



**24 WHEATLANDS AVENUE,
HAYLING ISLAND**

Proposed Residential Development

Flood Risk Assessment

**Prepared on behalf of
Mrs Taylor**

**D1105/DS/1.1
February 2016**

RGP Design Limited

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1 INTRODUCTION

1.1 Background

- 1.1.1 RGP Design is instructed by Mrs Taylor to prepare a Flood Risk Assessment (FRA) to support a planning application for the development of a site at 24 Wheatlands Avenue, Hayling Island.
- 1.1.2 This FRA has been undertaken in accordance with Planning Practice Guidance: Flood Risk and Coastal Change (FRCC) and National Planning Policy Framework Section 10.
- 1.1.3 In preparing this FRA, RGP Design Ltd has made reference to the Environment Agency's Flood Risk Maps for Planning, The Partnership for Urban South Hampshire (PUSH) Strategic Flood Risk Assessment (SFRA), and Southern Water's Public Sewer Records.
- 1.1.4 Reference has also been made to a LIDAR data obtained from Data.gov.uk website.
- 1.1.5 This FRA has been prepared to assess if the proposed development is suitable for the site and confirms if mitigation is required to ensure that flood risk is not increased and that the proposed development remains safe during its design life.
- 1.1.6 This report has been prepared for the benefit of named Client only.

1.2 Development Location and Description

- 1.2.1 The proposed development is located at 24 Wheatland Avenue, Hayling Island Hampshire, PO11 9SG.
- 1.2.2 The site is located in the eastern part of Eastoke, close to the southern coast of the island. Hayling Bay is approximately 150m to the south.
- 1.2.3 The site lies within a residential area.
- 1.2.4 The site is currently occupied by a single bungalow with a grassed off-road parking area.
- 1.2.5 The site area is approximately 500m² and based on LIDAR data, it lies at a level of around 3.6mAOD

- 1.2.6 The development comprises the demolition of an existing 4 bedroom bungalow and the construction of a pair of 2 bedroom semi-detached bungalows, occupying a similar overall floor area. 4No, parking spaces are proposed at the front of the new building.

