

Northney Marina Hayling Island

Flood Risk Assessment

September 2018



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EXECUTIVE SUMMARY

It is proposed to develop land at Northney Marina and Boatyard with a mixed-use development comprising improved marina facilities, a boathouse, employment space, residential accommodation and public open space.

At present all land proposed for residential development and commercial purposes is in Flood Zone 1. The proposed residential area will remain in Flood Zone 1 throughout its design life of 100years.

Parts of the proposed commercial zone are at risk of flooding when the impact of climate change is considered. However, this will be mitigated by raising the area by an average of approximately 400mm. This will ensure the area remains in Flood Zone 1 throughout its design life. Since the flood risk is tidal, there will be no adverse impact caused by raising ground levels.

By siting proposed residential development on the highest ground within the site, and raising the level of the commercial area, the proposed development meets the requirements set out in the National Planning Policy Framework.

The access road to the site lies within Flood Zone 3 and is at risk of flooding. This could result in emergency vehicles being unable to access the site during times of flood. Since the nature of flooding is forecastable several days in advance, it is proposed to mitigate this risk by means of a robust flood risk management plan. The plan will include the following measures:

- Signing up to the Environment Agency's flood warning service;
- Assessing residents' vulnerability to flood risk to determine whether a 'stay put' or 'evacuate' strategy should be implemented;
- Preparing personal flood plans for residents;
- Preparing business flood plans for commercial enterprises;
- Managing the movement of vehicles from areas at risk of flooding to ground not at risk of flooding.

In addition to this the development will include a dedicated mooring berth for RNLI and other emergency access craft.

The duration of flooding will be limited to hours rather than days and no buildings will be at risk of internal flooding. Therefore, residents and businesses will be able to return to their accommodation and 'business as usual' as soon as the access road is passable

1. INTRODUCTION

- 1.1 This document has been prepared to consider flood risk in relation to the potential redevelopment of land at Northney Marina, Hayling Island, PO11 0NH. The location of the site is shown in Figure 1.



Figure 1 - Location Plan

- 1.2 The existing site consists of a marina, a boatyard, a club building, car parking and a number of ancillary buildings relating to the provision of marina services. The site also includes two slipways as shown in Figure 2.



Figure 2 – Existing Site Plan

- 1.3 A topographic survey of the existing site is included in Appendix A.
- 1.4 The proposal is for a mixed-use development including improved marina facilities, employment space, residential accommodation and public open space as shown in Figure 3.



Figure 3 – Illustrative Masterplan

- 1.5 The Round House was granted permission for a change of use from commercial to residential under application APP/17/01042 in 2017. Therefore, flood risk to this building is not considered in detail in this report.
- 1.6 This Flood Risk Assessment (FRA) has been prepared in accordance with the National Planning Policy Framework (NPPF) (ref: 1-1) and its supporting guidance notes.

2. PLANNING POLICY

- 2.1 The NPPF uses the Sequential Test to allocate development to areas with the lowest risk of flooding. From the flood map included in Figure 4 below it can be seen that the vast majority of the site is not at risk of flooding i.e. is within Flood Zone 1.
- 2.2 An area on the western boundary of the site is shown to be at low risk of flooding and is therefore in Flood Zone 2.
- 2.3 The NPPF Planning Practice Guide sets out what type of development is appropriate in each flood zone. The only development proposed in Flood Zone 2 is the boathouse, which is deemed to be 'water compatible'. All other development is in Flood Zone 1. Therefore, the proposed development passes the Sequential Test.
- 2.4 The Havant Borough Local Plan addresses flood risk in Policy CS15, which states the following:

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

1 - It meets the sequential and exception test (where required) in relation to the NPPF and PPG.

2 - The site is located in a low hazard area as defined in the Strategic Flood Risk Assessment.

3 - A site-specific flood risk assessment demonstrates that the development will be safe, including the access, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

4 - The scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site.

5 - Appropriate flood warning and evacuation plans are in place.

6 - New site drainage systems are designed taking account of events which exceed the normal design standard.

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

- 2.5 This document describes how the proposed development meets the requirements of planning policy.

3. ASSESSMENTS

3.1 The EA FRA Guidance Note 3 (ref: 3-1) sets out a number of assessments that should be undertaken when considering flood risk. The following sections address each assessment.

3.2 **Consideration of whether the site falls within the functional flood plain.** The NPPF Technical Guidance (ref: 3-2) defines the functional floodplain as 'land where water has to flow or be stored in times of flood'. It also states that 'The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual probability of 1 in 20 (5%) or greater in any year...should provide a starting point for consideration and discussions to identify the functional floodplain.'

3.2.1 The extract from the EA flood maps in Figure 4 shows no parts of the site at high risk of flooding i.e. the annual probability of flooding is less than 1 in 30years. Therefore, it is reasonable to conclude that the site is not within the functional floodplain.

