

MONSON

Structural Engineering
Roads & Car Parks
Traffic & Flood Risk Assessments
Water & Drainage Engineering
Technical Audits & Assessments

**LAND ADJACENT TO
WAVERLEY HOUSE
MARINE PARADE
LITTLESTONE
KENT**

**PROPOSED RESIDENTIAL
DEVELOPMENT**

FLOOD RISK ASSESSMENT

Issue: A
Date: 14th July 2019
Author: J. Finch
Verified by L.G. Leslie
Job No: 9000K



Registered No. FS 37624

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1.00 Introduction

- 1.01 Monson Engineering have been requested to provide a Flood Risk Assessment for a Residential Development located at Land Adjacent to Waverley House, Marine Parade, Littlestone, Kent, TN28 8QN. The Site Location Plan can be seen in the Appendices.
- 1.02 This site is situated within Flood Zone 3, and is therefore required to have a flood risk assessment submitted to the local planning authority in support of the planning application to demonstrate its safety in times of flood.
- 1.03 This Flood Risk Assessment will conform to Planning Practice Guidance – Flood Risk & Coastal Change (2016), the National Planning Policy Framework and Technical Guidance in relation to flood risk which was also published in 2018.

2.00 Development Description and Location

2.01 The development proposal consists of 1 No. Class C3 (Residential House) which will be situated within the village of Littlestone. The Development Proposals may be seen in the appendices.

2.02 The flood risk vulnerability classification for this type of development in this location is considered as More Vulnerable which is defined in Table 2 of the Technical Guidance to the National Planning Policy Framework as seen below:

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	*	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	*	*	*

Key: ✓ Development is appropriate.
* Development should not be permitted.

2.03 As set out in the National Planning Policy Framework, the aim of the Sequential Test is to direct new development to areas with the lowest probability of flooding.

2.04 The starting point to the Sequential Test is the Flood Zones, which can be seen in the Flood Maps for Planning, found in the appendices. The map clearly shows Zones 2 and 3, whereas Zone 1 is the remainder of the land not hatched.

2.05 A detailed Sequential Test has been undertaken for the site and accompanies this Flood Risk Assessment.

2.06 These flood zones refer to the probability of river and coastal flooding, ignoring the presence of any existing flood defences.

- 2.07 The Strategic Flood Risk Assessment for Folkstone and Hythe District Council refines the information on the probability of flooding and also takes into account other sources of flooding, for example, Highways, and Public Sewers, Groundwater etc.
- 2.08 The proposed development is situated within Zone 3 and is not an allocated site in the local plan. The accompanying Sequential Test demonstrates that there are no other sites with this kind of character, size and setting as the proposed location.
- 2.09 If the Sequential Test cannot be passed, the Exception Test will be required to demonstrate the developments safety in times of flood.

3.00 Definition of the Flood Hazard

3.01 For the preparation of this Flood Risk Assessment it is necessary to consider all of the potential sources of flooding and how this may affect the site. A checklist has been provided below to help identify these areas which can be discussed in greater detail in this section.

Possible Source of Flooding	Applicable to this Site?
Fluvial Flooding from nearby rivers or streams	☐
Coastal Flooding	☒
Surface Water Runoff from the Site, Adjacent or Nearby Land	☐
Flooding from Surface Water Sewers	☐
Flooding from Foul Water Sewers	☐
Flooding from Reservoirs	☐
Flooding from Groundwater	☐
Flooding from other Sources	☐

3.02 There is a stream to the West of the proposed development called Nashe's Run, however this does not pose any fluvial flood risk to the site..

3.03 There is coastal flood risk associated with this site, as the site is on the sea front at Littlestone, approximately 45m from the sea defence wall. When looking at historical events, there was a wave overtopping incident in the 1990's by the Tower in Littlestone, some 675m away. No properties were flooded in this occurrence.

3.04 There are no overland surface water flood risks to the site. This is confirmed by the surface water flood mapping provided in the appendices.