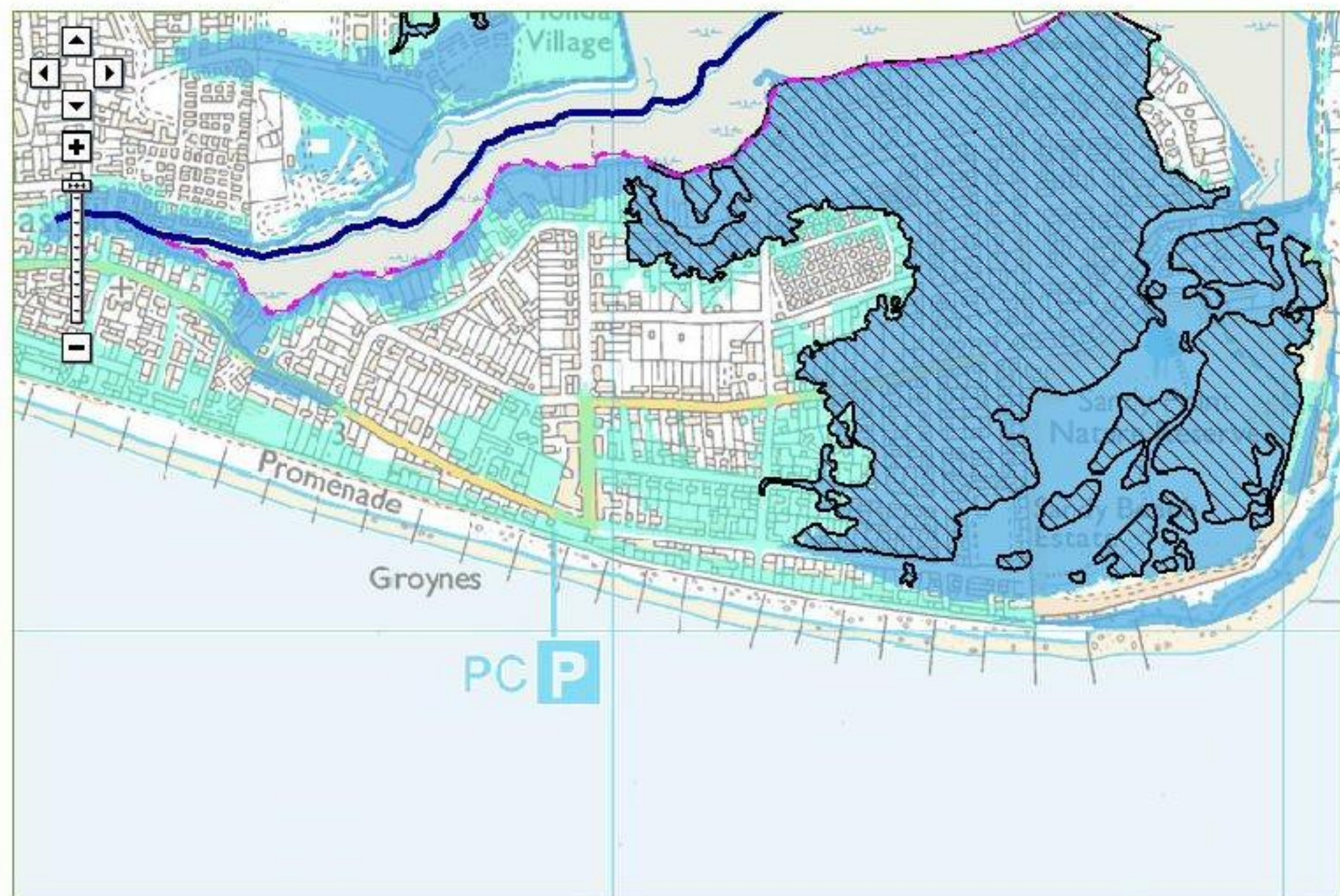
2 PROBABILITY

2.1 Strategic Flood Risk Assessment

- 2.1.1 The NPPF requires that all sources of flooding are considered being Tidal, Fluvial, Pluvial, Groundwater, Sewers and Man-made reservoirs/canals.
- 2.1.2 A review of the SRFA sources shows that the site is at risk from Tidal and Fluvial flooding only with the sources being identified as the Sea and overland flow due to heavy rainfall.
- 2.1.3 The maps also show that the site falls within the High Risk classification for flooding from Overland Flow.
- 2.1.4 The historic flood maps record a flood event in the vicinity of the site, from this source in 1989.
- 2.1.5 The existing costal defences to the south of the site are shown to provide a level of protection at least equivalent to 1 in 1000 tidal return period (2115).

2.2 Environment Agency Flood Data

- 2.2.1 The Environment Agency Flood Risk Maps for Planning show that the site is located in Zone 2 which is consistent with the SFRA.



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- 2.2.2 The Environment Agency flood data and PUSH data shows that the site is at risk of tidal flooding due to overtopping/spray.
- 2.2.3 The current day 1 in 200 year flood level is 3.40mAOD and in 2115 it is 4.50mAOD. It is noted that the costal sea defences to the south have a crest level of approximately 5.6mAOD.
- 2.2.4 It is understood that costal defences to the east have recently been upgraded as part of the Eastoke Point, Hayling Island : Costal Defence Works, to a 1 in 200 year standard.
- 2.2.5 It is assumed that the existing sea defence will remain in place for at least the lifetime of the development and the risk of flooding is breach of the existing defences by wave overtopping.

3 EXISTING DRAINAGE

3.1 Surface Water

- 3.1.1 The public sewer records show a 225mm diameter public surface water sewer running within Wheatlands Avenue, flowing to the east.
- 3.1.2 It is understood that the run-off from the existing building is collected and discharged to this sewer.

3.2 Foul Water

- 3.2.1 The public sewer records show a 225mm diameter public foul water sewer running within Wheatlands Avenue, flowing to the east.
- 3.2.2 It is understood that the wastewater from the existing building is collected and discharged to this sewer.

3.3 Highway Drainage

- 3.3.1 Wheatlands Avenue is drained by traditional road gullies collected by the public surface water sewer aforementioned.

4 PROPOSED DEVELOPMENT

4.1 Surface Water

- 4.1.1 The proposed development results in a small increase in the impermeable area on the site.
- 4.1.2 It is proposed to construct the new hardstandings using porous paving, discharging by infiltration into the ground.
- 4.1.3 It is proposed to take the run-off from the proposed roof to the existing public sewer.
- 4.1.4 Overall, there will be no increase in the amount of run-off discharging to the public surface water sewer, ensuring that flood risk from this source is not increased.

4.2 Foul Water

- 4.2.1 It is proposed to connect the proposed dwellings to the public foul water sewer.
- 4.2.2 Whilst there will be an increase in the wastewater flow leaving the site, the rate and volume will be negligible.

4.3 Climate Change

- 4.3.1 NPPF Table sets out percentage increases to be applied to peak rainfall intensity to allow for the effects of climate change over the design life of a developments.
- 4.3.2 The SFRA suggests that in the future the site will be located in flood zone 3 when considering the effects of climate change. This is not as a result of the minor development proposals i.e. this will occur to all properties in this location unless further area-wide mitigation works are implemented.
- 4.3.3 In accordance with Table 2 of 'Climate Change Allowances for Planners' an increase of 30% should be applied to the peak rainfall intensity when designing the proposed drainage system.