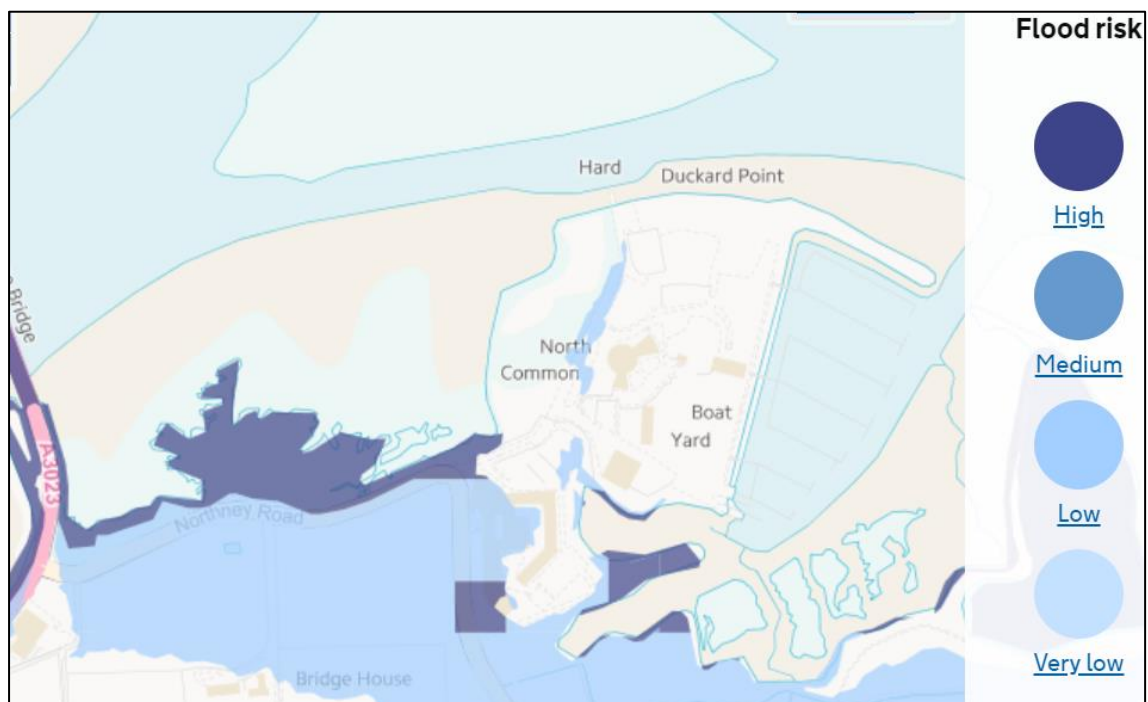


Figure 4 – Predicted Flood Risk

3.3 **Flood alleviation measures already in place.** Correspondence received from the EA (see Appendix B) advises "The coastal protection the Environment Agency maintain adjacent to this site is the earth bank from Langstone Hotel to Northney Marina it has an estimated standard of protection of 1:200 and was found to be in good condition when we last inspected it."

The embankments on the north and west side of the marina are owned and maintained by the site owner. The embankment to the north is in excess of 3.6mAD and the embankment to the west varies in level between 4.1 and 5.1mAD.

3.4 **Information about all potential sources of flooding that may affect the site.** The following sub-sections consider sources of flooding and draw on information included in the SFRAs covering the area information provided by the EA.

- 3.4.1 *Rivers and streams* – the only non-tidal watercourses in the vicinity of the site are a small network of drains immediately to the south. The flood map in Figure 4 indicates these do not pose a flood risk to the site.
- 3.4.2 *The Sea* – the site lies adjacent to the Sweare Deep, a tidal stretch of water flowing into the English Channel. The tide levels shown in the following table are based on the 2011 levels advised by the EA and extrapolated using the latest UK Government recommendations for climate change [ref: 3-3].

Year	Increase in Tide Level (mm/yr)	Tide Level (mAOD)	
		0.5% annual exceedance probability/1 in 200year (Flood Zone 3)	0.1% annual exceedance probability/1 in 1000year (Flood Zone 3)
2011	4	3.300	3.500
2025	8.5	3.356	3.556
2055	12	3.611	3.811
2085	15	3.971	4.171
2120	-	4.496	4.696

Table 3.1 – Predicted Extreme Tide Levels

The potential impact of wave action must also be considered . However, in view of the limited fetch and very shallow depths of water around the proposed buildings, waves are unlikely to exceed 300m in height.

- 3.4.3 *Surface water runoff* – the extract from the EA surface water flood maps shown in Figure 5 indicates that the site is not at risk of flooding from surface water runoff.

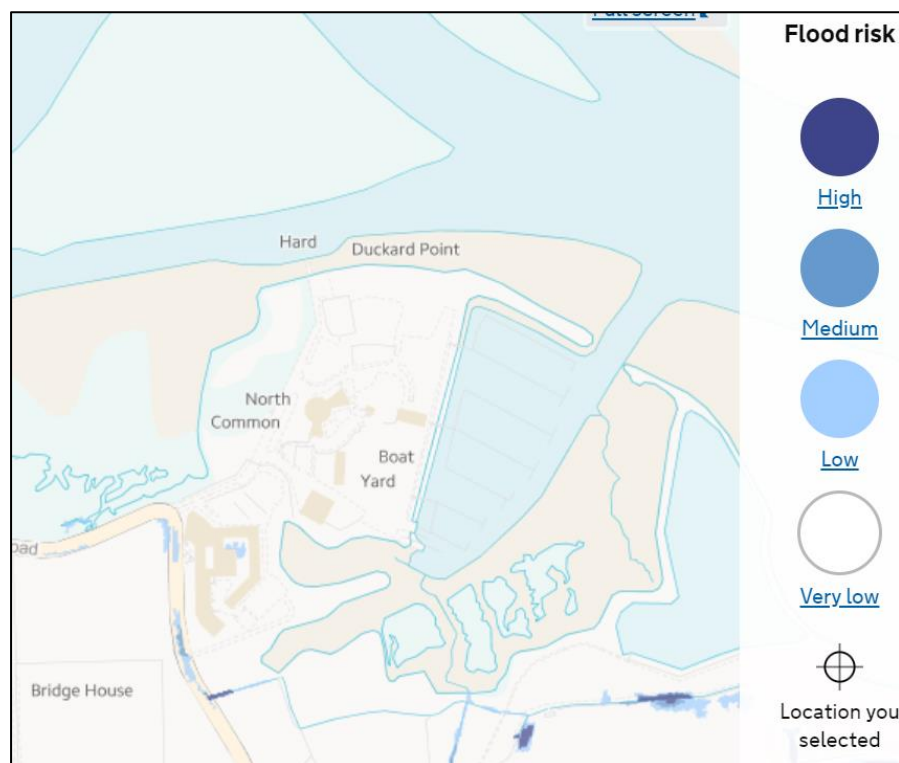


Figure 4 – Predicted Surface Water Flood Risk

3.4.4 *Sewers* – the Surface Water Sewer Flooding map on the PUSH SFRA GIS [ref: 3-4] interface shows no records of flooding from surface water sewers in the area.

