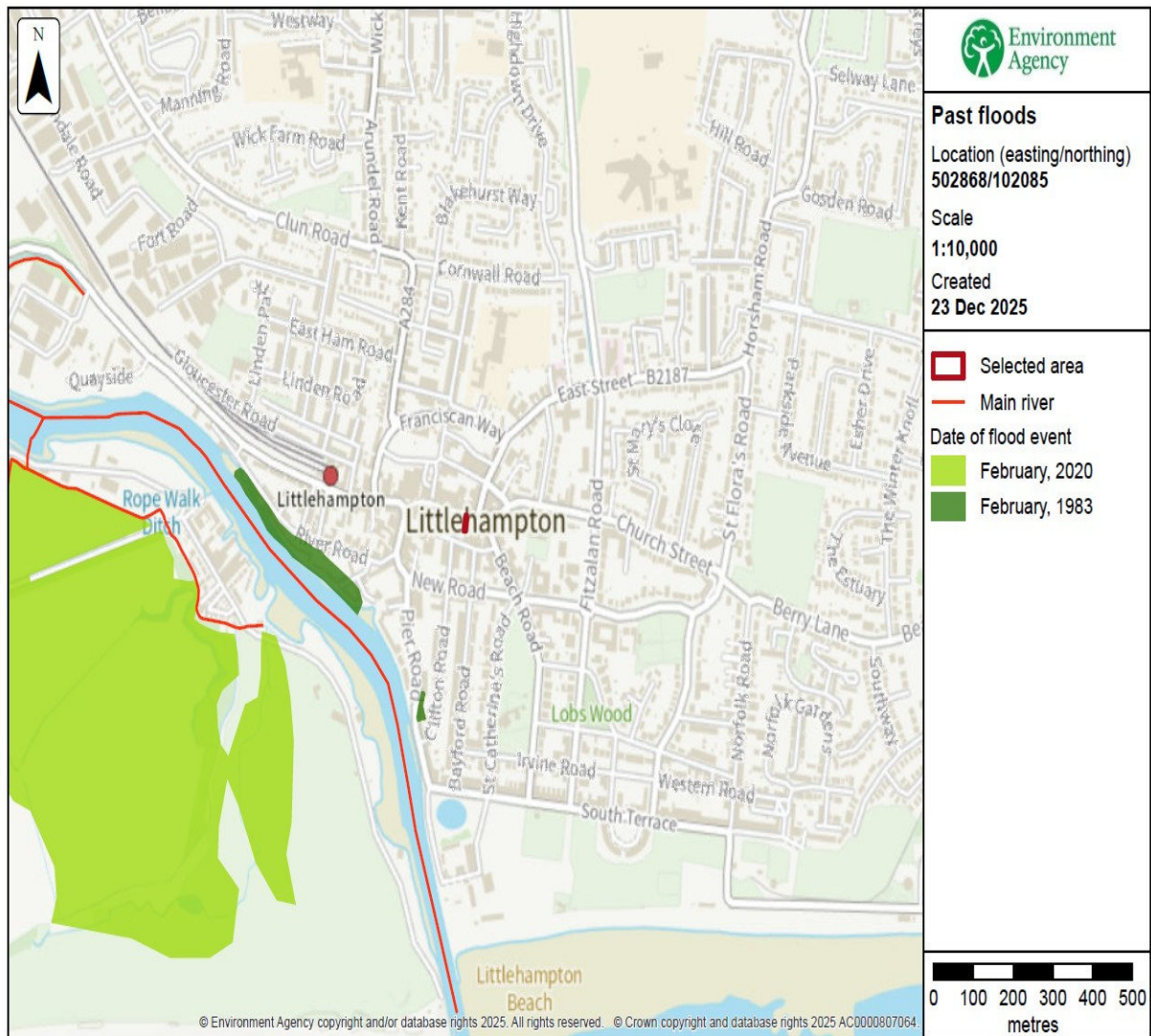
groundwater

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



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
1 February 2020	1 February 2020	sea	overtopping of defences	No
2 February 1983	2 February 1983	main river	overtopping of defences	No

