



Project Title: 00114 Sea Cadet Jetty, Littlehampton

Product: Level 3 Flood Risk Assessment

Date: 06 June 2021

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Report Revision Log

Report Reference	Date Issued	Issued To	Notes
00114 Sea Cadet Jetty, Littlehampton	07/06/2021	Client	

1. INTRODUCTION

1.1. PURPOSE OF THE REPORT

FloodPlan have been commissioned on behalf of Mr P. Cooling to produce a Flood Risk Assessment for a site near Sea Cadets, Rope Walk, Littlehampton, BN17 5DE. This assessment has been conducted with the understanding that the document will be used as part of a planning permission proposal by Mr P. Cooling.

1.2. LOCATION OF SUBJECT SITE

The site is located a site near the Sea Cadets, Rope Walk, Littlehampton, BN17 5DE. (502287, 102055). The site is located on the River Arun.

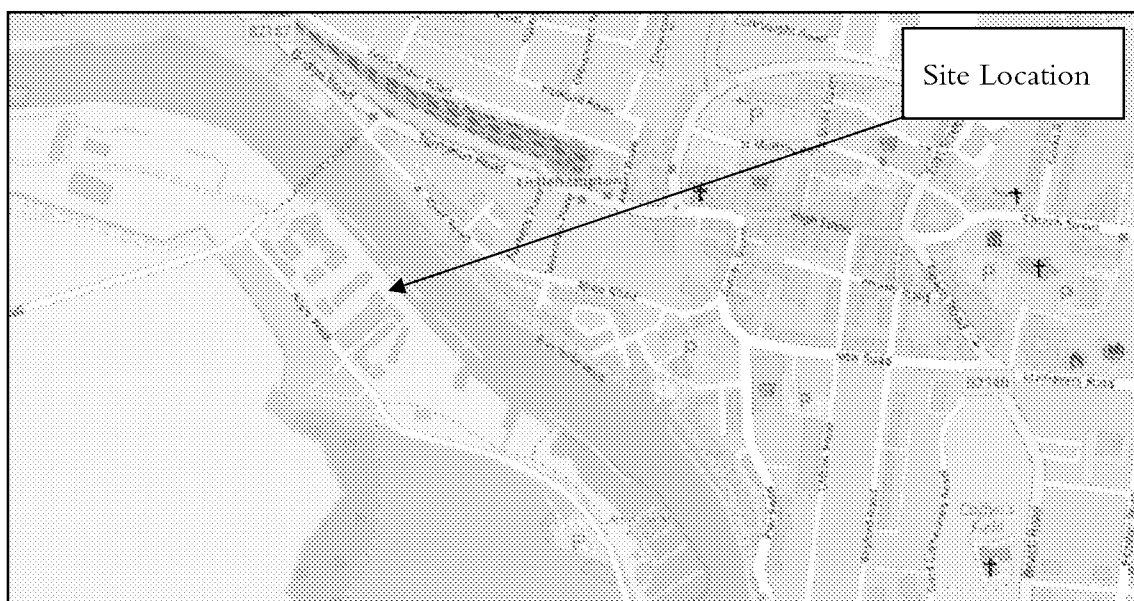


Figure 1: Site Location

1.3. SITE PROPOSALS

The Sea Cadet charity are planning to replace their existing derelict jetty with a new jetty in its stead. The proposed jetty will be positioned in the same place and be the same size as the existing. The development proposes no increase in impermeable area. At the time of writing this report, no development plans were made available.

2. ASSESSMENT OF NPPF

2.1. INTRODUCTION TO NPPF

The National Planning Policy Framework (NPPF) document provides guidance to local planning authorities to ensure the effective implementation of the planning policy. The policy seeks to direct development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. For these purposes:

- “areas at risk of flooding” means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency.
- “flood risk” means risk from all sources of flooding – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers, and drainage systems, and from reservoirs, canals and lakes and other artificial sources.