4.4 Flood Mitigation

- 4.4.1 The assessment of probability in Section 2 above concludes that there is a residual risk of flooding from wave overtopping/spray and that due to climate change, the risk of flooding will increase with time. Mitigation measures should be implemented to protect the proposed dwellings against flooding should this occur.
- 4.4.2 The risk of flooding can be mitigated by raising the floor level above the flood level and by using flood resilient methods of construction.
- 4.4.3 It is recommended that flood resilience is built in to the property, where possible which could include:
- raised electrics
 - kitchen and bathroom installed using water resistant materials such as
 - polymer board and stainless steel
 - water resistant stud walls (Aquobex) or waterproof plaster
 - tiled floors where possible
 - closed cell insulation
 - boilers and other appliances raised
 - Provision for flood gates to be installed at door locations
- 4.4.4 It is recommended that the floor level of the proposed dwellings is raised to 4.7mAOD, placing it 300mm above the 1 in 200 year tidal flood level.
- 4.4.5 It is recommended that the occupiers of the accommodation sign up to the Environment Agency's Flood Warnings Direct Service and prepare a Flood Plan.
- 4.4.6 It in addition, it is noteworthy that the proposed development is located in an area already in high residential use, it will not have an adverse effect on existing watercourses, flood plain or flood defences.
- 4.4.7 The surface water drainage system should be designed to ensure that there is no increase in flow to the existing public sewer network from the site.

5 SEQUENTIAL AND EXCEPTION TESTS

5.1 Sequential Test

- 5.1.1 It is for the planning authority to consider if the proposed development passes the sequential test, largely based on information provided with the SFRA. The commentary below provides additional information considered to be key in making the decision regarding the result of the test.
- 5.1.2 The site lies within Zone 2 and the development is classified "More Vulnerable". The proposed development does not change the use and therefore vulnerability of the buildings or occupiers of the site.
- 5.1.3 The objective of the sequential test is to promote development in areas that are at lowest risk of flooding, however the aim of this development is to improve the quality of the accommodation that exists on the site and to provide an additional home in the Borough of Havant.
- 5.1.4 It is noted that similar developments have taken place opposite the site at 15/15a, 17/17a and 19/19a and also to the west of the site at No.20/20a. Developments of a similar nature in nearby roads have also either recently been constructed or been given planning consent
- 5.1.5 The existing bungalow is in poor condition and is in need of significant work to bring it up to a modern standard. The existing building is not raised above existing ground level to an extent that would provide a level of protection against flooding.
- 5.1.6 The constraints of the development are such that consideration of other sites that are at a lower risk of flooding is not appropriate.
- 5.1.7 The development of the site will follow a sequential approach by ensuring that the accommodation is located above the flood level.
- 5.1.8 There will be no increase in the number of bedrooms on the site, therefore there will be no increase in the risk to life as a result of the development. To the contrary, the development gives the opportunity to provide accommodation that is significantly better protected from flooding, thereby reducing the risk to life and potential flood damage.
- 5.1.9 The floor level of the proposed dwellings will be raised above existing ground level, 4.7mAOD to place it above the 1 in 200 year tidal flood level.

5.1.10 It is noted from Map Set 1D in the SFRA, that the site falls within and Low flood hazard area (shallow flowing water or deep standing water) and Map Set 3C shows that the costal defences to the south provide a level of protection equivalent to 1 in 1000 year.

5.1.11 Safe access and egress is discussed in section 6.

5.2 Exception Test

5.2.1 Table 3 within Paragraph 067 of Flood Risk and Costal Change confirms that developments classified as "More Vulnerable" are suitable for Zone 2 and the exception test is not required.

6 FLOOD RISK MANAGEMENT

6.1 Safe Access and Egress

- 6.1.1 During a flood event, two options exist for occupants; evacuate or remain in the property. It is recommended where possible that the area affected by flooding is evacuated.
- 6.1.2 The Environment Agency flood risk maps show that a large area is at risk of flooding during a breach of the coastal defences. It is understood that the Environment Agency operate their Flood Warning Direct Service for this area and it is recommended that the occupiers of the proposed dwellings subscribe to it.
- 6.1.3 Due to the source of flooding an initial breach of the flood defence is likely to occur well before the area becomes fully flooded. This initial breach indicates a likely flood event allowing occupants of the building a period of time to secure flood protection measures and/or leave the area safely, starting with more vulnerable people (disabled, elderly and children).
- 6.1.4 Evacuation should be to higher lying land to the north. Flood depths will initially be shallow and easily negotiable by able-bodied persons.

6.2 Flood Warning

- 6.2.1 As mentioned above, the Environment Agency operate a flood warning system and it is recommended that occupiers subscribe to this service.
- 6.2.2 It is also recommended that occupants make a Flood Plan to help them prepare for a flood event. This can be tailored by the occupier to suit their specific requirements and will provide details of the escape route and help occupiers make informed decisions regarding the action taken.

