

Appendix C Environment Agency's Data and Information

Sohan Ghimire
UK Flood Risk
18 St Nicholas Road
Plumstead
London
SE18 1HJ

Our ref: SSD112624
Your ref:
Date: 29/01/2019

Dear Sohan Ghimire,

Enquiry Regarding Product 4 for Flood Risk Assessment for Station Road, Ford, BN18 0BS

Thank you for your enquiry which was received on 05 January 2019.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. The information is attached.

The information on Flood Zones in the area relating to this address is as follows:

The site is in an area located within Flood Zone 3 as shown on our Flood Map for Planning (Rivers and Sea).

Note - This information relates to the area that the above named property is in and is not specific to the property itself as it is influenced by factors such as the height of door steps, air bricks or the height of surrounding walls. We do not have access to this information and is not currently used in our flood modelling.

Flood Zone definitions can be found at www.gov.uk/guidance/flood-risk-and-coastal-change#Table-1-Flood-Zones

Please note that according to Arun Strategic Flood Risk Assessment (2016) the site is partially within Flood Zone 3b (functional flood plain, defined as the defended case 1 in 20-year annual probability - 5% Annual Exceedance Probability - event).

As stated in Table 1 (Flood Zones) of the Planning Policy Guidance (PPG) to the National Planning Policy Framework (NPPF) this zone comprises land where water has to flow or be stored in times of flood. According to Table 3 (Flood Risk Vulnerability) of the PPG, only Essential Infrastructure and Water Compatible uses are permitted in this zone, and only if the Exception Test has been passed.

Flood Defences

Raised flood embankments on the East bank of the River Arun offer protection from the River Arun. The standard of protection is estimated between 1in75yr and 1in200yr. Please refer to the Lower Tidal River Arun Strategy for more information.

Model Information

The model used for fluvial flood risk was the Lower Tidal River Arun Strategy (LTRAS) which was completed by Atkins in 2010. The tidal model was the Emsworth to Littlehampton coastal model completed by JBA Consulting in 2016.

Flood History

We hold no record of previous flooding events affecting this site.

Please note our records are not comprehensive and may not include all events. I recommend contacting the Lead Local Flood Authority, **West Sussex County Council** or the Local Authority, **Arun District Council** for a more comprehensive flood history check.

FRA advisory text

Name	Product 4
Description	Detailed Flood Risk Assessment Map for Station Road, Ford, BN18 0BS.
Licence	<u>Open Government Licence</u>
Information Warnings	Climate Change allowances for this model only show the superseded 20% increase in flows. The current allowances should be checked here: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances .
Information Warning - OS background mapping	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.</i>
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. Contains Ordnance Survey data © Crown copyright 2018 Ordnance Survey 100024198.

Data Available Online

Many of our flood datasets are available online:

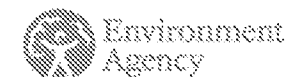
- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours sincerely,

Eleonora Pilla
Flood and Coastal Risk Management Officer
Partnership & Strategic Overview
West Sussex

Flood Map for Planning (Rivers and Sea) created 25/01/2019



Scale 1: 10,000



Flood Map for Planning (Rivers & Sea)

- Sealed Main Rivers
- Defences
- Flood Storage Areas
- Areas benefiting from flood defences
- Flood Zone 3
- Flood Zone 2

Flood Map Areas (assuming no defences)

Flood Zone 3 shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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Product 4 Flood Risk Data Requested by: UK Flood Risk

Site: Station Road, Ford, BN18 0BS

Table 1: Water Levels: Fluvial Undefended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	5%	1%	1% +CC*	0.1%
1	500270	104087	2.00	2.10	3.29	2.44
2	500269	104193	-	-	-	-

Table 2: Water Levels: Fluvial Defended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Defended Annual Exceedance Probability			
	Eastings	Northings	5%	1%	1% +CC*	0.1%
1	500270	104087	2.00	2.10	2.22	2.26
2	500269	104193	-	-	-	-

Table 3: 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	500270	104087	2.68	3.21	4.04	2.88
2	500269	104193	-	-	4.05	-

Table 4: Water Levels: Tidal Defended

Node Ref	NGR		Modelled Flood Levels in Metres AOD			
			Defended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	500270	104087	-	-	2.04	-
2	500269	104193	-	-	-	-