Flood risk (from river and sea) are categorised into one of the below:

2.2. FLOOD RISK CLASSIFICATIONS

Flood Zone	Probability of flooding
Zone 1	Low probability
Zone 2	Medium probability
Zone 3a	High probability
Zone 3b	Functional Floodplain

2.3. FLOOD RISK VULNERABILITY CLASSIFICATION

NPPF categorises land by vulnerability. A summary of categories can be seen below:

Vulnerability Class	Infrastructure
Essential Infrastructure	Power stations, water treatment works, wind turbines etc.

Highly vulnerable	Police stations, basement dwellings, caravans, mobile homes etc
More vulnerable	Hospitals, residential buildings, landfill sites, drinking establishments etc
Less Vulnerable	Emergency services stations, shops and building that offer professional services etc
Water compatible development	Pumping stations, docks, marinas etc

2.4. SUITABLE DEVELOPMENT MATRIX

The below table outlines the suitable development type for the flood zone classification assigned by the Environment Agency flood maps.

Flood risk vulnerability classification	Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Zone 1					
Zone 2			Exception Test Required		
Zone 3a	Exception Test Required			Exception Test Required	
Zone 3b Functional floodplain	Exception Test Required				

Figure 2: Suitable Development Matrix

Key: Blue Development is appropriate; Red Development should not be permitted; Green Development is appropriate with the passing of an Exception Test.

3. NPPF SITE ASSESSMENT

3.1. FLOOD ZONE CLASSIFICATION

As per Figure 3, the site is wholly within flood zone 3. The site is on the river side of the flood defences and therefore does not benefit from their protection.



Figure 3: Flood Zone

3.2. LAND VULNERABILITY CLASSIFICATION

The existing site is used for launching and recovering watercraft and is therefore designated as 'water compatible development' by NPPF. The proposed development will also be designated 'water compatible development'. The development therefore retains the same vulnerability classification.

3.3. SITE SUITABILITY (NPPF)

'Water compatible development' is suitable for flood zone 3, as per Figure 2.

4. SITE FLOOD RISK

4.1. THIRD PARTY FLOOD RISK DATA SUMMERY

A 'Groundsure' flood report has been acquired for advising this assessment. The full report can be found in Appendix A. The main findings are summarised below:

Type of Risk	Assessment of Risk
Overall Flood Risk	High
Rivers and the Sea	High
Surface Water	Negligible
Groundwater	Low
Historic Flood	Not Identified
Flood Defences	Yes
FloodScoreTM – insurance rating	Very High

4.2. SURFACE WATER FLOODING

The Environment Agency surface water flood map Figure 4, shows the site is at a low to risk from surface water flooding.