7 OFFSITE IMPACTS

- 7.1.1 The proposed development will not have an impact on flooding issues off-site.
- 7.1.2 There will be no increase in the rate and volume of run-off leaving the site therefore no impact to the existing public sewers.
- 7.1.3 There will be no adverse impact on flood storage volumes or flood flow routes because the proposed building occupies a similar plan area to the existing bungalow.
- 7.1.4 The effects of climate change should be considered in the design of the proposed drainage system, to ensure there is no off-site impact.

8 SUMMARY

- 8.1.1 This Site Specific flood risk assessment is based on the Local Authorities Strategic Flood Risk Assessment, The Partnership for Urban South Hampshire (PUSH), Environment Agency's Flood Maps for Planning, Southern Waters Public Sewer Map and a Topographic Survey.
- 8.1.2 The site is currently occupied by an existing Public House and is in an area that is already predominately residential.
- 8.1.3 The site lies at approximately 3.6mAOD.
- 8.1.4 The site is located in Zone 2 and is protected from flooding by coastal defences (1 in 1000 years). There is a residual risk of flooding resulting from a breach of the existing costal defences and wave over topping and spray. The site is also shown to be at high risk of flooding from overland flow.
- 8.1.5 The site is shown to be located in Zone 3 in 2115 as a result of climate change but the costal defences to the south will still provide a level of protection at least equivalent to 1 in 1000 years.
- 8.1.6 The surface water run-off and wastewater from the site is believed to currently drain to public sewers in Wheatland Avenue and it is intended to continue to use this method of drainage for the proposed development.
- 8.1.7 The proposed drainage system will be designed to cater for the effects of climate change by including a 30% increase in peak rainfall intensity.
- 8.1.8 The residual risk of flooding will be mitigated by ensuring the proposed finished floor level is above the 1 in 200 year tidal flood level and by using flood resilient construction techniques.
- 8.1.9 The sequential test should be applied and in this respect the following is noted:
- (i) There will be no increase in the number of bedrooms on the site and therefore no increase in risk to life
 - (ii) The proposed development provides the opportunity to construct new dwellings that are better protected from flooding than the existing dwelling on the site, thereby reducing the risk to life
 - (iii) Other similar developments have been constructed or have received planning consent that are very close to this development

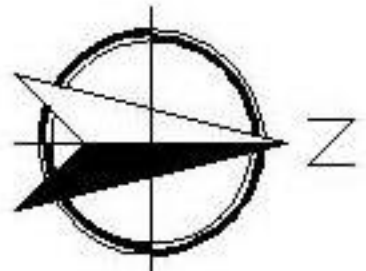
- (iv) Mitigation measure will be implemented further protecting the proposed building from the effects of a flood event
- (v) An evacuation procedure/flood plan can be established based on the specific requirements of the occupants of the proposed dwelling

8.1.10 It is recommended that occupiers subscribe to the Environment Agency's flood warning service and prepare a flood plan.