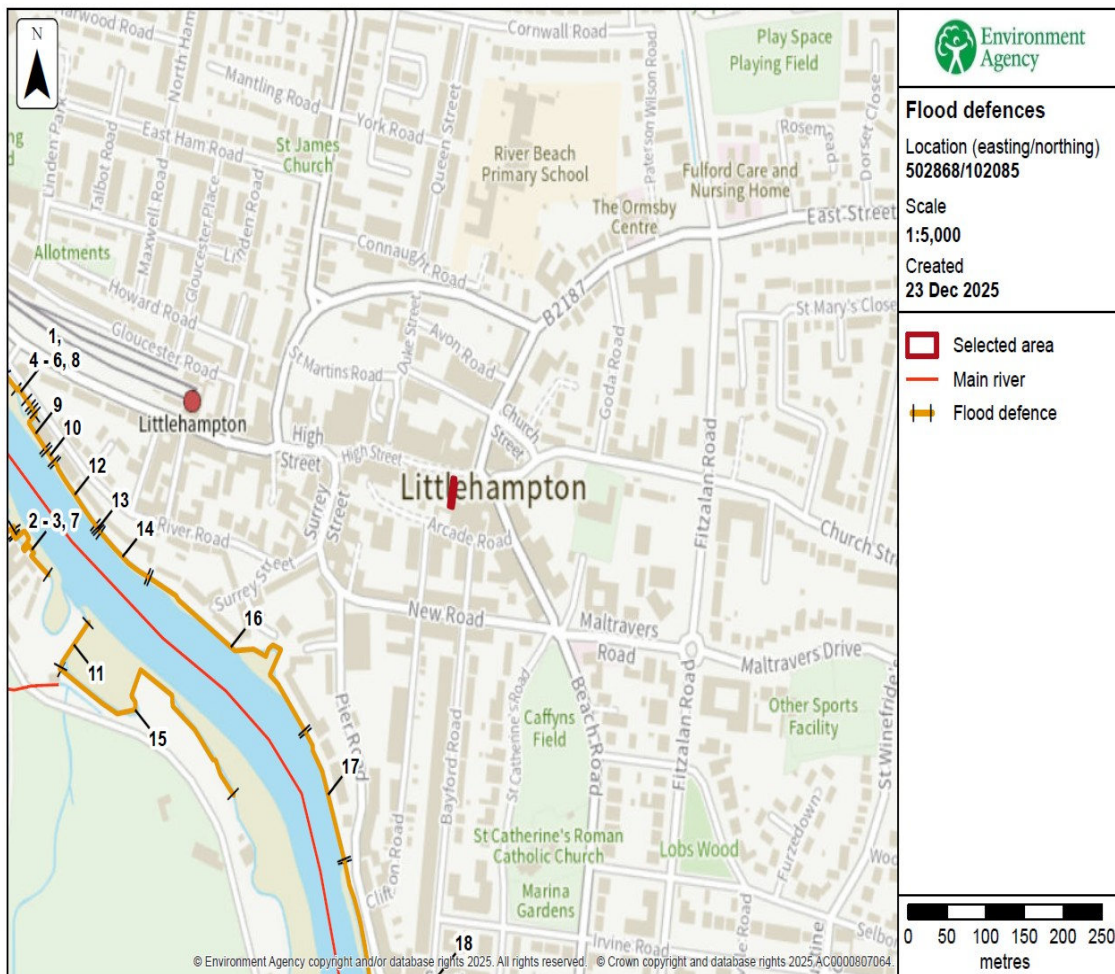
Flood defences and attributes

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 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	154861	Wall	300		4.80	4.80	4.80
2	330005	Demountable Defence			3.66	3.72	3.66
3	330004	Demountable Defence			3.66	3.73	3.66
4	446418	Wall	300		4.40	4.40	4.40
5	446798	Flood Gate	300		4.40	4.40	4.40
6	446678	Flood Gate	300		4.40	4.40	4.40
7	97690	Wall	50		3.77	3.23	
8	156333	Wall	300		4.80	4.80	4.80
9	154863	Wall	75		3.94	3.94	
10	458614	Wall	75		3.94	3.94	3.94