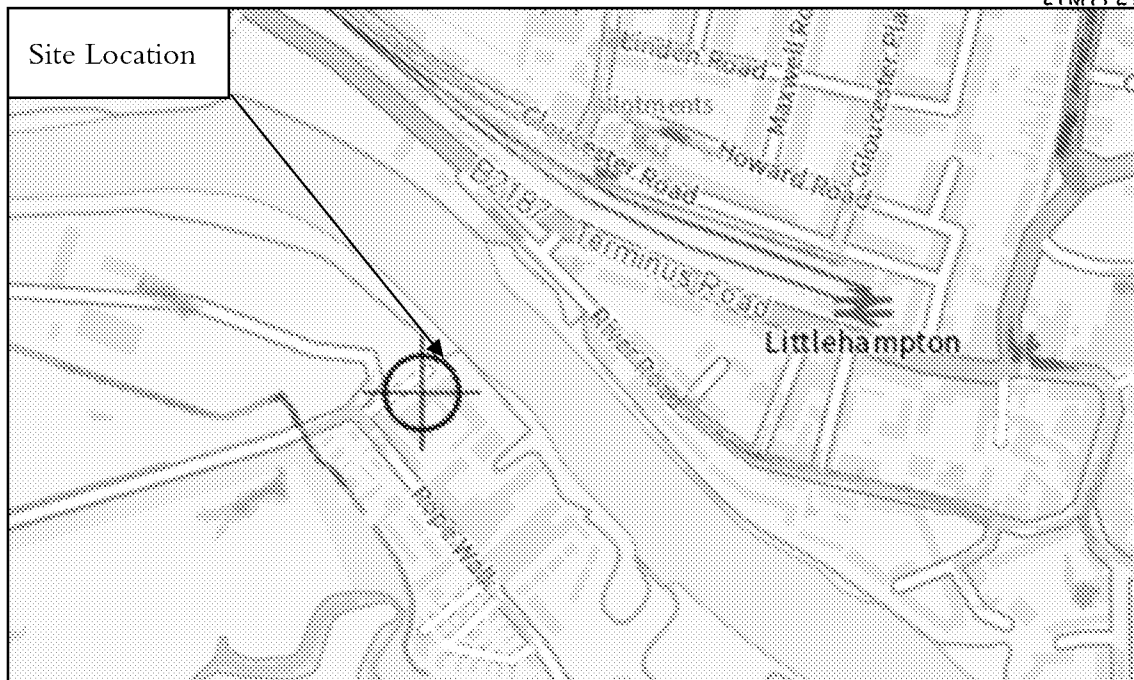


Figure 4: EA Surface Water Flood Map

Where the dark blue shaded area denotes high risk of surface water flooding; the light blue denotes low risk with white areas having very low risk of surface water flooding. The risk classification is comparable with the 'Groundsure' flood report.

4.3. TIDAL AND FLUVIAL FLOODING

The site is classified as having a high risk of flooding from tidal or river sources by the EA mapping and Groundsure flood report.

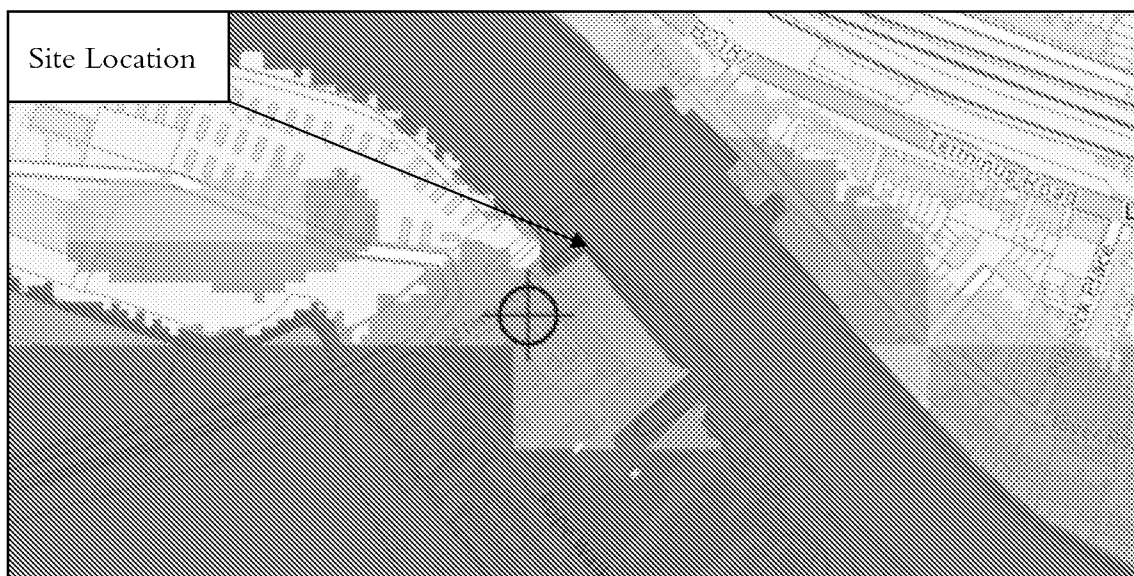


Figure 5: EA Tidal and Fluvial Flood Map

Where the dark blue shaded area denotes high risk of tidal and pluvial flooding; the light blue denotes low risk with the lightest blue areas having a very low risk of surface water flooding.

The jetty is used to launch and recover watercraft and will inevitably be within an area that is associated with flooding. The facility will be used by those experienced and understanding of the risks of water and flooding and the risk should be deemed acceptable due to the proposed use and vulnerability classification as set out by NPPF.