8.1.11 The proposed development does not impact on flood risk off site.

PLANS and DRAWINGS

2016/D1105/SK100 – Site Location Plan and LIDAR Contours
Proposed Site Layout



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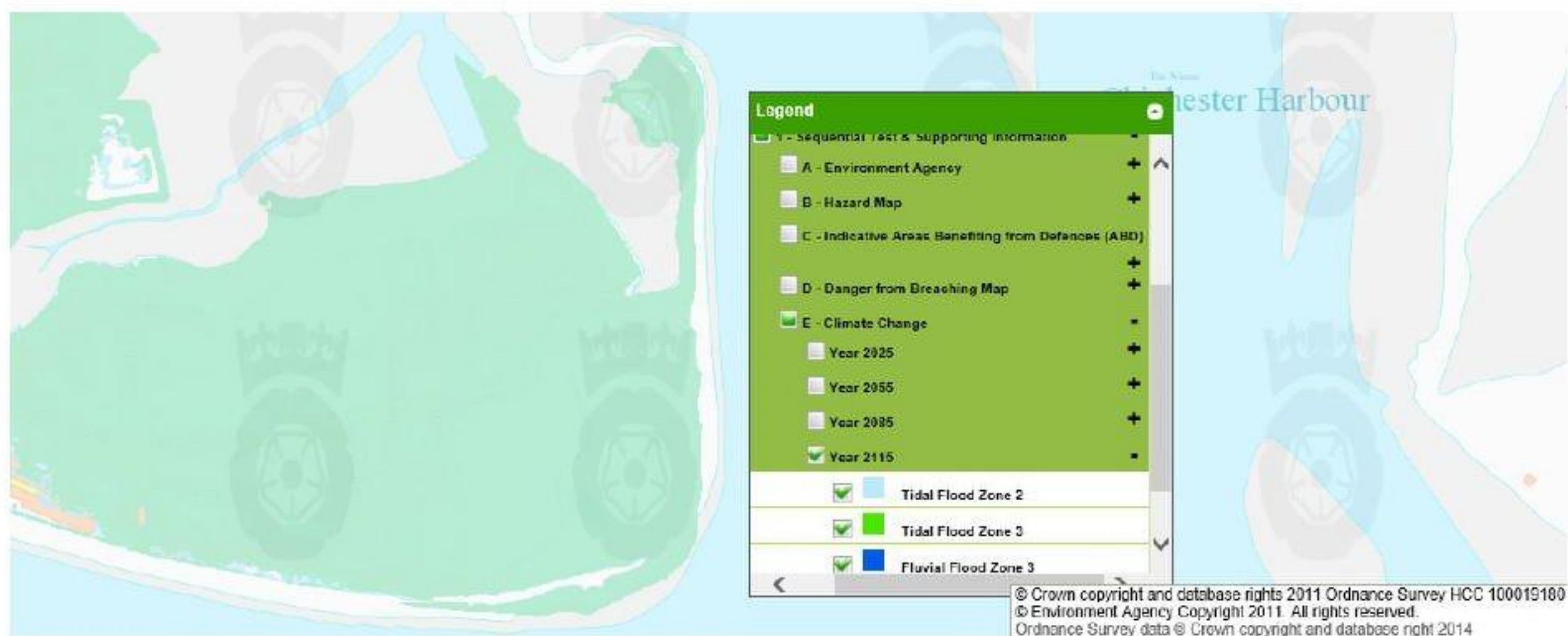
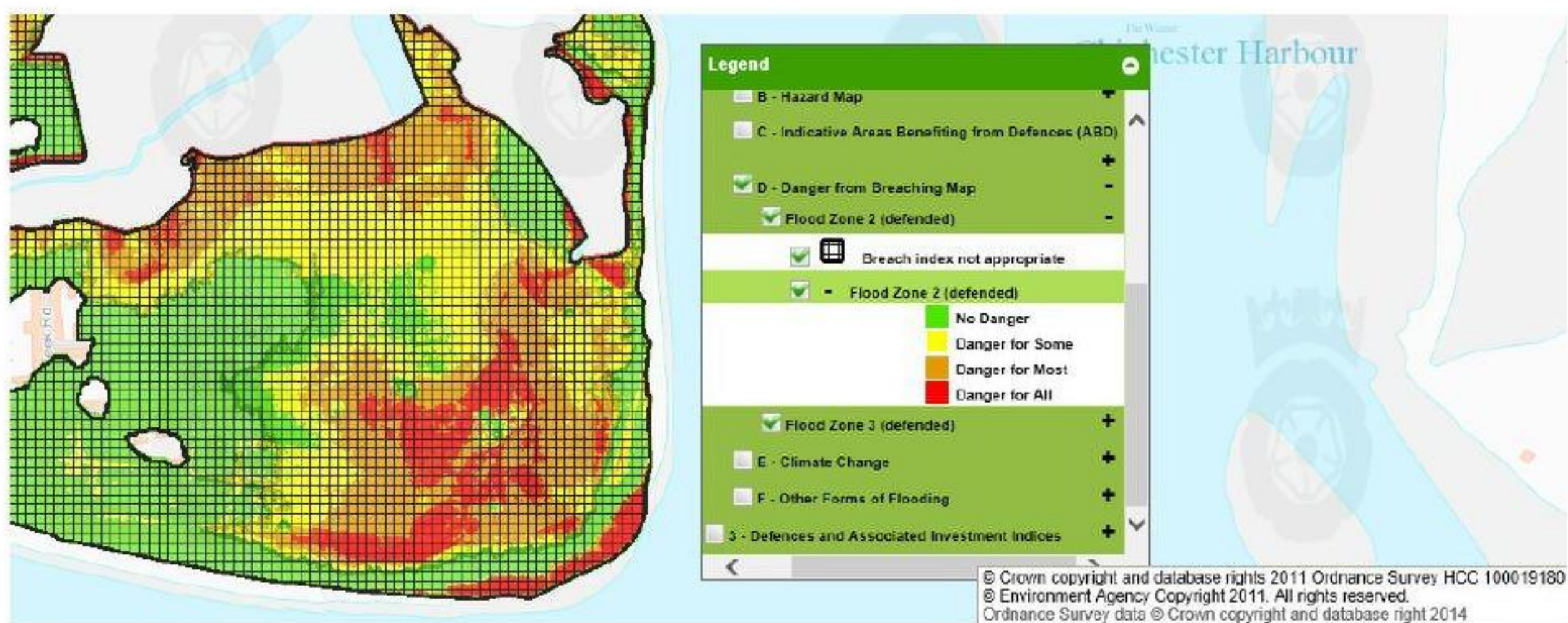
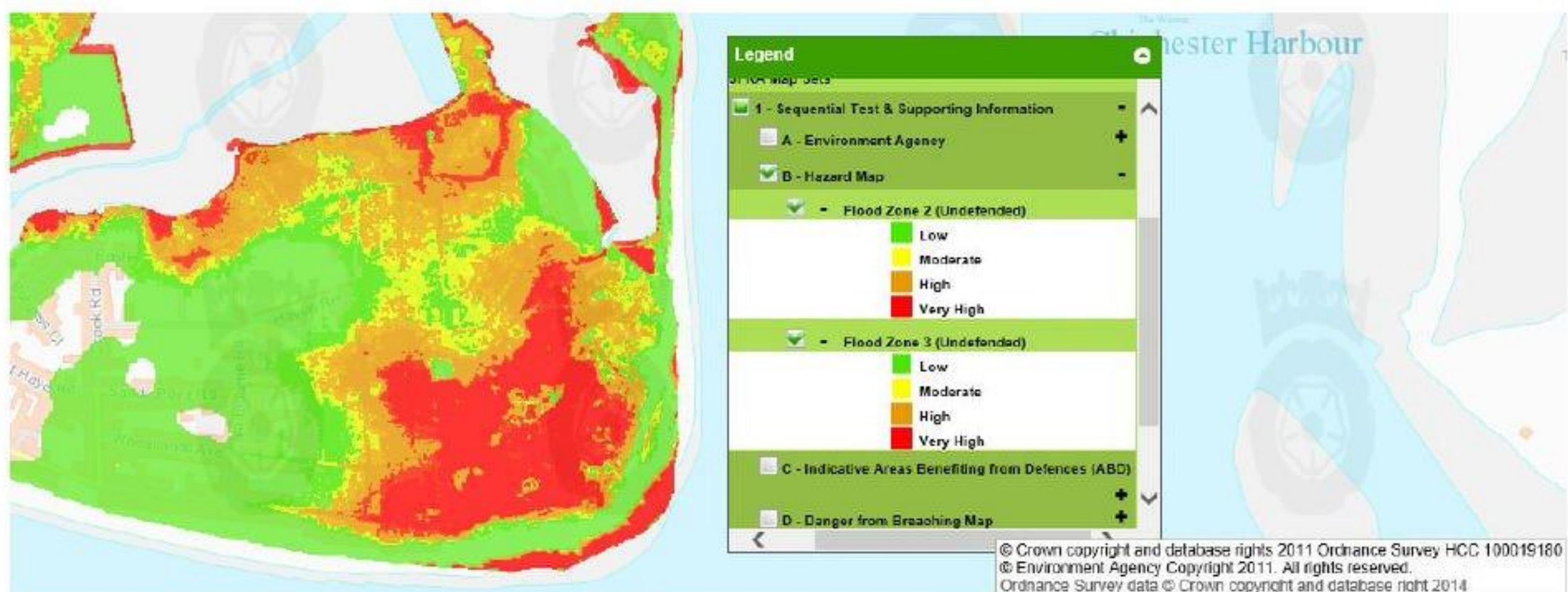
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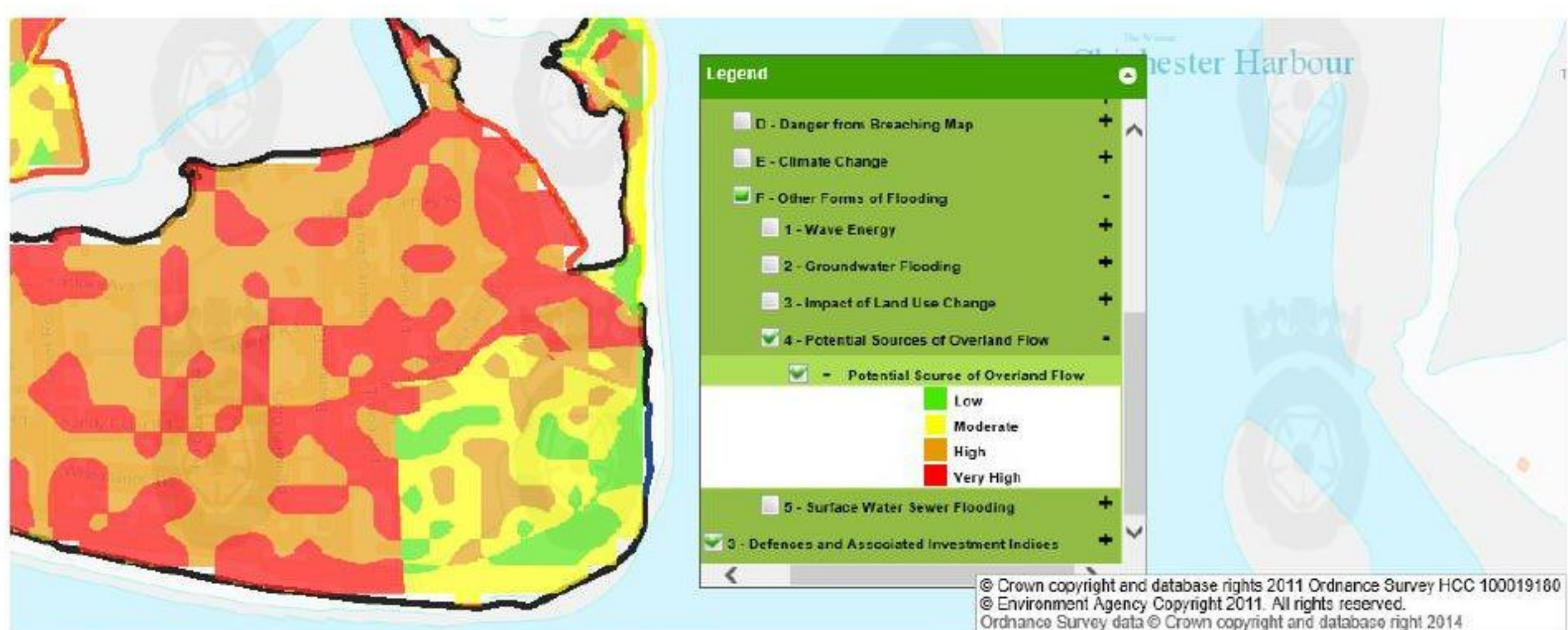