3.4.5 *Groundwater* – the Groundwater Flooding map on the PUSH SFRA GIS interface shows no records of flooding from groundwater at the site.

3.5 *The impact of flooding*

3.5.1 *The speed of flooding* – from the above review of sources of flood risk it can be seen that the only significant source is from the sea. The site is generally protected from flooding from this source by virtue of its elevated level. At present the only flow path onto the site is via an access track and slipway on the western boundary.

Since the slipway and track rise up gradually from sea level to site level without undulation, the speed of flooding is directly related to the rate of rise in tide level. The tide range between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS) is 1.2m (1.8mCD – 0.6mCD). Therefore, by inspection the speed of the floodwater will be less than 0.25m/s

3.5.2 *The order in which the location might flood* – the only areas forecast to flood for the present day 200year event are the access routes to the slipways.

Further areas of the site are predicted to be at risk of flooding as a result of the potential impact of climate change. The following table shows the existing and proposed levels for the various types of development within the site, and provides an indication of the year in which they are first at risk of flooding from the 1 in 200year event.

Area	Existing G.L. mAD	Proposed G.L. mAD	Design Life (Years) & Year at End of Design Life	First Year at Risk of Flooding from 1 in 200year Event	Maximum Forecast Flood Depth at End of Design Life (mm)
Boathouse car park	3.9-4.7m	3.9-4.7m	60 (2080)	2079	596
Boathouse for rowing club	4.0m	4.3m	60 (2080)	N/A	N/A
Boat parking	4.2-4.6m	4.2-4.6m	60 (2080)	N/A	N/A
Commercial zone	3.7-4.7m	>4.5m	60 (2080)	N/A	N/A
Boatyard	4.5-5.4m	4.5-5.4m	60 (2080)	N/A	N/A
Low density residential	>5.0m	>5.0m	100 (2120)	N/A	N/A
Marina office & café	>5.0m	>5.0m	60 (2080)	N/A	N/A

Table 3.2 – Order of Flooding

3.5.3 *The likely duration of flood events* – no buildings or car parks within the proposed development are at risk of flooding from the present day 1 in 200year flood event. However, the road network into the site is likely to experience flooding at increasingly frequent intervals. Flood duration will be related to the tidal cycle.

Given the relatively small tidal range and the potential impact of low pressure weather fronts on sea levels it is conceivable that flooding along access roads to the site could last 1-2 tide cycles. The duration of flooding at on-site car parks will be in the order of 1-3 hours.

3.5.4 *The economic, social and environmental consequences of flooding on occupancy of the site.*

Economic Consequences – will be as follows:

- Cost of damage to cars remaining in the car parks;
- Short term loss of earnings to businesses occupying the commercial buildings.

Social Consequences – will be as follows:

- Possible need for vulnerable occupants to evacuate properties for periods of 1-2 days;
- Need for residents to remain within the development for periods of up to 24 hours;
- Lack of access to rowing boat house for periods of 1-2 days.

Environmental Consequences – will be as follows:

- Dispersion of ground level debris;
- Possible flotation of vehicles and consequent leakage of fuel and lubricants (unless mitigated).

3.5.5 *Information on extent and depth of previous flood events or on flood predictions* – the Historic Flood map on the PUSH SFRA GIS interface shows no records of historic flooding at the site, although it is noted that Northney Road has flooded in the past. Information on flood predictions is described throughout this report.

3.5.6 *An assessment of how users of the development can avoid exposure to hazardous flooding in and around the development, including whether safe access and exit can be provided for routine and emergency access under both frequent and extreme flood conditions*

The proposed development will generally be constructed such that it is not at risk of flooding from the 1 in 200 year event at the end of its design life.

Although residents of the proposed dwellings within the development will not be at direct risk of flooding the road network serving the development is presently at risk of flooding from the sea. The frequency of flooding is forecast to increase. This is likely to prevent emergency vehicles accessing the site by road.

A number of measures will be implemented to assist users of the development mitigate the impact of flooding:

- A specific jetty will be provided for the use of RNLI and other emergency rescue craft;
- The jetty will be connected to the main development by means of an access way set above the design flood level;
- A Flood Risk Management Plan will be developed and linked to the Environment Agency's Flood Warning Service. The plan will provide a framework for residents and businesses to assess their own vulnerability to flooding and develop a strategy based on either evacuating the site in advance or seeking refuge within their dwelling. An outline of the plan is included in Appendix C.

3.5.7 *An assessment of how the layout and form of development can be used to reduce or minimise flood risk* – the following aspects will contribute to minimising flood risk:

- The boathouse will be constructed with its finished floor level set above the 1 in 200year flood level at the end of its design life. The building will be constructed following the principles of flood resilient construction set out in the DCLG document Improving the Flood Performance of New Buildings (ref: 3-5);
- Ground levels across the commercial zone will be raised above 4.50mAD;
- New dwellings will be constructed to be flood resistant to a level of 5.10mAD.

3.5.8 *Estimates of how climate change could affect the probability and intensity of flood events* - Climate change is predicted to result in an increase in sea level. Table 3.1 above shows how tide levels are forecast to increase by approximately 1.2m over the lifetime of the proposed development.