4.4. GROUNDWATER FLOODING

The 'Groundsure' flood report indicates that the site has a low risk of groundwater flooding.

4.5. RESERVOIR FLOODING

The site is at not believed to be at risk of flooding from reservoir sources.

4.6. CANAL AND ARTIFICIAL WATER FLOODING

The site is at not believed to be at risk of flooding from artificial water sources.

4.7. HISTORIC FLOODING

A google search for 'Rope Walk, Littlehampton historic flooding' yielded no definitive flood history. The 'Groundsure' flood report also failed to recognise any historic flooding.

5. FURTHER SITE ASSESSMENT

5.1. SITE ACCESS AND EGRESS ROUTES

Access to the site is proposed via the Rope Walk. The access road is also expected to experience flood risk.

5.2. FLOOD COMPENSATION

Flood compensation is not applicable as the proposed development is replacing an existing jetty as is. The development proposes no flood water be displaced.

5.3. FLOOD WARNING AREAS

The below Figure 6, highlights the areas that are considered to benefit from Environment Agency flood warnings. The site may be partially within the warning area.

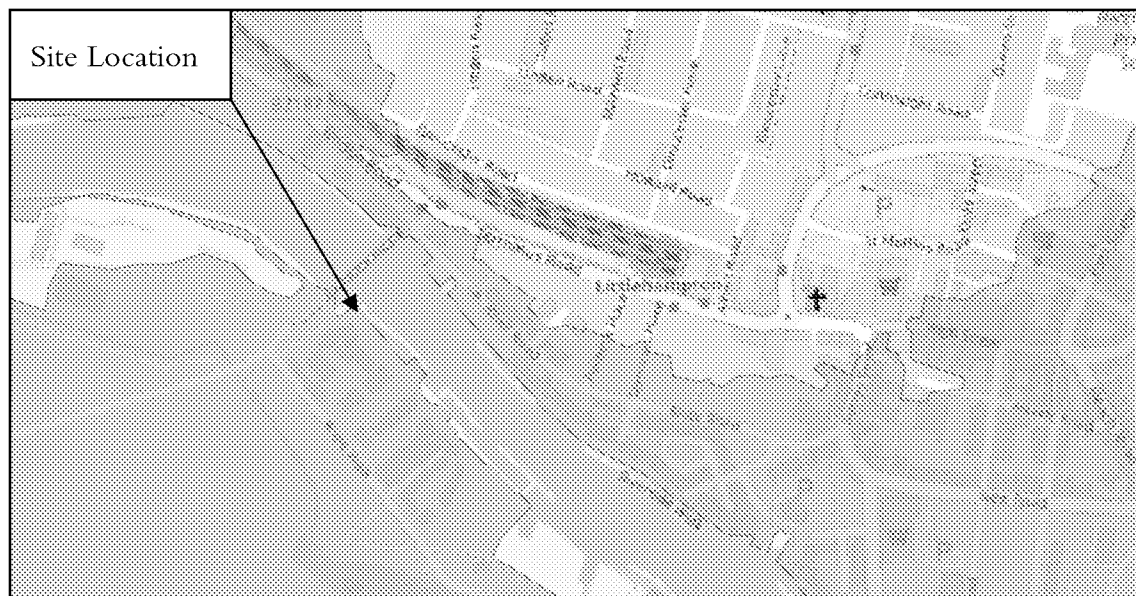


Figure 6: EA Flood Warning Areas

5.4. AWARENESS OF FLOOD RISK

The developer should be aware that the site is not immune from flooding. It is assumed that the persons responsible for the proposed structure are well versed in flood risk and will have their own procedures in place for safe use/working of the facility. It is recommended that persons using the facility take the opportunity to develop emergency and non-emergency plans. Further, it is recommended that anyone responsible for the structure sign up to the EA FloodLine service as soon as available, if applicable.

5.5. SEQUENTIAL TEST

Not applicable, see Figure 2

5.6. EXCEPTION TEST

Not applicable, see Figure 2.