Transport Partners and Infrastructure Design Consultants
Metro House, Northgate, Chichester, West Sussex, PO19 1BE
Tel: 01243 410418 www.tpidesign.co.uk

APPENDICES

Appendix A Extracts from SFRA/PUSH Website Maps





Appendix B Public Sewer Map

RGP Design
Metro House
Northgate
Chichester
West Sussex
PO19 1BE

Your Ref D1105
Our Ref 209020
Date 21 January 2016
Contact searches@southernwater.co.uk
Fax 01634 844514
DX:400450 Chatham 5

Attention: Mark Akmenkalns

Dear Sirs

Provision of Public Sewer Main Record Extracts – VAT Receipt
24 Wheatlands, Wheatlands Avenue, Hayling Island, Hampshire, PO11 9SG

Further to your recent enquiry regarding the provision of Southern Water apparatus record extracts for the above location.

Please be aware that there are areas within our region in which there are neither sewers nor water mains. Similarly, whilst the enclosed extract may indicate the approximate location of our apparatus in the area of interest, it should not be relied upon as showing that further infrastructure does not exist and may subsequently be found following site investigation. Therefore actual positions of the disclosed (and any undisclosed) infrastructure should be determined on site, because Southern Water does not accept any responsibility for inaccuracy or omission regarding the enclosed plan and accordingly it should not be considered to be a definitive document.

I confirm payment of the appropriate fee in the sum of £ **49.92**

The breakdown of costs is as follows: -

- Provision of record extracts £ 41.60
- VAT @ 20.0% £ 8.32

VAT Registration Number 813 0378 56

Should you require any additional information regarding this matter please contact this office at the address given at the foot of this letter.

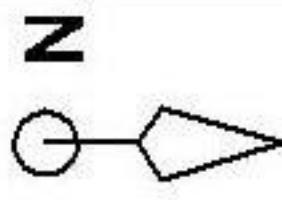
Yours faithfully

Land Search Department



98075

98363

O.S. REF. SZ7498SW		The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. WARNING: BAC pipes are constructed of Banded Asbestos Cement WARNING: Unknown (UNK) materials may include Banded Asbestos Cement		
Drawn by: yadavsa	Scale: 1:1250			
Title: 209020_24 Wheatlands, Wheatlan	Date: 21/01/2016	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 288630.		