3.5.9 *Consideration of the proposal relative to any existing SFRA* – the following SFRAs have been reviewed in compiling this assessment:

- The Partnership for Urban South Hampshire (PUSH) Strategic Flood Risk Assessment of February 2016 and the Havant Borough Council (HBC) SFRA Supplement, dated October 2013;
- The Hampshire Preliminary Flood Risk Assessment dated June 2011 (ref: 3-6).

3.5.10 *Volume of surface water runoff likely to be generated* – the proposed development will not increase the total area of impermeable surfaces, therefore there will be no increase in the volume of runoff from the site.

3.5.11 *Proposals for surface water management* – surface water runoff from the proposed development will be discharged to the marina following suitable treatment in accordance with the principles set out in Section 26 of the SuDS Manual (ref: 3-7).

3.5.12 *Impact of any displaced water* – since the nature of flood risk at the site is tidal there will be no impact on flood risk as a result of raising ground levels.

3.5.13 *Capacity of any drains or sewers* – the drainage system for the proposed development will be designed in accordance with DEFRA's Non-statutory technical standards for sustainable drainage systems (ref: 3-8).

3.5.14 *Potential impact on form or structure of rivers or coastal areas* – the proposed works will not have an adverse impact on the form or structure of rivers or coastal areas.

3.5.15 *Residual risks to the site after the construction of any necessary defences* - the proposed development does not include the construction of any defences.

4. SUMMARY

- 4.1 The majority of the site lies within Flood Zone 1, with only the access to the northern slipway within flood zone 2.
- 4.2 Climate change forecasts indicate that sea levels could potentially rise by up to 1.2m during the lifetime of the development. This would present a flood risk to part of the commercial zone, the boathouse and its car park.
- 4.3 The risk of flooding to the commercial zone and the boathouse would be mitigated by raising ground levels. Therefore, all development will be in Flood Zone 1 throughout its design life.
- 4.4 Since the site is at risk of only tidal flooding there are no constraints on raising ground levels, or the rate of discharge of surface water from the proposed development. However, the proposed drainage system should follow the recommendations of the SuDS Manual to properly manage the quality of runoff from the site.
- 4.5 The road network in the vicinity of the site is at risk of flooding from the present day 1 in 200year event. This will prevent emergency vehicles accessing the site at times of flood. Since the duration of flooding on the road network is likely to be less than 24hours, it is proposed to mitigate this risk with a robust Flood Risk Management Plan (FRMP).
- 4.6 The FRMP will support residents in the development of their own personal flood plans. Residents will be encouraged to assess their vulnerability to flood risk and thereby develop a strategy based on evacuating their dwelling for up to 48hours or remaining on site.
- 4.7 The site is not currently covered by the EA's Flood Warning or Flood Alert services. However, the surrounding area is covered, and it is envisaged that the service could be readily extended to cover the proposed development as the nature of flooding at the site will be predictable many days in advance of the event. This will provide residents and businesses with sufficient time to implement their FRMPs.
- 4.8 The development will include provision of a dedicated berth for access to the site by RNLI and other emergency access craft. The access route from the berth to the residential accommodation will be above the design flood level.

References:

- 1-1 National Planning Policy Framework – Department for Communities and Local Government (July 2018)
- 3-1 EA FRA Guidance Note 3 http://www.environment-agency.gov.uk/static/documents/Utility/FRAGuidanceNote3_v3.1.pdf
- 3-2 Technical Guidance to the National Planning Policy Framework – Department for Communities and Local Government (March 2012)
- 3-3 Environment Agency Climate Change Allowances - <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#types-of-allowances>
- 3-4 Partnership for Urban South Hampshire Strategic Flood Risk Assessment (February 2016) and the Havant Borough Council (HBC) SFRA Supplement (October 2013)
- 3-5 Improving the Flood Performance of New Buildings – Flood Resilient Construction (Department for Communities and Local Government , May 2007)
- 3-6 Hampshire Preliminary Flood Risk Assessment, June 2011
- 3-7 The SuDS Manual (CIRIA, 2015)
- 3-8 Non-statutory technical standards for sustainable drainage systems (DEFRA, March 2015)

APPENDIX A
TOPOGRAPHIC SURVEY



Legend

1. Building Footprint

2. Parking Area

3. Roadway

4. Landscape Area

5. Utility Area

6. Other

Scale: 1:1000

North Arrow

Project Name: [Project Name]

Project Number: [Project Number]

Client: [Client Name]

Design Firm: [Design Firm Name]

Author: [Author Name]

Reviewer: [Reviewer Name]

Date: [Date]

APPENDIX B
CORRESPONDENCE RECEIVED FROM THE EA

Jodie Hall

From: Partnership and Strategic Overview team, HIOW <psohiow@environment-agency.gov.uk>
Sent: 15 March 2016 16:01
To: Jodie Hall
Cc: SSD Enquiries
Subject: Flood Risk Information for Northney Marina - Ref: SSD/3274
Attachments: Flood Map for Planning (Rivers and Sea).pdf; FRA Advisory Text.pdf; Standard Notice.pdf; 10th March 2008 (v1).pdf

Dear Jodie,

Provision of Product 4 for Northney Marina

Thank you for your request to use Environment Agency data, Product 4 , in the development of Northney Marina. The information is attached.

Further details about the Environment Agency information supplied can be found on the GOV.UK website:

<https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments

<https://www.gov.uk/planning-applications-assessing-flood-risk>

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

The site may be affected by an extreme flood. According to our published flood map, which provides a general estimate of the likelihood of flooding across England & Wales, the property is shown to be within Flood Zone 3 - an area which may have a 0.5% chance of flooding annually (1 in 200), **ignoring** the presence and effect of any flood defences.