Table 5: Water Depths: Fluvial Undefended

Node Ref	NGR		Modelled Flood Depths in Metres			
			Undefended Annual Exceedance Probability			
	Eastings	Northings	5%	1%	1% +CC*	0.1%
1	500270	104087	0.12	0.21	1.41	0.56
2	500269	104193	-	-	-	-

Table 6: Water Depths: Fluvial Defended

Node Ref	NGR		Modelled Flood Depths in Metres			
			Defended Annual Exceedance Probability			
	Eastings	Northings	5%	1%	1% +CC*	0.1%
1	500270	104087	0.12	0.22	0.34	0.37
2	500269	104193	-	-	-	-

Table 7: 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	500270	104087	0.76	1.29	2.12	0.96
2	500269	104193	-	-	0.48	-

Table 8: Water Depths: Tidal Defended

Node Ref	NGR		Modelled Flood Depths in Metres			
			Defended Annual Exceedance Probability			
	Eastings	Northings	0.5%	0.5% (2070)	0.5% (2115)	0.1%
1	500270	104087	-	-	0.13	-
2	500269	104193	-	-	-	-

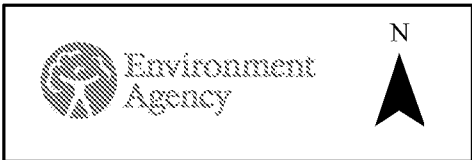
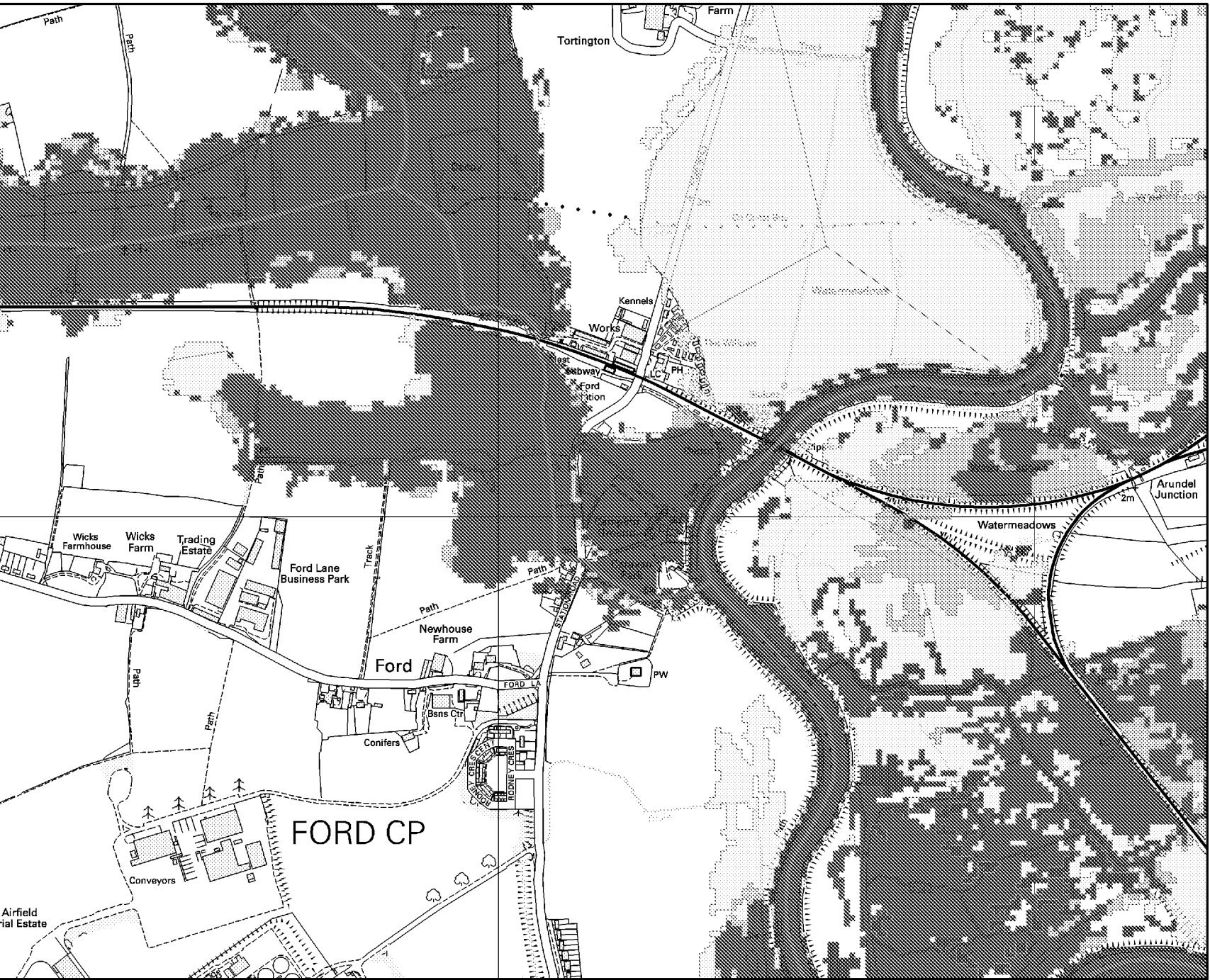
All fluvial levels taken from: 2010 Lower Tidal River Arun Strategy (LTRAS).

