

APPENDIX A
CORRESPONDENCE WITH THE ENVIRONMENT AGENCY

JFlow Flood Levels Centered on Horndean Road - Created 25 September 2013 (Ref: SSD/1937/VH)



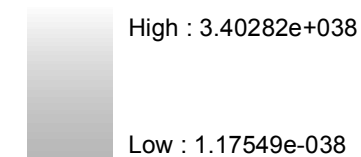
Legend

• Location Points

— Main River

Ground Level

Value



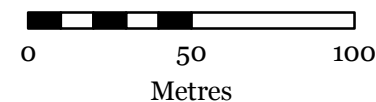
Depth

Value



1:2,315 *

*when printed at A4.



Water Depths & Levels for Horndean Road - 2008 JFlow (SSD/1937/VH)

Point	Water Depth (Metres)		Water Surface Level (mAOD*)		Ground Level
	1% Annual Probability/1 in 100 Year (Flood Zone 3)	0.1% Annual Probability/1 in 1000 Year (Flood Zone 2)	1% Annual Probability/1 in 100 Year (Flood Zone 3)	0.1% Annual Probability/1 in 1000 Year (Flood Zone 2)	
1	0.08	0.15	9.26	9.33	9.18
2	0.09	0.16	9.15	9.22	9.06
3	0.22	0.29	9.08	9.15	8.86
4	0.11	0.18	9.01	9.08	8.90
5	0.40	0.47	8.92	8.99	8.52
6	0.14	0.20	8.75	8.81	8.61
7	0.18	0.23	8.25	8.30	8.07
8	0.21	0.27	8.99	9.05	8.78
9	0.30	0.37	9.14	9.21	8.84
10	0.01	0.06	9.56	9.61	9.55

* Levels in metres above Ordnance Datum Newlyn

JFLOW - Appendix

- Our work to produce Flood Zones followed a 10 year programme which delivered more detailed mapping for 821 locations. However, in order to complete Flood Zones we needed national coverage, hence a generalised approach was used to provide this national coverage within the time available, to fill the gaps between the 821 locations where we had more detailed information. The Flood Zones are therefore not as accurate as we would normally specify for river modelling, but they do provide an adequate indication of the extent of flood risk such that developers can consider flooding as part of their proposals to ensure they are not unknowingly putting additional lives at risk. This is the purpose for which the Flood Zones were produced.
- Neither water depths nor water levels were outputs that were specified when we commissioned this generalised modelling for Flood Zones. Whilst the modelling process does provide some information on depth of water, it would have been possible to produce the flood extents without storing the water depth values, since water depth is only a 'by-product' of the calculation process. As the JFLOW modelling method was developed, tested and reviewed for production of the Flood Zone extents only, we currently have no information on the accuracy of the water depth data.
- The models were run using a Digital Terrain Model (DTM) with a 5m x 5m grid. However the DTM grids were generalised to between 5m and 100m (depending on the type of model and location, for reasons such as processing speed). Fluvial modelling produced depth data which can be processed using the DTM to provide water level data. However the differing grid sizes means that there is a significant potential for inaccuracy in producing level data, because of the DTM generalisation.
- Therefore because of the nature of the model and the DTM, in many cases it will not be possible to confidently assess whether or not a site is above the resulting water level. This is because there are further inherent uncertainties in the depth calculation and within the DTM itself
- Depth or level outputs from the National Generalised Modelling (JFLOW) are only suitable to be used for decision making at a broad catchment or Shoreline Management Plan coastal cell scale (or larger).
- **They are not suitable for use in site specific Flood Risk Assessments or Strategic Flood Risk Assessments and must not normally be used for these studies. However, where in exceptional circumstances Nationalised Generalised Modelling outputs are requested to be used for anything other than at a broad catchment or Shoreline Management Plan coastal cell scale further verification must be undertaken. As part of this verification the outputs must be proven to be suitable and appropriate bearing in mind the conclusions the user wishes to draw from them and this use must be agreed in writing by the local Environment Agency staff.**
- If any agreement is given by the Environment Agency in pursuance of the above, the User accepts and agrees that such agreement by the Environment Agency that that National Generalised Modelling outputs are suitable for a particular use does not imply agreement that the proposals are appropriate or that the Environment Agency has no further comment on flood risk, rather that following verification the User has proven that the outputs are suitable to help assess the flood risk in the particular circumstances.
- Any assessment of Flood Risk undertaken must be appropriate for the decisions that need to be based upon it, consider the risks and also take into account any limitations of the data used
- Please read the enclosed Notice and be aware that the Environment Agency does not guarantee that this data is suitable for your purposes.
- **The consultants employed to deliver JFLOW Flood Zones to the Environment Agency were Jeremy Benn Associates (JBA). I should make you aware that JBA will not release information that either is owned by the Environment Agency or based upon Environment Agency information as they are not licensed to do so. You will need to request any information you require from the Environment Agency.**
- Information provided relates solely to flood risk issues and is based on the best available information to date in the Environment Agency. If further information becomes available to the Environment Agency (on flood risk issues or on other environmental issues which affect a FRA) or policy changes, we reserve the right to comment further or to supply further information or to amend information sent.
- If this information is supplied in connection with a flood risk assessment of development proposals and any material amendments made thereto at any stage prior to the submission of a planning application, the User should be aware of the need to consult the Environment Agency further