The Environment Agency is aware of flooding to this area in March 2008, a report detailing this event is attached. Not all flooding events are reported to us and further information may be available from Havant Borough Council.

The coastal protection the Environment Agency maintain adjacent to this site is the earth bank from Langston Hotel to Northney Marina it has an estimated standard of protection of 1:200 and was found to be in good condition when we last inspected it. Further information on any of the other sea defences in this area is available from Havant Borough Council.

Year	Tide Level (mAOD*)	
	0.5% annual exceedance probability/1 in 200 Year (Flood Zone 3)	0.1% annual exceedance probability/1 in 1000 Year (Flood Zone 2)
2011	3.3	3.5
2070	3.8	4.0
2115	4.5	4.6

* Levels in metres above Ordnance Datum Newlyn.

These values are based on 2008 base data, and have been projected for climate change using estimates for sea level rise presented in Table 4 of the Technical Guidance to the National Planning Policy Framework.

Note 1:

Extreme sea level values are for still water sea levels only. Extreme sea level values include the effect of storm surge but do not account for any local increase in sea level that may be induced by onshore wave action. Wave set-up would need to be estimated separately.

Note 2:

Annual exceedance probability describes the likelihood (chance) of being exceeded in any given year.

This information is provided subject to the enclosed *notice*, which you should read.

I hope that we have correctly interpreted your request. Please see the attached Standard Notice or licence for details of permitted use.

We respond to requests for recorded information that we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.

If you have any queries or would like to discuss the content of this letter further please call us on 08708 506506.

If you have any queries or would like to discuss the content of this letter further please contact the Partnership and Strategic Overview Team at the Environment Agency.

Yours faithfully

Aimee Cox

**Partnership and Strategic Overview team, Hampshire and Isle of Wight
Environment Agency**

Direct dial 020 8474 5815

Email psohiow@environment-agency.gov.uk

Part Time Tuesday, Wednesday and Thursday



Planning for the
future of water



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APPENDIX C
EMERGENCY FLOOD PLAN – PRE-PLANNING DRAFT

INTRODUCTION

The purpose of this plan is to set out the procedures to be used for the management of flood risk at the proposed development at Northney Marina. This document provides background to the sources of flood risk and sets a framework for cascading information to individual residents and business owners. It is intended that residents and business owners prepare their own specific flood plans using the information provided in this document. Templates for these flood plans are included in Appendices 1 and 2.

SOURCES OF FLOODING

Northney Road is at risk of flooding from extreme tide levels. It is conceivable that in future parts of the road could, for short periods of time (up to 24hours), experience significant flooding. During such periods there will be no access to or from the site. It is essential that all occupants and users of the site are aware of this risk and plan accordingly.

Areas of the site at risk of flooding during the 1 in 200year flood event, or likely to be at risk of flooding in the future are as follows:

- The Round House car park will be at risk of flooding circa 2054;
- The boathouse car park will be at risk of flooding circa 2079;
- The Round House will be at risk of internal flooding circa 2110.

RESPONSIBILITIES

The Site Manager will be responsible for the following activities:

- Liaison with the Environment Agency (EA) to extend the flood warning service to the site. (The site is not currently at risk of flooding and so is not covered by the service);
- Ensuring all residents, businesses and clubs are aware of flood risk (and mitigation measures e.g. the berth for RNLI craft; the location of flood defence assets, such as flood boards) and have developed their own specific flood risk management plan;
- Disseminating information regarding the Local Planning Authority's flood risk management plan, including the location of emergency accommodation;
- Developing a procedure for moving any vehicles within the site to areas not at risk of flooding during the 200year flood event;
- Carrying out an annual review of the overarching emergency flood plan;
- Implementing the overarching flood plan when flood warnings are received.

Residents will be responsible for the following activities:

- Signing up to the EA's flood warning service when it is extended to the site;
- Assessing their vulnerability to flooding and in particular whether they should evacuate prior to receipt of a flood warning;
- Preparing their own flood risk management plan;
- Implementing their own flood risk management plan.

Business Managers and Clubs/Societies will be responsible for the following activities;

- Signing up to the EA's flood warning service when it is extended to the site;
- Preparing their own flood risk management plan;
- Making arrangements to evacuate/close the premises on receipt of a flood warning;
- Communicating to staff/members when it is safe to return to the premises.

APPENDIX A – TEMPLATE FOR PERSONAL FLOOD PLAN

Personal flood plan

Name



Are you signed up to receive flood warnings?

If not call Floodline on 0345 988 1188 to see if your area receives free flood warnings.

☐

Let us know when you've completed your flood plan by calling Floodline on **0345 988 1188**. This will help us learn more about how people are preparing for flooding.

General contact list	Company name	Contact name	Telephone
Floodline	Environment Agency		0345 988 1188
Electricity provider			
Gas provider			
Water company			
Telephone provider			
Insurance company and policy number			
Local council			
Local radio station			
Travel/weather info			

Key locations

Service cut-off	Description of location
Electricity	
Gas	
Water	

Who can help/who can you help?

Relationship	Name	Contact details	How can they/you help?
Relative			
Friend or neighbour			

Be prepared for flooding. Act now

Personal flood plan

What can I do NOW?



Put important documents out of flood risk and protect in polythene

☐

Look at the best way of stopping floodwater entering your property

☐

Find out where you can get sandbags

☐

Identify what you would need to take with you if you had to leave your home

☐

Check your insurance covers you for flooding

☐

Make a flood plan and prepare a flood kit

☐

Identify who can help you/ who you can help

☐

Understand the flood warning codes

☐

What can you do if a flood is expected in your area?