All tidal levels taken from: 2016 Emsworth to Littlehampton coastal model.

Produced on: 29/01/2019

*** Climate Change allowances for this model only show the superseded 20% increase in flows. The current allowances should be checked here: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>.**

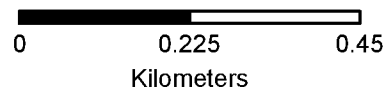
There is no additional information or health warnings for these levels/depths or the model from which they have been produced.

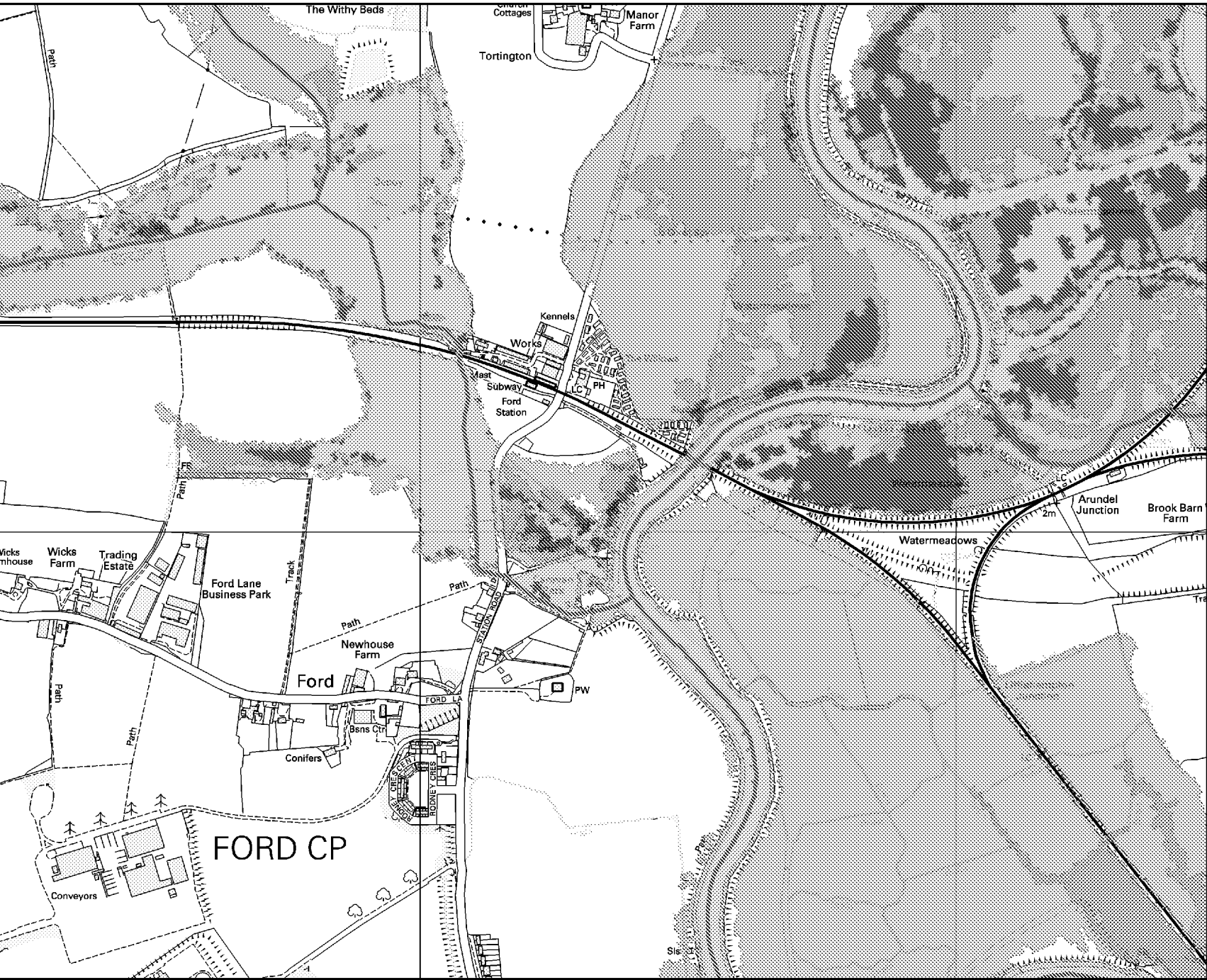


- Legend**
- Main River
 - 5% AEP (Defended Fluvial)
 - 1% AEP (Defended Fluvial)