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

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)
11	183668	Wall	25		3.47	3.41	
12	154859	Wall	300		4.80	4.80	4.80
13	446218	Wall	300		4.80	4.80	4.80
14	154862	Wall	75		3.39	3.94	
15	11139	Embankment	50		2.26	3.77	
16	483081	Wall	75		3.39	3.94	3.39
17	483074	Wall	75		4.30	4.32	4.30
18	156334	Wall	300		4.76	4.80	4.80

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

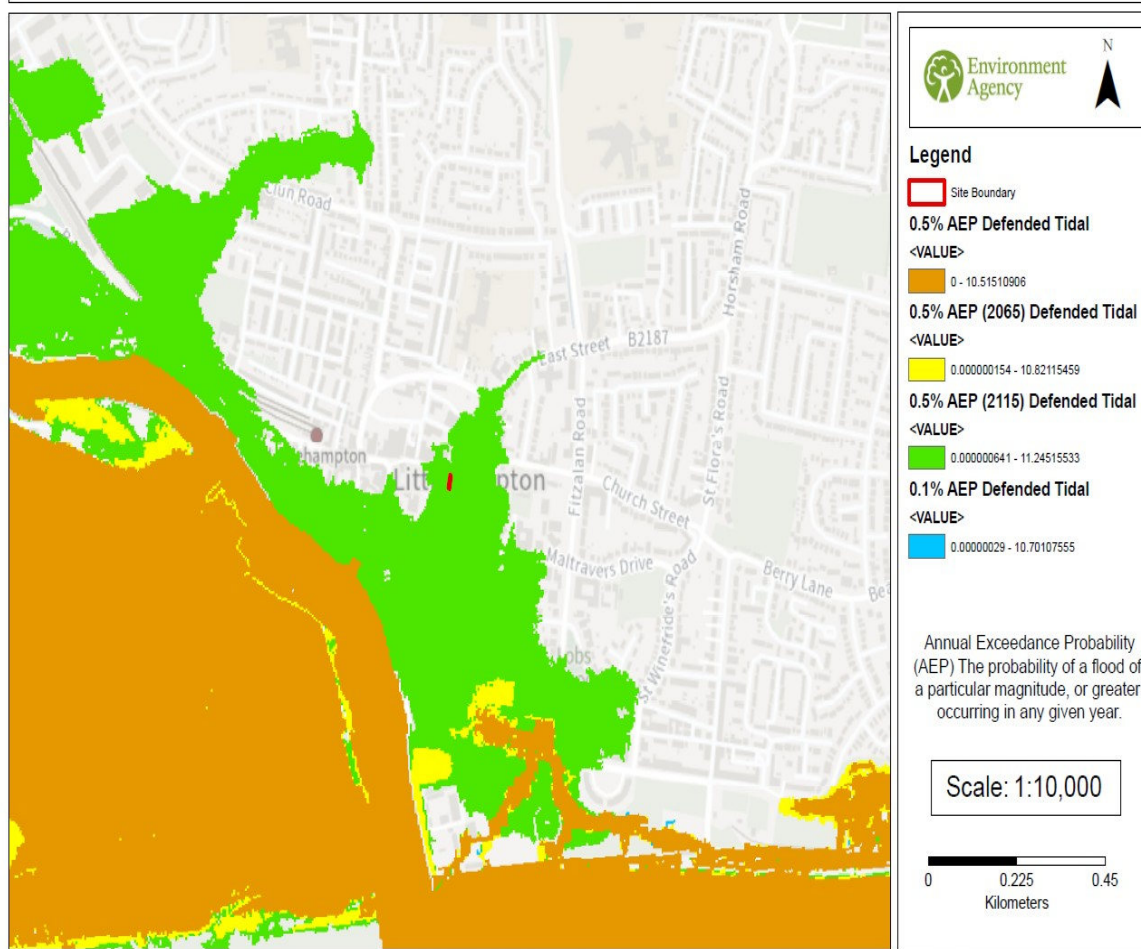
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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.