Actions	Location
Home	
• Move furniture and electrical items to safety	
• Put flood boards, polythene and sandbags in place	
• Make a list now of what you can move away from the risk	
• Turn off electricity, water and gas supplies	
• Roll up carpets and rugs	
• Unless you have time to remove them hang curtains over rods	
• Move sentimental items to safety	
• Put important documents in polythene bags and move to safety	
Garden and outside	
• Move your car out of the flood risk area	
• Move any large or loose items or weigh them down	
Business	
• Move important documents, computers and stock	
• Alert staff and request their help	
• Farmers move animals and livestock to safety	
Evacuation - Prepare a flood kit in advance	
• Inform your family or friends that you may need to leave your home	
• Get your flood kit together and include a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons	

There are a range of flood protection products on the market to help you protect your property from flood damage. A directory of these is available from the **National Flood Forum** at www.bluepages.org.uk

Be prepared for flooding. Act now

APPENDIX B – TEMPLATE FOR BUSINESS FLOOD PLAN



Environment
Agency

would your business stay afloat?

A guide to preparing your
business for flooding



Flooding is the most common and widespread natural disaster in the UK. Since 1998 there has been at least one serious flood every year. Businesses like yours are more likely to be flooded than destroyed by fire. As our climate changes we can expect to see more extreme weather – and more floods.

We aim to reduce the likelihood of flooding by managing land, rivers, coastal systems and flood defences. While we do everything we can to reduce the chance of flooding, it is a natural process and can never be completely eliminated.

By taking action to prepare in advance for flooding, most businesses can save between 20 and 90 per cent on the cost of lost stock and movable equipment, as well as some of the trouble and stress that goes with such an event.

This is a simple guide to some of the easy actions that you can take to make sure that your business is as well prepared as possible.

It tells you about how to find out if your business is at risk, our flood warning service and what our flood warning codes mean. It also has a simple template to use to design a flood plan for your company.

For more information about flooding, visit our website at **www.gov.uk/flood** or call Floodline on **0345 988 1188**.

Make sure that your business is prepared for flooding.

How do I find out if my business is at risk from flooding?

There are two quick and easy ways for you to find out if you're at risk.

call us on
0345 988 1188

Our Floodline service is open 24 hours, calls are charged at local rate. By taking your postcode, our operators will check and see if your business is in a flood risk area.

Look at our website
www.gov.uk/flood

You need to be aware of flooding and keep an eye on the water levels and weather situation at all times. You can do this by checking the flood forecasts and the river and sea levels on our website.

Our online flood map uses the latest technology and data gathered over many years to give the most accurate view of flooding in your area.

By entering your postcode you can find out if your business is at risk. Areas at risk from flooding are shown in dark blue and areas at risk from extreme flooding in light blue.

My business is at risk from flooding. What should I do now?

Start preparing now. If the weather conditions are right, flooding can happen at any time.

Remember, floods can happen at any time and any day – make sure you provide a number that can be contacted at all times – even out of working hours.

Sign up for flood warnings.

The first thing you should do is find out if you can receive flood warnings. In areas of high flood risk, we offer a service called Floodline Warnings Direct. This is a free, 24 hour service that sends automated flood warnings by telephone, SMS text, email, fax or pager.

To find out if you can receive this service, call Floodline on 0345 988 1188.

If your business isn't in an area covered by our warnings you can still check the latest flood warnings in force on our website.

When the situation is serious, flood warnings will also be broadcast on local television and radio news.

What practical steps can I take to protect my business?

Now that you've checked your risk and found out about flood warnings, it's time to start thinking about preparing a flood plan specifically for your business.

Taking simple steps can go a long way to protecting your business from flooding. Preparing a flood plan could:

- Significantly reduce financial losses, damage to property and business interruption;
- Help compliance with regulatory requirements (for example, Occupier's Liability Act 1984);
- Reduce exposure to civil or criminal liability;
- Enhance your company's image and credibility with employees, customers, suppliers and the community;
- Help fulfil your moral responsibility to protect employees, the community and the environment;
- Help you to obtain insurance cover.

What is a flood plan?

Just as many businesses have health and safety policies and contingency plans for an emergency, they should also have flood plans.

A flood plan is a written document that outlines how your business will respond to a flood.

This might include a list of steps you will take in case of a flood and the order you will take them in. It could also include the purchase of flood products and insurance.

A written plan can make information **easy** to access during a flood, **easy** to communicate to staff, and **easy** to remember.

Small businesses should make sure there is a plan of action in case of flooding. As the business owner, this may be your responsibility.

If your business is **medium sized**, flood preparation might be the responsibility of a team of people from different areas of the business.

If your business decides to have a flood planning team, this could be led by the business owner or Managing Director.

The leader of the flood planning team will need to let staff know about the plan once it is finished.

All members of the team should also keep a copy of important flood contacts at home for easy access.

Key areas to consider in your flood plan are:

- human resources;
- maintenance/facilities;
- finance and purchasing.

Once you have completed your plan don't forget about it. Look at it regularly and make sure it is up to date and in the event of a flood **use it**.



business flood plan



A written flood plan is recommended for businesses.

It should include:

- A list of important contacts, including Floodline, building services, suppliers and evacuation contacts for staff;
- A description or map showing locations of key property, protective materials and service shut-off points;
- Basic strategies for protecting property, preventing business disruption and assisting recovery;
- Checklists of procedures that can be quickly accessed by staff during a flood.

If a flood is imminent, your main priority is to make sure that your staff are safe. However there may be other actions that you can take to prepare your building and it's contents to minimise damage and post-flood repair and restoration costs.

Business flood plan

Flood plan for _____ dated _____

Registered address _____

Postcode _____

Staff contact list

Name	Address	Telephone/mobile	Emergency contact	Emergency telephone and address

Note staff who may require assistance in the event of a flood.