Use of Environment Agency Information for Flood Risk / Flood Consequence Assessments

Important

If you have requested this information to help inform a development proposal, then we recommend that you undertake a formal pre-application enquiry using the form available from our website:-

<http://www.environment-agency.gov.uk/research/planning/33580.aspx>

Depending on the enquiry, we may also provide advice on other issues related to our responsibilities including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

In **England**, you should refer to the Environment Agency's Flood Risk Standing Advice, the technical guidance to the National Planning Policy Framework and the existing PPS25 Practice Guide for information about what flood risk assessment is needed for new development in the different Flood Zones. These documents can be accessed via:

<http://www.environment-agency.gov.uk/research/planning/82587.aspx>

<http://www.communities.gov.uk/publications/planningandbuilding/nppftechnicalguidance>

<http://www.communities.gov.uk/publications/planningandbuilding/pps25guideupdate>

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

In **Wales**, you should refer to TAN15 for information about what flood consequence assessment is needed for new development in the different flood zones

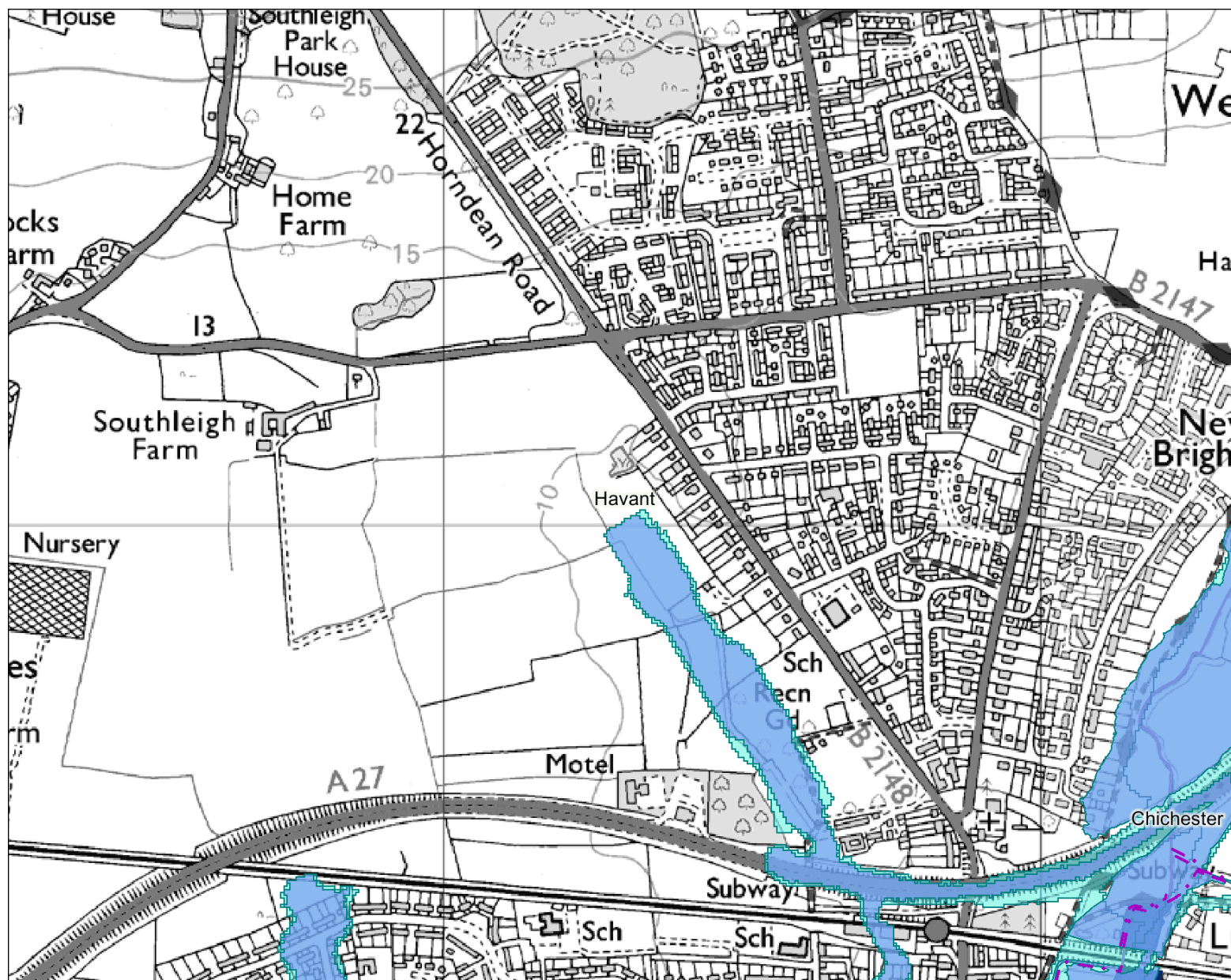
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You should also consult the Strategic Flood Consequence Assessment if one has been produced by your local planning authority.