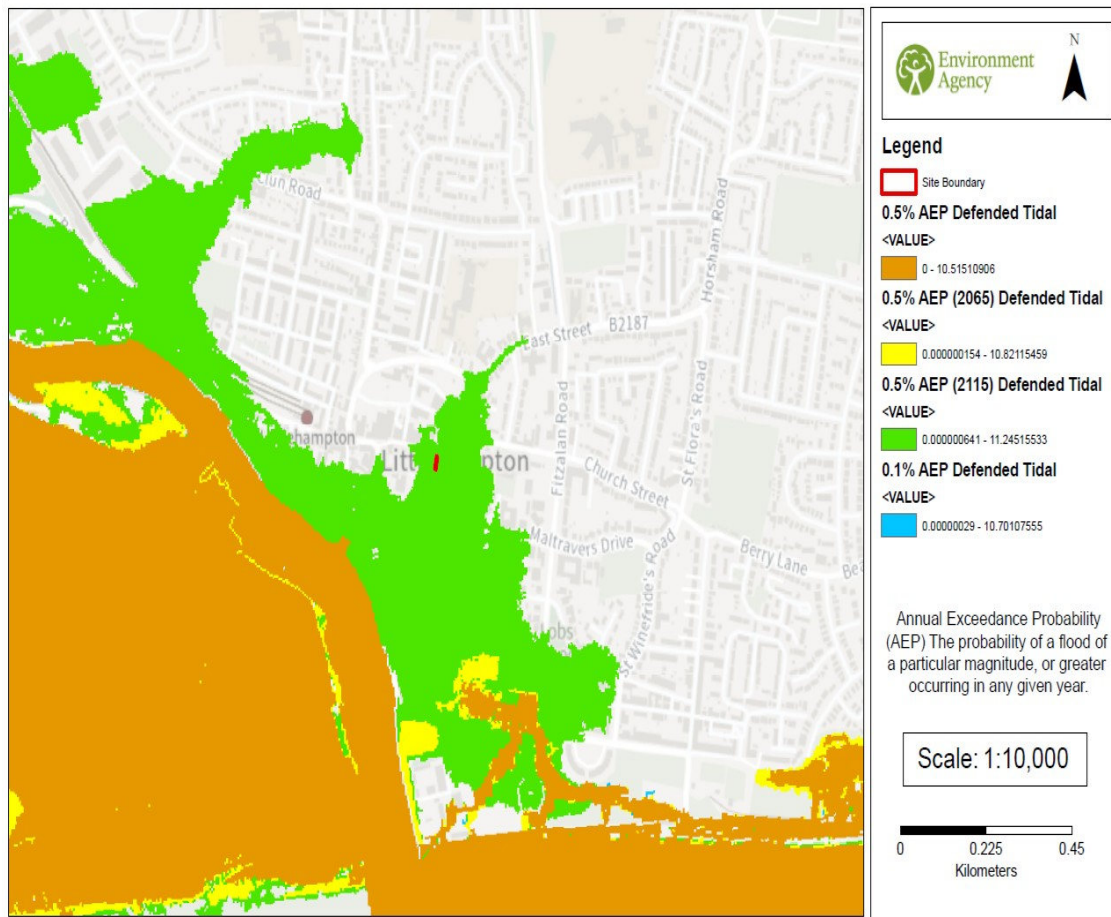
Modelled scenarios

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

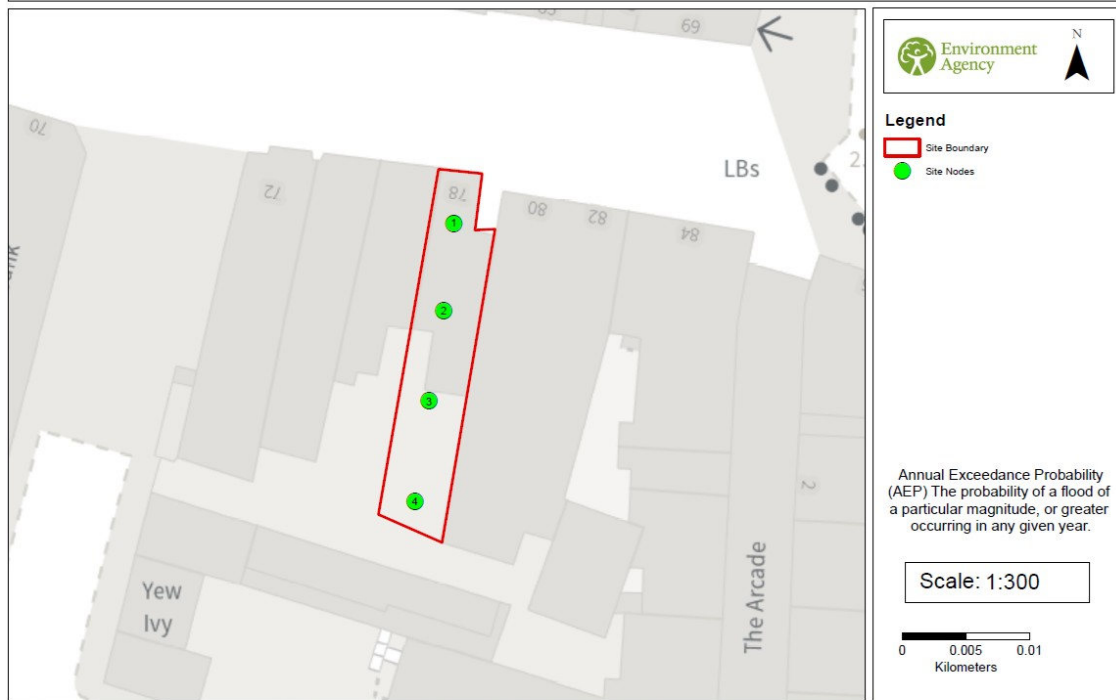


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Contact us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506. Email: enquiries@environment-agency.gov.uk



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Contact us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1RY Tel: 03708 506 506 Email: enquiries@environment-agency.gov.uk

FRA Site Boundary and Node Points. Centred on BN17 5DX. Created 30/12/2025.



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Contact us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506. Email: enquiries@environment-agency.gov.uk

Product 4 Flood Risk Data Requested by: Wahab Azizi

Site: 78a High street BN17 5DX Littlehampton

Table 1: Water Levels: Tidal Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	502870	102097	3.73	4.34	4.93	4.05
2	502869	102090	3.73	4.34	4.93	4.05
3	502868	102083	3.73	4.34	4.93	4.05
4	502867	102075	3.73	4.34	4.93	4.05

Table 2: Water Levels: Tidal Defended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Defended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2065)*	0.5% (2115)*	0.1%
1	502870	102097	-	-	3.74	-
2	502869	102090	-	-	3.68	-
3	502868	102083	-	-	3.79	-
4	502867	102075	-	-	3.72	-

Table 3: Water Depths: Tidal Undefended

Node Ref	NGR		Modelled Flood Depths in Metres			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)*	0.5% (2115)*	0.1%
1	502870	102097	0.74	1.35	1.94	1.05
2	502869	102090	0.79	1.40	1.99	1.10