6. FINDINGS AND RECOMMENDATIONS

6.1. FINDINGS

The development plans propose the replacement of an existing jetty. NPPF categorises Jetties as ‘water compatible development’. Water compatible developments are suitable for flood zone 3. The risk of flooding is not negligible but should be found acceptable for the development vulnerability classification, as per NPPF.

6.2. RECOMMENDATIONS

This report recommends the following be considered to lower the risk and/or consequences that flooding may cause to the proposed development:

- Users of the structure should be educated on flood risk and have the ability and resources to forecast large storm events.
- During large, forecasted storm events the structure should not be used unless adequately risk assessed
- Anyone responsible for the structure should sign up to the FloodLine service as soon as possible. Further, the developer / occupier should take this opportunity to ensure that a flood plan is in place.
- A bespoke evacuation plan should be created and incorporated for all users of the land and proposed structure.

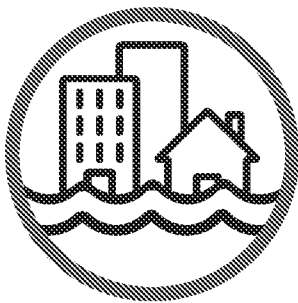
Appendices

Appendix A: Groundsure flood report



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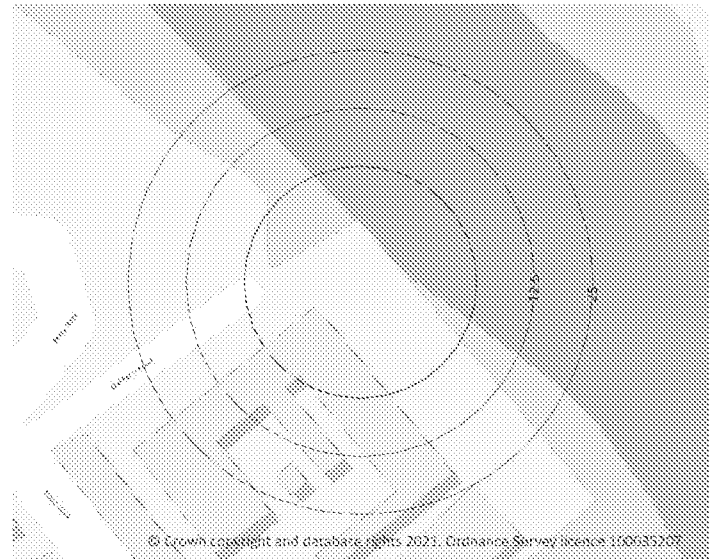
Overall Flood Risk



HIGH

Groundsure Flood complies with relevant Law Society practice notes on flood risk in property transactions.

Site plan



Search Results



Rivers and the Sea

High

page 3



Surface Water

Negligible



Groundwater

Low



Historic Flood

Not identified



Flood Defences

Yes

page 4



FloodScore™ insurance rating

Very High

page 6

Full assessments for other environmental risks are available in additional Groundsure searches including the Groundsure Avista 7 in 1 report. Contact Groundsure or your search provider for further details.

Overview of findings and recommendations

To save you time when assessing the report, we only provide maps and data tables of features within the search radius that we have identified to be of note. These relate to environmental risks that may have liability implications, affect insurance premiums, property values and/or a lender's willingness to lend.

You can view the fully comprehensive library of information we have searched on [page 5](#).



Flood Risk

Flood risk

An elevated level of flood risk has been identified at the property. Key recommended next steps:

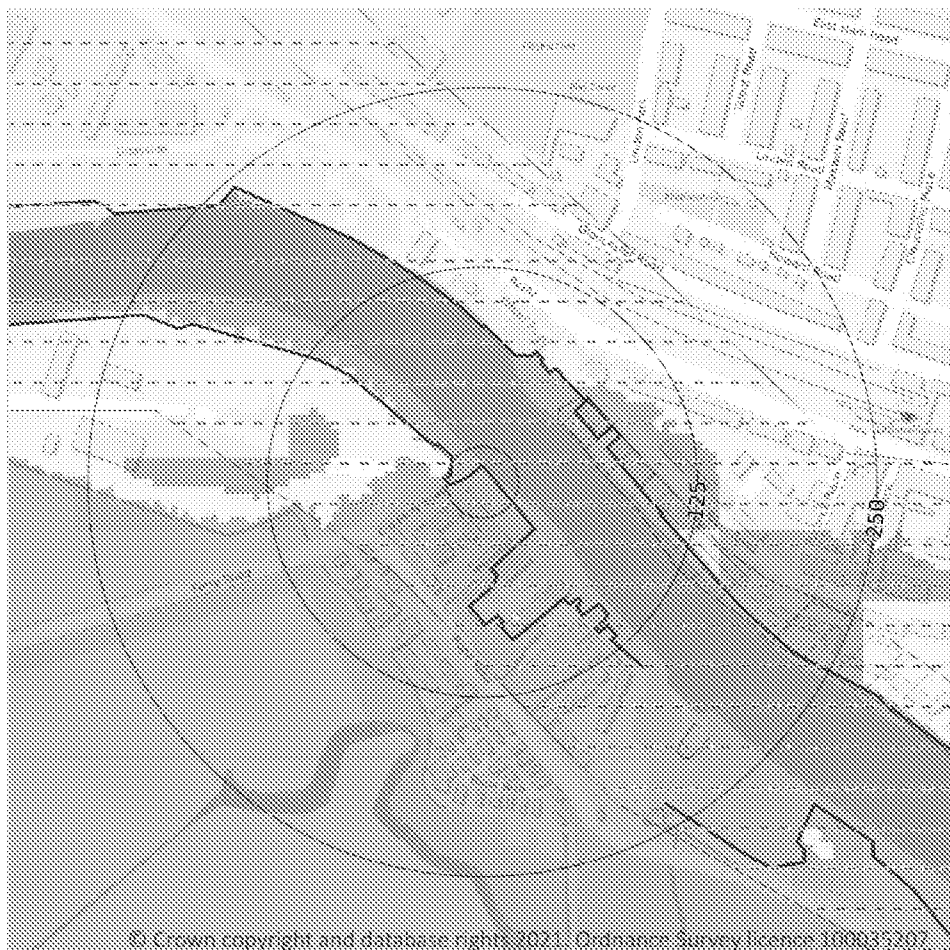
- check to see if the property is eligible for the Flood Re scheme, which enables many properties at risk of flooding to be insured at reasonable rates: [https://www.floodre.co.uk/](#)
- investigate the insurance on offer for the property to ensure any implications on premiums are fully understood before completion
- the assessment in this report is based on the highest flood risk found within the site boundary. The detailed maps within the flood section clearly highlight which parts of the site are affected by flooding, allowing you to visualise whether flood risk affects the buildings or the associated land. If you would prefer an assessment that provides separate flood ratings for the main dwelling and the associated land, Groundsure can provide this for a fee of £35 plus VAT
- if the property has recently been constructed, the flood risk assessment contained within this report will not take into account any measures put in place by the developer to deal with flooding. You should seek further information from the developer on flood risk mitigation for the site
- investigate the various forms of flood resistance and resilience measures that will help protect your property in the event of a flood

Please note this report has been run on a point location buffered to 25m to account for uncertainties of the size of the property. Therefore some risk assessments and measurements may be overestimated.

Flood Risk



Risk of flooding from rivers and the sea



Site Outline
Search buffers in metres (m)

Environment Agency river and coastal flooding:

- High
- Medium
- Low
- Very Low

- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Proposed Flood Defence Scheme
- Flood Defences

Risk of flooding from rivers and the sea

The property has a High chance of flooding in any given year, according to Risk of Flooding from Rivers and Sea (RoFRaS) data. This could cause problems with insuring the property against flood risk. However, if built before 2009, it may be eligible for insurance assistance from the Flood Re scheme: <http://www.floodre.co.uk/>

RoFRaS assesses flood risk from rivers and the sea in England and Wales, using local data and expertise. It shows the chance of flooding from rivers or the sea, taking account of flood defences and the condition those defences are in. The RoFRaS model uses local water level and flood defence data to model flood risk. See below for explanation of the RoFRaS levels of flood risk.