In both **England and Wales** you should note that:

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk / Consequence Assessment (FRA / FCA) 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 overland runoff. The information produced by the local planning authority referred to above may assist here.
3. Where a planning application requires a FRA / FCA and this is not submitted or deficient, the Environment Agency may well raise an objection.
4. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your local planning authority.

Flood Map Centered on Horndean Road - Created 26 September 2013 (Ref: SSD/1937/VH)



Scale 1:10,001



- Flood Map - Defences
- Areas Benefiting from Flood Defences
- Flood Map - Flood Storage Areas
- Flood Map - Flood Zone 3
- Flood Map - Flood Zone 2
- Historic Flood Map
- Local Authorities

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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Emsworth Flood Alleviation scheme (FAS)

9th October 2013 Briefing Note

Introduction

In November 2010, 18 properties in Bridge Road flooded from the West Brook, at the same time on Selangor Avenue three properties flooded from the Nore Farm Stream. In 2012 heavy rain led to repeat flooding of some properties. The main reason for the flooding is that the culverted sections of the West Brook and Selangor Avenue are too small to deal with high flows during intense rainfall events.

We have already carried out a number of projects to reduce the risk of flooding, including installing a new trash screen on Bridge Road, telemetry on the West Brook and updated our incident response procedures.

The Emsworth Flood Alleviation Scheme

We want to reduce the risk of flooding in Emsworth by working in partnership with the community, developers, planners, the lead local flood risk authority and other organisations such as Southern Water and the Highways Agency.

Constraints

COST/BENEFITS

The Emsworth Flood Alleviation project is technically challenging and the scheme does not attract enough central government funding to cover the full cost needed to design and build the scheme.

FUNDING

The partnership funding process means that the Emsworth Flood Alleviation Scheme not only has to achieve a funding score of 100% to be viable, but is also competing for the limited capital money from all potential schemes submitted across the country. This means that the schemes delivering the greatest cost benefit will attract the capital money first. For the financial year 2014/15, the anticipated partnership funding score schemes will need in order to secure funding is expected to be above 200%.

Options considered

NORE FARM STREAM

Flood Storage – This would create flood storage in the land north of the A27. It is likely that we can secure funding to progress this part of the scheme quickly. With contributions already secured this option on its own achieves a sufficient cost/benefit and partnership funding score, above 100%, to achieve business case.

THE WEST BROOK

Flood Storage – Two sites have been identified as suitable. One site at Cold Harbour Farm, immediately north of the A27 and a second further upstream adjacent to the proposed allocation site UE13 (please see map). However constraints exist with both sites meaning that neither together, nor individually do they achieve a sufficient cost benefit or partnership funding score to secure funding in the next year.

Considerations (for discussion)

Given the partnership funding constraints for 14/15 the only way the delivery of any capital scheme can be achieved is to reach gateway 3 (this is the stage where contract is awarded to a contractor, and we are ready to start works) this financial year.

It is recommended that given the circumstances we complete the project appraisal report (PAR) for only the Nore Farm Stream storage site. The benefit is that we should achieve business case sign off and gateway 3 this financial year and not have to be part of the “new scheme” funding pot, which would give no certainty for the delivery of any scheme. The time scales in achieving gateway 3 are exceptionally tight and we therefore seek the community’s assistance in supporting this proposal. Other options can be considered to reduce the risk of flooding on the West Brook.

How to reduce flood risk on the West Brook

Although the Emsworth Flood Alleviation Scheme can only deliver storage on the Nore Farm Stream we have further opportunities to reduce flood risk from the West Brook.

Through engagement with Havant Borough Council we have demonstrated the flood risk benefits in allocating sites along the West Brook for development. We are now consulting with developers to deliver flood storage either on or adjacent to the development sites over and above the national planning policy.

Further, we will continue to work with Southern Water to investigate what can be achieved to attenuate the flows from their surface water system. This we will drive forward as a separate stand alone scheme with the view to achieving partnership contributions from both Southern Water and the Environment Agency.

Therefore although the Emsworth Flood Alleviation Scheme is unable to deliver the entire flood risk benefits we had initially set out to achieve there are still opportunities to further reduce flood risk to the Emsworth community through the Emsworth Flood Risk Strategy, which the Flood Alleviation Scheme forms part of.

Other works already delivered

1. We have given priority to reducing the risk of flooding in Emsworth.
2. We have upgraded the existing trash-screen at Bridge Road to reduce the likelihood of blockage during a flood event.
3. We have installed telemetry on the West Brook. This means that the water level can be monitored remotely and will enable our incident response teams to act quickly to rising water levels.
4. We have reviewed and changed our operational maintenance procedures in the area.
5. We have reviewed and changed the incident response procedures reflecting the increase in flood risk prioritisation.