Name	Office location

Key locations

Service cut-off	Description of location
Electricity	
Gas	
Water	

Answer the following if applicable

	Description of location	How to protect from a flood (for example, move, cover, tie down)
First Aid Kit		
Oil based products (gasoline, oil, cooking oil etc.)		
Chemicals (including cleaning products)		

Protective actions

Identify stock, equipment and possessions that may need special protective measures, and describe the actions you will take to prevent damage in the event of a flood. We have suggested items and ways to protect them, but make sure you follow through on your plans.

think about:

- Computers;
- Tables / heavy furniture;
- Vehicles;
- Paper files;
- Electrical items;
- Chairs / stools;
- Databases;
- Soft furnishings;
- Computer files;
- Staff files.

ways to protect items

- Make a copy of important documentation and store in safe location;
- Raise items above ground level;
- Buy flood protection products;
- Buy new flood-resistant items;
- Move items to a safer location if possible – to an upper level of the building or off site.

Valuable item	Protective action	New location (if applicable)	Done
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Suggested basic building materials to help protect your property

If materials are not needed, leave the relevant section blank

Materials	Used for	Items to protect / where to use	Storage location	Done
Sand and sand bags (unfilled), shovel	Creating flood barriers (used with plastic sheeting)			☐
Tools – hammer, nails, saw	Boarding up doors, windows and openings, creating shelves			☐
Wood – plywood, blocks of wood	Boarding up doors, windows and openings, creating shelves			☐
Sturdy plastic sheeting	Sandbag barriers, pulling up around furniture and appliances			☐
Strong plastic bags	Putting around legs of tables and chairs			☐
Pallets	Raising stored stock above flood level			☐
Emergency power generator	Maintaining function of air conditioning units (can help dry out a building), running fridges and freezers, medical equipment if appropriate			☐

Identify people who can help you before, during and after a flood, and what they can do.

We have suggested ways they might be able to help, but you'll need to discuss this with them.

Name	Address	Telephone day	Telephone evening	Mobile

Ways people can help

- assistance with installing flood products;
- assistance with transporting stock/materials to new location if possible;
- provision of emergency storage;
- provision of emergency supplies or medical support if required.

discussion guide

This discussion guide sums up the key areas of flood planning. Some of this information can be found in this pack to help get you started.



Research

- Look at your existing business policies, and think about whether they are appropriate in the event of a flood.

Staff

- Make a list of **employees' contact details in the event of an evacuation**. This might include mobile telephone numbers, or numbers for their home or the home of a friend or relative;
- Think about staff who **may need special assistance** in the event of a flood (for example, elderly, deaf, blind etc.)

Security procedures

- **Locking windows, doors and setting the alarm**. You might need more than one person to help do this;
- Insurance policies – **Are you insured for flood damage**, business interruption and lost revenue?
- Employee manuals – You might **add flood safety to staff information packs**, or adapt job descriptions to include flood warden duties;
- Hazardous materials plan – You must ensure that **chemicals, oils and other substances in your possession are kept safe** and do not contaminate flood water;
- Health and safety assessment – Plan to **check the functioning of flood products and flood warning systems regularly**, just as you do for fire safety equipment.

Check codes and regulations that might apply to your business in the event of a flood. The following could provide guidance on the right actions to take:

- Occupational health and safety regulations;
- Environmental regulations.



Important contacts

Make a list of important telephone numbers, including contacts for gas, electricity, water and telephone providers.

Key locations

- **Know the location** of cut-off points for gas, electricity and water. Ideally, these should be marked on a map that is stored with your flood plan;
- Know the location of chemicals, oils or other materials that could be dangerous or contaminate flood water. These should be stored safe from floods and other damage.

Protective actions

- Note key stock, equipment and possessions that may need special protection from flood water;
- Consider things you may need during or after a flood (for example, sandbags, plastic sheeting, loudspeaker);
- See if it's **possible to move key operations**, such as shipping or customer services, to another building.

Suppliers and external links

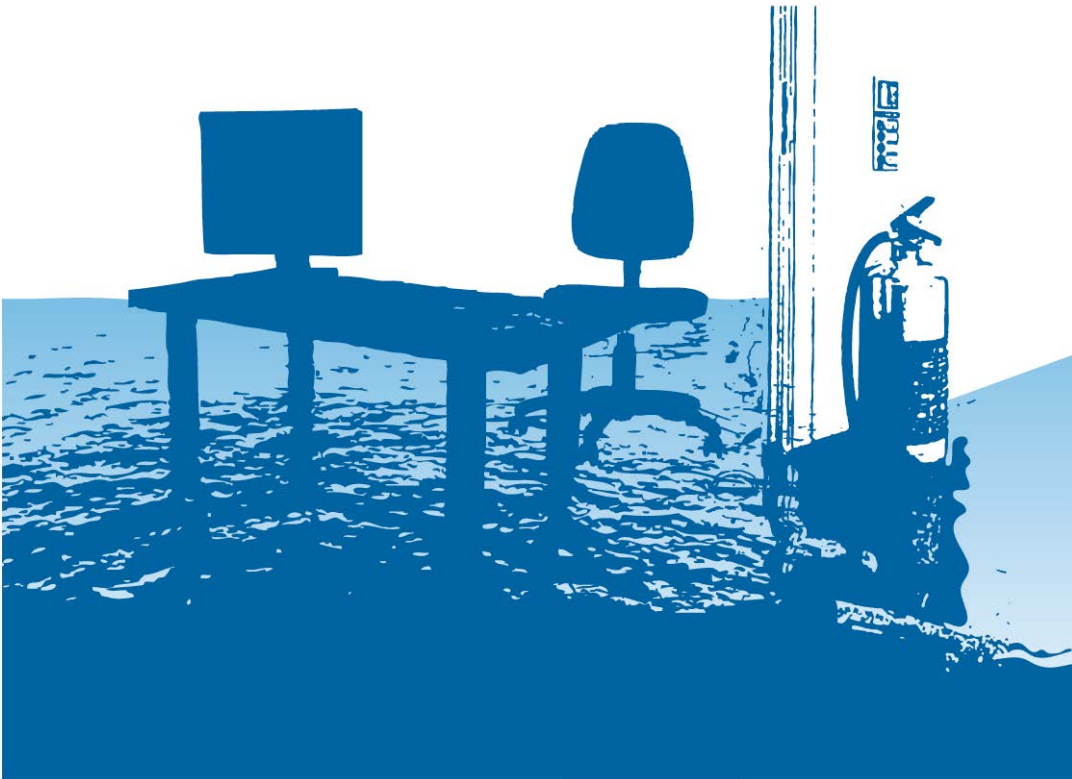
- Identify products and services you won't need in the event of a flood, or which suppliers may not be able to provide. **Make back-up plans** or arrangements for short-notice cancellation of deliveries;
- Consider contracting in advance with companies whose help you may need after a flood.