Please see **page 2** for further advice.

Environment Agency RoFRaS risk ratings

Very Low	Low	Medium	High
The chance of flooding from rivers or the sea is considered to be less than 1 in 1000 (0.1%) in any given year.	The chance of flooding from rivers or the sea is considered to be less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) in any given year.	The chance of flooding from rivers or the sea is considered to be less than 1 in 30 (3.3%) but greater than 1 in 100 (1%) in any given year.	The chance of flooding from rivers or the sea is considered to be greater than or equal to 1 in 30 (3.3%) in any given year.

Flood Defences

Flood defences

There are flood defences built in the vicinity of the property. Flood defences seek to reduce the risk of flooding and to safeguard life, protect property, sustain economic activity and the natural environment. Flood defences are designed to protect against flood events of a particular magnitude, expressed as risk in any one year.

Please see **page 2** for further advice.

Proposed flood defences

There are proposed flood defences near to the property. Current flood risk is assessed in the Risk of Flooding From Rivers and the Sea section.

The flood defences have been proposed by the Environment Agency, who have supplied this information to Groundsure.

Please see the map provided to determine whether the property will benefit from the proposed schemes identified.

Distance	Direction	Projected Spend	Standard of Protection	Number of households to benefit	Details
0	on site	Year 1: £278,000 Year 2: £115,000 Year 3: £7,530,000 Year 4: £1,600,000 Year 5: £4,647,000	0	1691	Project Name: Littlehampton Arun Tidal Defences East Bank Project Reference: SOS004E/002B/007A Flood Type: River Flooding

Please note the Risk of Flooding from Rivers and Sea (RoFRaS) section is for risks as they stand at the current time, and will not be affected by the proposed schemes until they are constructed.

Datasets searched

This is a full list of the data searched in this report. If we have found results of note we will state "Identified". If no results of note are found, we will state "Not identified". Our intelligent filtering will hide "Not identified" sections to speed up your workflow.

Flood Risk	
Risk of flooding from rivers and the sea	Identified
Flood storage areas: part of floodplain	Not identified
Historical flood areas	Not identified
Areas benefiting from flood defences	Not identified
Flood defences	Identified
Proposed flood defences	Identified
Surface water flood risk	Not identified
Groundwater flooding	Not identified



Flood information

The Flood Risk Assessment section is based on datasets covering a variety of different flooding types. No inspection of the property or of the surrounding area has been undertaken by Groundsure or the data providers. The modelling of flood hazards is extremely complex and in creating a national dataset certain assumptions have been made and all such datasets will have limitations. These datasets should be used to give an indication of relative flood risk rather than a definitive answer. Local actions and minor variations, such as blocked drains or streams etc. can greatly alter the effect of flooding. A low or negligible modelled flood risk does not guarantee that flooding will not occur. Nor will a high risk mean that flooding definitely will occur. Groundsure's overall flood risk assessment takes account of the cumulative risk of river and coastal data, historic flood events and areas benefiting from flood defences provided by the Environment Agency/Natural Resources Wales (in England and Wales) and surface water (pluvial) and groundwater flooding provided by Ambiantal Risk Analytics. In Scotland the river and coastal flood models are also provided by Ambiantal Risk Analytics.

Risk of flooding from rivers and the sea

This is an assessment of flood risk for England and Wales produced using local data and expertise, provided by Environment Agency. It shows the chance of flooding from rivers or the sea presented in categories taking account of flood defences and the condition those defences are in. The model uses local water level and flood defence data to model flood risk.

Historic flood events

Over 86,000 events are recorded within this database. This data is used to understand where flooding has occurred in the past and provides details as available. Absence of a historic flood event for an area does not mean that the area has never flooded, but only that Environment Agency/Natural Resources Wales do not currently have records of flooding within the area. Equally, a record of a flood footprint in previous years does not mean that an area will flood again, and this information does not take account of flood management schemes and improved flood defences.