 - 1% AEP Plus Climate Change (Defended Fluvial)
 - 0.1% AEP (Defended Fluvial)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000







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Legend

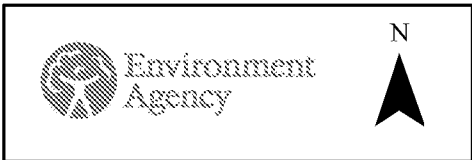
- Main River
- 0.5% AEP (Defended Tidal)
- 0.1% AEP (Defended Tidal)
- 0.5% AEP (2070) NPPF (Defended Tidal)
- 0.5% AEP (2115) NPPF (Defended Tidal)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000

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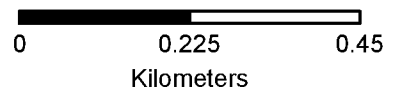
Kilometers

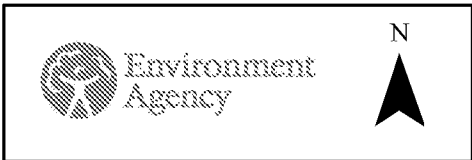
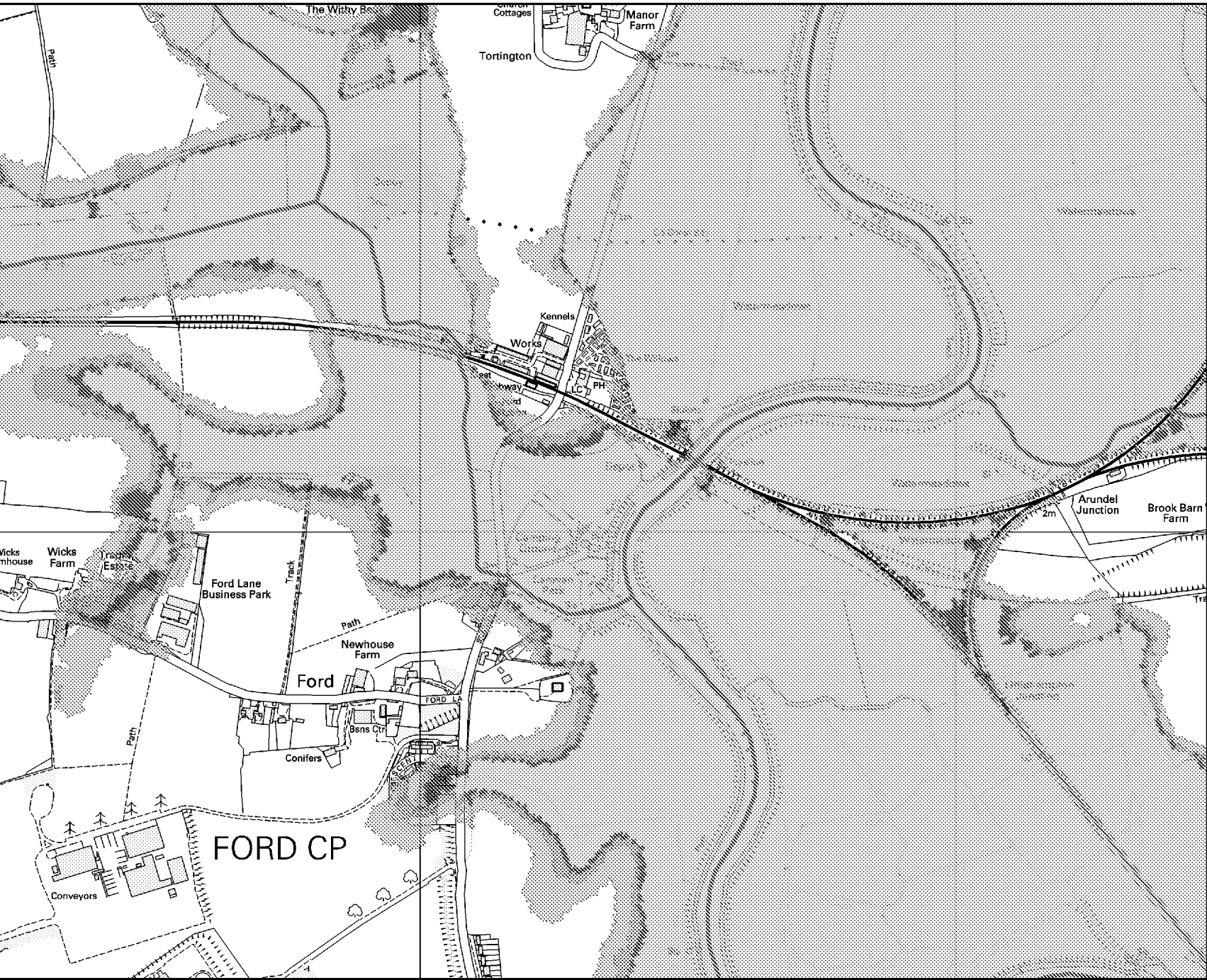