3	502868	102083	0.99	1.60	2.19	1.31
4	502867	102075	0.87	1.48	2.07	1.18

Office Address: Teville Gate House, Teville Road, Worthing, West Sussex, BN11 1UR

Customer services line: [REDACTED]

www.gov.uk/government/organisations/environment-agency

Table 4: Water Depths: Tidal Defended

Node Ref	NGR		Modelled Flood Depths in Metres			
	Eastings	Northings	Defended Annual Exceedance Probability			
			0.5%	0.5% (2065)*	0.5% (2115)*	0.1%
1	502870	102097	-	-	0.57	-
2	502869	102090	-	-	0.73	-
3	502868	102083	-	-	0.90	-
4	502867	102075	-	-	0.80	-

All levels taken from: Arun Coastal Modelling (2012), by JBA Consulting, with updated defended modelling (2017).

Produced on: 30/12/2025

*** The flood risk data provided is based on existing EA hydraulic models with an allowance for climate change. Please note the climate change allowances provided are not up to date. These were updated on 27 July 2021.**

You should refer to 'Flood risk assessments: climate change allowances' for the most up to date allowances. You will need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

There is no additional information or health warnings for these levels/depths or the model from which they have been produced.

Office Address: Teville Gate House, Teville Road, Worthing, West Sussex, BN11 1UR

Customer services line:

www.gov.uk/government/organisations/environment-agency

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 West Sussex 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

 for:

[more information about getting a product 5, 6, 7 or](#)

general help and advice about the site you're requesting data for