business checklist

Are you prepared for flooding?

If you answer no to any of the questions overleaf, there may be more you can do to protect your business.

The individual sections will give you valuable information on effective actions you can take to prepare for a flood.



If you can answer yes, please ☒, otherwise leave blank for no.

Know if you're at risk

- ☐ Do you know if you're at risk of flooding?
- ☐ Are flood warnings available in your area?
- ☐ Do you know how you can receive flood warnings?

Preparing a flood plan

- ☐ Do you know how your business will respond to a flood?
- ☐ Do you have a list of useful numbers including Floodline, local authority and insurance company?
- ☐ Do you know how to shut off your gas/electric/water supplies?
- ☐ Are your stock, fittings and valuable equipment stored above flood level?
- ☐ Have you developed flood contingency plans with suppliers and/or clients?
- ☐ Can you call someone to help you in the event of a flood?

Staff training and evacuation

- ☐ Are you aware of correct flood safety procedures for you and your staff?
- ☐ Have you trained your staff on flood safety procedures?
- ☐ Can your staff work quickly and efficiently to protect your business in the event of a flood?

Protecting your property

- ☐ Have you installed flood protection products?
- ☐ Do you have a stockpile of useful materials including plywood, plastic sheeting, sandbags (unfilled), sand, nails, hammer, shovel, blocks of wood and a saw?
- ☐ Have you installed non return valves in your toilets and drains?
- ☐ Do you and your staff have high ground where you can park your cars?
- ☐ Are your electrical sockets above flood level?
- ☐ Do you have computer equipment in the basement?

Flood insurance

- ☐ Do you have sufficient insurance cover in the event of a flood situation?
- ☐ Do you know what information your insurer will require to support a claim?

Evacuation

- ☐ Do you have an easy way to let your staff know about an evacuation?
- ☐ Do you know which roads will stay open in your area during a flood?
- ☐ Have you identified where staff can shelter in the event of a flood?
- ☐ Could you control staff panic during a flood?

understand your flood warning codes

Our warning service has three types of warnings - Flood Alert, Flood Warning and Severe Flood Warning - that will help you prepare for flooding and take necessary actions.

ONLINE FLOOD RISK FORECAST

What it means

Be aware.
Keep an eye on the weather situation.

When it's used

Forecasts of flooding on the Environment Agency website are updated at least once a day.

What to do

- Check weather conditions.
- Check for updated flood forecasts on our website.



FLOOD ALERT

What it means

Flooding is possible.
Be prepared.

When it's used

Two hours to two days in advance of flooding.

What to do

- Be prepared to act on your flood plan.
 - Prepare a flood kit of essential items.
 - Monitor local water levels and the flood forecast on our website.
-



FLOOD WARNING

What it means

Flooding is expected.
Immediate action required.

When it's used

Half an hour to one day
in advance of flooding.

What to do

- Move staff, stock and valuables to a safe place.
 - Turn off gas, electricity and water supplies if safe to do so.
 - Put flood protection equipment in place.
-



SEVERE FLOOD WARNING

What it means

Severe flooding.
Danger to life.

When it's used

When flooding poses a
significant risk to life.

What to do

- Stay in a safe place with means of escape.
 - Be ready should you need to evacuate.
 - Co-operate with the emergency services.
 - Call 999 if you are in immediate danger.
-

WARNING NO LONGER IN FORCE

What it means

No further flooding is
currently expected in
you area.

When it's used

When river or sea
conditions begin to
return to normal.

What to do

- Be careful. Flood water may still be around for several days.
 - If you've been flooded, ring your insurance company as soon as possible.
-

useful contacts

Fill in the contact details you may need if your business floods.
Keep it in a safe place, where you can hold of it quickly.

	Company name	Telephone number/s
Environment Agency Floodline		0345 988 1188
Electricity supplier and meter number		
Gas supplier and meter number		
Water supplier and meter number		
Telephone provider		
Local authority emergency services		
Insurance company 24-hour number and policy number		
Insurance agent		
Local radio station for news alerts and weather updates		
Companies that may be able to help you after a flood		
Electrician		
Plumber		
Builder		
Equipment repair/suppliers		
Security services		
Water pumping services		
Emergency power suppliers		

**Would you like to find out more about us,
or about your environment?**

Then call us on

08708 506 506* (Mon-Fri 8-6)

email

enquiries@environment-agency.gov.uk

or visit our website

www.gov.uk/environment-agency

incident hotline 0800 80 70 60 (24hrs)

floodline 0345 988 1188 (24hrs)

*** Weekday Daytime calls cost 8p plus up to 6p/min from BT Weekend Unlimited. Mobile and other providers' charges may vary.**



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