- Legend**
- Main River
 - 5% AEP (Un defended Fluvial)
 - 1% AEP (Un defended Fluvial)
 - 1% AEP Plus Climate Change (Un defended Fluvial)
 - 0.1% AEP (Un defended Fluvial)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000

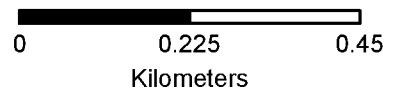




- Legend**
- Main River
 - 0.5% AEP (Undefended Tidal)
 - 0.1% AEP (Undefended Tidal)
 - 0.5% AEP (2070) NPPF (Undefended Tidal)
 - 0.5% AEP (2115) NPPF (Undefended Tidal)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000





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Legend

 Main River

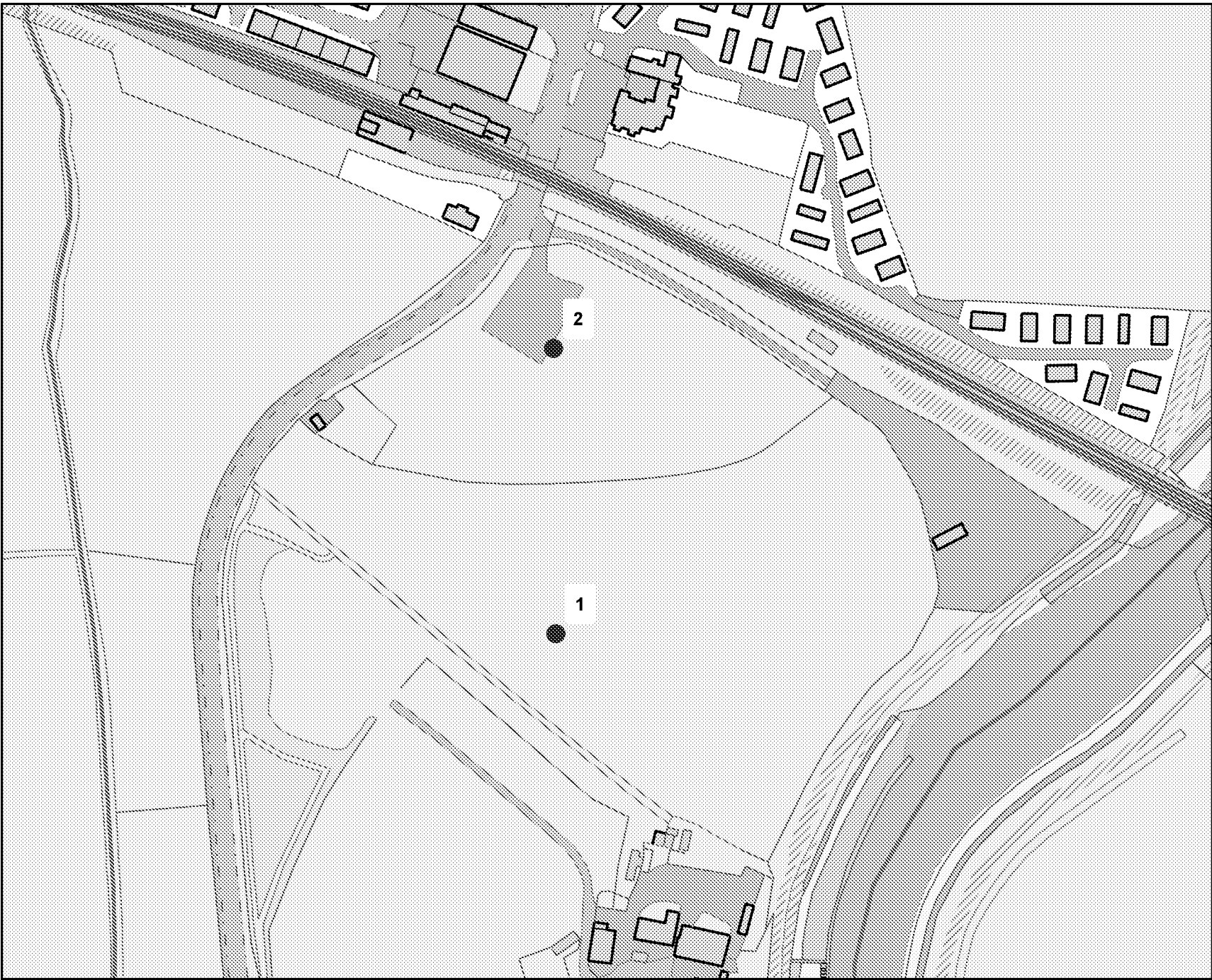
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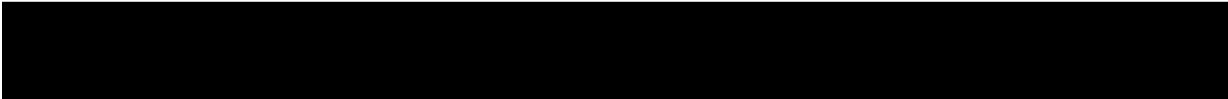
Kilometers



Use of Environment Agency Information for Flood Risk Assessments

Important

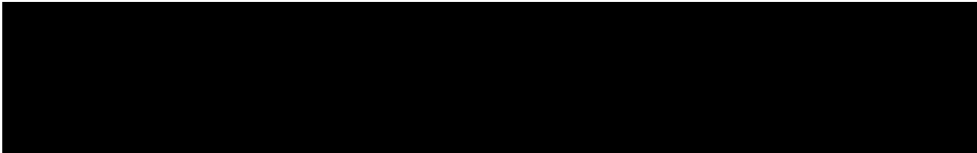
The Environment Agency are keen to work with partners to enable development which is resilient to flooding for its lifetime and provides wider benefits to communities. If you have requested this information to help inform a development proposal, then we recommend engaging with us as early as possible by using the pre-application form available from our website:



We recognise the value of early engagement in development planning decisions. This allows complex issues to be discussed, innovative solutions to be developed that both enables new development and protects existing communities. Such engagement can often avoid delays in the planning process following planning application submission, by reaching agreements up-front. We offer a charged pre-application advice service for applicants who wish to discuss a development proposal.

We can also provide a preliminary opinion for free which will identify environmental constraints related to our responsibilities including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

In preparing your planning application submission, you should refer to the Environment Agency's Flood Risk Standing Advice and the Planning Practice Guidance for information about what flood risk assessment is needed for new development in the different Flood Zones. This information can be accessed via:



You should also consult the Strategic Flood Risk Assessment or other relevant materials produced by your local planning authority.