Surface water flooding

Ambiantal Risk Analytics surface water flood map identifies areas likely to flood following extreme rainfall events, i.e. land naturally vulnerable to surface water or "pluvial" flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though older ones may even flood in a 1 in 5 year rainstorm event.

Proposed flood defences

The data includes all Environment Agency/Natural Resources Wales's projects over £100K that will change or sustain the standards of flood defence in England and Wales over the next 5 years. It also includes the equivalent schemes for all Local Authority and Internal Drainage Boards.

Flood storage areas

Flood Storage Areas may also act as flood defences. A flood storage area may also be referred to as a balancing reservoir, storage basin or balancing pond. Its purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. These areas are also referred to as Zone 3b or 'the functional floodplain' and has a 5% or greater chance of flooding in any given year, or is designed to flood in the event of

an extreme (0.1%) flood or another probability which may be agreed between the Local Planning Authority and Environment Agency/Natural Resources Wales, including water conveyance routes. Development within Flood Storage Areas is severely restricted.

Groundwater flooding

Groundwater flooding is flooding caused by unusually high groundwater levels. It occurs as excess water emerging at the ground surface or within underground structures such as basements. Groundwater flooding tends to be more persistent than surface water flooding, in some cases lasting for weeks or months, and it can result in significant damage to property. This risk assessment is based on a 5m Digital Terrain Model (DTM) and 1 in 100 year and 1 in 250 year return periods.

Ambiental FloodScore™ insurance rating

The property has been rated as **Very High** risk. Please see **page 2** for further advice.

Ambiental's FloodScore™ risk rating gives an indicative assessment of the potential insurance risk classification from flooding, which can provide an indication of how likely it is that a property's policy will be ceded to Flood Re. The assessment is based on Ambiental's river, tidal and surface water flood data and other factors which some insurers may use in their assessment are not included.

Flood Re is a re-insurance scheme that makes flood cover more widely available and affordable as part of your residential property home insurance. Properties at higher risk of flooding may have the flood part of their policy ceded to Flood Re by their insurer. It is important to understand that Flood Re does not apply to all situations. Exclusions from Flood Re includes properties constructed after 1 January 2009; properties not within domestic Council Tax bands A to H (or equivalent); commercial properties, certain buy to let scenarios and buildings comprising four or more residential units. A full list of the exemptions can be found on the Flood Re website (<https://www.floodre.co.uk/can-flood-re-help-me/eligibility-criteria/>).

The Ambiental FloodScore™ insurance rating is classified into six different bandings:

Very High indicates a level of risk that may make it more likely that standard insurance premiums will be higher, or additional terms may apply to the provision of flood cover. There is a very high possibility that the cover for flooding at the property will be ceded into the Flood Re scheme, particularly if the property has flooded in the past.

High indicates a level of risk that may make it more likely that standard insurance premiums will be higher, or additional terms may apply to the provision of flood cover. There is a high possibility that the cover for flooding at the property will be ceded into the Flood Re scheme, particularly if the property has flooded in the past.

Moderate-High indicates a level of risk that may make it more likely that standard insurance premiums will be higher, or additional terms may apply to the provision of flood cover. There is a moderate possibility that the cover for flooding at the property will be ceded into the Flood Re scheme, particularly if the property has flooded in the past.

Moderate indicates a level of risk that may make it more likely that standard insurance premiums will be higher, or additional terms may apply to the provision of flood cover. There is a low possibility that the cover for flooding at the property will be ceded into the Flood Re scheme, unless the property has flooded in the past.

Low indicates a level of risk that is likely to mean standard cover and premiums are available for flood cover. There is a low possibility the cover for flooding at the property will be ceded into the Flood Re scheme, unless the property has flooded in the past.



Flood

502235 102133

Ref: CMAPS-CM-958905-60191-020521

Your ref: 60191

Grid ref: 502235 102133

Very Low indicates a level of flood risk that should not have any impact on the provision of flood cover for the property.



Groundsure

LOCATION INTELLIGENCE

ARUN DISTRICT COUNCIL LU/108/21/PL

Date: 4 May 2021

Conveyancing Information Executive and our terms & conditions

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