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SEWER RECORDS PAGE 2 OF 2

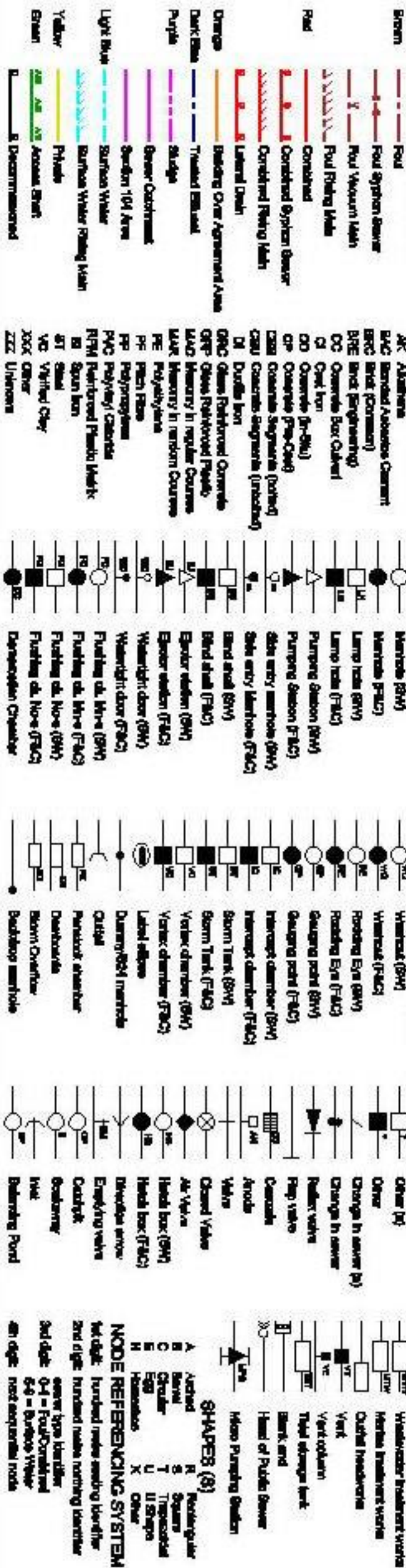
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LINE STYLES / COLOURS

MATERIALS

LEGEND - SEWERS

MEMBERS



Drawn by: yadavsra	
Title: 209020_24 Wheeatlands, Wheeatlan	
Date: 21/01/2016	

Appendix C LA Costal Engineer Response

Liam Foord

From: James Addicott <james.addicott@havant.gov.uk>
Sent: 22 January 2016 14:26
To: Mark Akmenkalns
Subject: RE: D1105 - 24 Wheatlands Avenue, PO11 9SG - Flood Risk Enquiry

Mark,

Thanks for your email. I'm afraid that we are unable to answer the majority of your questions as these do not relate to coastal flooding matters.

I've had a quick look at the flood risk maps and the property lies in Flood Zone 2, which is a medium risk. By 2055, the site will be in Flood Zone 3 (high risk). This must be taken into consideration when designing the new properties. Flood resistance and resilience measures must be considered and a Flood Risk Assessment detailing the measures should be included in the application.

It should be noted that at this location there is a risk of wave and spray overtopping of the beach and coastal defences. This has in the past resulted in surface water flooding of the road network including Southwood Road and Wheatlands Avenue adjacent to the site. Should a similar event occur it is likely that access to and from the property may be affected. More information on the extent of this flooding can be sourced from the Partnership for Urban South Hampshire Flood Risk Assessment and is contained within the Historic Flood Map layer (<http://maps.hants.gov.uk/push/default.aspx>).

If you would like to discuss further, I am available on the number below.

James

James Addicott
Coastal Project Engineer

Tel: 02392 446223
Mobile: 07974 367547

Our website: <http://www.escp.org.uk>
Check out our NEW webpage at www.solentbirds.org.uk



**EASTERN
SOLENT | COASTAL
PARTNERSHIP**



Please note that from 2nd November 2015 I am flexible working and my normal working week is as follows:

Monday: non-working day; Tuesday and Thursday: finish at 2.30pm; Wednesday and Friday: normal working hours.

From: Mark Akmenkalns [mailto:m.akmenkalns@rgpdesign.co.uk]
Sent: 20 January 2016 15:36
To: James Addicott
Subject: D1105 - 24 Wheatlands Avenue, PO11 9SG - Flood Risk Enquiry

Dear James,

We are preparing a drainage strategy for the above site and would be grateful if you could provide us with any relevant information you have via a 'Product 4' as per our drainage checklist below:

- Please confirm if there are any future drainage improvements proposed for this area.
- Please confirm if any drainage studies and/or SWMP have/are being assessed for this area.
- Please confirm if you are aware of any historic flooding within the confines of the site.
- Please confirm if you are aware of any historic flooding in close vicinity and/or on the public highway.
- Please confirm if there are any historic culverted watercourses within or in close vicinity to the site. Please provide map records where available.
- Please can you provide any map records denoting the highway drainage network. Is this a piped system or soakaways?
- Please advise if there is any groundwater records.
- Please confirm if any areas are defended or will be defended in the future.
- Please provide plans and depth data from your GIS UFMSW for 30yr, 100yr & 1000yr as applicable.
- Please confirm flood depths relative to OS Datum.
- Please confirm if, should site levels be engineered, would flood compensatory measures be necessary and/or acceptable to the EA/LPA?

Given the immediate coastal location here I am hoping you will be able to provide some explanation of future plans, evacuation procedures, etc.

We look forward to hearing from you in due course.

Regards,

Mark Akmenkalns

RGP Design Ltd – Transport Planning and Infrastructure Design Consultants

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