You should note that:

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment (FRA) where one is required, but does not constitute such an assessment on its own.
2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or surface water runoff. Information produced by the local planning authority referred to above may assist here.
3. Where a planning application requires an FRA and this is not submitted or is deficient, the Environment Agency may raise an objection.



Solent & South Downs Area

Pre-application Advice Note

March 2017

This document sets out the environmental issues we will consider when providing our planning application consultation advice to Local Councils. It can be used by applicants, developers and consultants at the pre-planning stage.

Fluvial Flood Risk

Development must be safe and should not increase the risk of flooding.

You can view a site's flood zone on the Flood Map for Planning on our website:

<http://apps.environmentagency.gov.uk/wivby/37837.aspx>

If your proposed development is located within flood zone 2 or 3 you should consult the Flood Risk and Coastal Change pages of the National Planning Policy Guidance (NPPG)

<http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/>

Here you can determine whether the flood risk vulnerability of your proposed development and the flood zone are compatible. You can also establish if there are flood risk sequential test and exception test requirements for your proposed development. In the first instance we recommend the developer/applicant liaises with the Local Planning Authority (LPA) to undertake the Sequential Test in accordance with the National Planning Policy Framework (NPPF).

If your proposed development is located within flood zone 2 or 3 and its vulnerability and flood zone are considered acceptable under the NPPG then a site specific Flood Risk Assessment (FRA) is required to support any subsequent planning application. This is required by paragraph 103 of the NPPF:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf

Guidance on the content of a site specific FRA can be found in the NPPG and on the .gov website:

<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

More detailed flood risk modelling data is available to help you produce a FRA then contact our Customers and Engagement team at SSDenquiries@environment-agency.gov.uk.

Climate Change Allowances

On 19 February 2016, we published new guidance for planners and developers on how to use climate change allowances in a site-specific FRA: <https://www.gov.uk/guidance/flood-risk-assessments-climatechange-allowances>

<https://www.gov.uk/guidance/flood-risk-assessments-climatechange-allowances>

If you have any questions regarding this guidance, please contact our Customers and Engagement team:

SSDenquiries@environment-agency.gov.uk.

Groundwater Quality

Development must not cause pollution to the water environment.

Source Protection Zones

We have defined Source Protection Zones (SPZs) for 2000 groundwater sources such as wells, boreholes and springs used across the country for public drinking water supply. These zones are more sensitive to contamination from activities that might cause pollution in the area. The closer the activity, the greater the risk.

SPZ1s are the areas designated as most at risk from contamination and development activities and in these areas we may consider it inappropriate for development to discharge foul or surface water into the ground.

To see if your proposed development is located within a Source Protection Zone, please use our online map: <http://apps.environment-agency.gov.uk/wiyby/37833.aspx>

Contaminated land

The NPPF takes a precautionary approach to land contamination. Before the principle of development can be determined, land contamination should be investigated to see whether it could preclude certain development due to environmental risk or cost of remediation.

Where contamination is known or suspected, a desk study, site investigation, remediation and other works may be required to enable safe development (paragraph 121 of the NPPF). Minimum requirements for submission with a planning application are a preliminary risk assessment, such as a site walkover or desk top study. Site investigation and remediation strategy reports may be required for submission with a planning application for sensitive land use types or where significant contamination, or uncertainty, is found. When dealing with land affected by contamination, developers should follow the risk management framework provided in the CLR11, Model Procedures for the Management of Land Contamination:

<https://www.gov.uk/government/publications/managing-land-contamination>

Pollution

If the proposed development use has the potential to pollute ground or surface water receptors then an assessment to establish whether the risk of pollution is acceptable or can be satisfactorily mitigated for will be required within any planning application.

Foul Drainage

When drawing up wastewater treatment proposals for any development, the first presumption is to provide a system of foul drainage discharging into a public sewer to be treated at a public sewage treatment works (those provided and operated by the water and sewerage companies). This should be done in consultation with the sewerage company of the area prior to the submission of a formal planning application.

If connection to a public sewage treatment plant is not feasible, a package sewage treatment plant may be considered.

Guidance is available online at:

<https://www.gov.uk/government/publications/sewage-treatment-and-disposal-where-there-is-no-foul-sewer-ppg4>

Cemeteries

The development of new cemeteries in areas where groundwater vulnerability is high should be avoided, except where the thickness and nature of the unsaturated zone, or the impermeable formations beneath the site, protect groundwater; or where the long-term risk is mitigated by appropriate engineering methods.

We recommend that reference should be made to cemetery section in the Environment Agency's Groundwater Protection: Principles and Practice and information on the Natural Death Centre website

Main Rivers

Ecology

In accordance with the National Planning Policy Framework (NPPF), any development proposal should avoid significant harm to biodiversity and seek to protect and enhance it. Opportunities to incorporate biodiversity in and around the development will be encouraged.

Your scheme should be designed with a naturalised buffer zone of at least 8 metres from the main river to protect and enhance the conservation value of the watercourse and ensure access for flood defence maintenance.

This buffer zone should be managed for the benefit of biodiversity for example by the planting of locally appropriate, UK native species. The buffer zone should be undisturbed by development with no fencing, footpaths or other structures. This buffer zone will help provide more space for flood waters, provide improved habitat for local biodiversity and allows access for any maintenance requirements.

Culverting

The Environment Agency is likely to oppose culverting as it is damaging to the ecological integrity of the river channel and its corridor and acts as a barrier to the movement of wildlife, including fish and may also increase flood risk.

If the proposal will impact an existing culvert the Environment Agency may oppose planning consent for development either over, or within 8 metres of an existing culvert. Wherever possible, existing culverts should be removed and the river channel and bankside habitat reinstated to restore the ecological continuity of the river channel and its corridor.

Water Framework Directive (WFD)

With any development alongside watercourses, consideration should be given to the requirements of the Water Framework Directive (WFD) <http://ec.europa.eu/environment/water/water-framework/>. This includes preventing overall deterioration in water quality and promoting improvement in the ecological status of any water body. Actions to achieve this are listed in the South East River Basin Management Plan (RBMP)

<https://www.gov.uk/search?q=River+Basin+Management+Plans>.

Where appropriate, a WFD Assessment should assess any potential impacts on the watercourse and demonstrate that the required enhancements will be delivered. In some cases the requirements of a WFD assessment can be incorporated into an Environmental Impact Assessment (EIA). Any development that has the potential to cause deterioration in classification under WFD or that precludes the recommended actions from being delivered in the future is likely to be considered unacceptable to us.

Permits & Consents

Environmental Permitting Regulations

To see if your proposed development requires an Environmental Permit under the Environment Permitting Regulations please refer to our website: <https://www.gov.uk/guidance/check-if-you-need-an-environmental-permit>

From 6 April 2016 an Environmental Permit is required for any proposed works or structures, in, under, over or within 8 metres of the top of the bank of designated Main River, and within 16 metres of a tidal defence.

Ordinary Watercourse Consent

The prior written consent of the relevant Lead Local Flood Authority is required for the erection of any flow control structures, culverting or diversion of ordinary watercourses, including streams, land drains and ditches.

Marine Licence

A marine licence may be required for any activities at the mean high water spring tide up to the territorial limit. This also includes the waters of every estuary, river or channel where the tide flows at mean high water spring tide.

Any development must demonstrate how adverse impacts on migratory fish, bathing waters, shellfish waters, designated sites, protected and priority species and habitats will be avoided, minimised, mitigated and if necessary compensated for. Works within or affecting a Water Framework Directive (WFD) waterbody will need to demonstrate that compliance with WFD objectives will be achieved. 'Clearing the Waters for All' provides guidance on how the impacts on WFD should be addressed, and should be used when preparing an assessment, including the screening and scoping of activities. <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>

Further pre-application options

The information provided above details generic information which may or may not be applicable to your development. We are able to provide more detailed and bespoke advice and answer technical questions for a charged fee which equates to £100 per person per hour.

From the 1st April 2018 VAT will be applied to our standard hourly rate of £100 per person/hour .

If you are interested in finding out more about this service, please email:

planningssd@environment-agency.gov.uk

We can explain this service and provide you with a bespoke quote for further pre-application advice that you may require please see <https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Please note

Please note that the view expressed in this letter by the Environment Agency is in response to the enquiry only and does not represent our final view in relation to any future planning application made in relation to this site.

We reserve the right to change our position in relation to any such application.

As part of this preliminary response we have not technically reviewed any documents. This opinion is based on the information submitted and current planning policy and guidance.

If you have any questions please contact the Solent & South Downs Sustainable Places team:

[REDACTED]

[REDACTED]