3.05 There are no reports of surface or foul water sewer flooding in the vicinity of the proposed site.

3.06 There are no flood risks to this site in relation to reservoirs.

3.07 There are no expected groundwater flood risks associated with this site.

3.08 There are no other sources of flooding deemed as a risk to this application site.

4.00 Probability

- 4.01 The proposed development is situated within Zone 3 which can be seen in the Flood Map for Planning, contained in the Appendices.
- 4.02 The District Council for this area have prepared a Strategic Flood Risk Assessment which refines the information provided in relation to flood risk. This is a publicly available document from the council website.
- 4.03 Based on the Information provided in both the Flood Maps for Planning and the Strategic Flood Risk Assessment, the probability of a flood event may be taken as Zone 3a – High Probability.

5.00 Climate Change

- 5.01 The climate change allowance for rainfall has been taken as 20% which is the revised upper limit for rainfall in England up to the year 2070. This is based on the current climate change guidance from the Environment Agency published in February 2016, which has been included in the appendices.

6.00 Detailed Development Proposals

- 6.01 The development proposal consists of 1 No. Class C3 (Residential House) which will be situated within the village of Littlestone. The Development Proposals may be seen in the appendices.
- 6.02 The existing property named Waverley House has a stepped approach to the ground floor level. This philosophy would work well to keep finished floor levels at an appropriate level above the design flood. Ground floor levels should therefore be set at 6.340m AOD.
- 6.03 Details and any other relevant information relating to the development proposals can be found in the appendices.

7.00 Flood Risk Management Measures

- 7.01 In order to effectively manage any site specific flood risk, it may be necessary to introduce mitigation measures to help eliminate or reduce the impact of flooding.
- 7.02 It is unlikely that there will be any risk of surface water flooding post development, however as a safeguard to the properties within the development, the finished floor levels shall be set at a minimum of 150mm above the external ground levels. In this case it will be significantly more than this.
- 7.03 The existing external ground levels are around 5.7mAOD, which is approximately 0.21m above the highest predicted flood level. Environment Agency Guidance specifies that the Higher Central allowance for freeboard above the design flood should be set at 0.85m above the design flood, which is 5.49mAOD. The Ground Floor Slab has therefore been proposed at 6.34mAOD.
- 7.04 Manual or automatic covers for air bricks should be installed to prevent ingress of water into the cavity wall.
- 7.05 Full port non-return valves to should be installed in the ground floor toilets to prevent back flow into the property.
- 7.06 Property owner should consider installing external flood resilience doors or portable door barriers.
- 7.07 The new proposals for the dwellings will comprise concrete suspended ground floors with appropriate voids/vents for any transmission of flood water passing through, or for the purposes of dissipating any groundwater rising, preventing any seepage through the floor slab. These will be detailed in the Architectural working drawings.
- 7.08 Property owner should sign up to the EA's flood line to receive information and flood warnings by email and text. So that safe access and egress can be planned, prior to rising floodwater approaching the property, should it be necessary.
- 7.09 All other possible flood risks relating to the proposed development will be managed by use of Sustainable Urban Drainage Systems (SUDS), wherever possible.

8.00 Off Site Impacts

- 8.01 There are no foreseen impacts to neighbouring properties or the surrounding area in relation to flood risk as a result of the proposed development.

9.00 Residual Risks

- 9.01 There are no foreseen residual risks relating to the proposed development following the implementation of the flood risk management measures and ongoing maintenance of the drainage systems intended for the application site.

10.00 Conclusion

- 10.01 Monson Engineering have been requested to provide a Flood Risk Assessment for a Residential Development located at Land Adjacent to Waverley House, Marine Parade, Littlestone, Kent, TN28 8QN. The Site Location Plan can be seen in the Appendices.
- 10.02 This site is situated within Flood Zone 3, and is therefore required to have a flood risk assessment submitted to the local planning authority in support of the planning application to demonstrate its safety in times of flood.
- 10.03 The development proposal consists of 1 No. Class C3 (Residential House) which will be situated within the village of Littlestone. The Development Proposals may be seen in the appendices.
- 10.04 The flood risk vulnerability classification for this type of development in this location is considered as More Vulnerable which is defined in Table 2 of the Technical Guidance to the National Planning Policy Framework.
- 10.05 The proposed development is situated within Zone 3 which can be seen in the Flood Map for Planning, contained in the appendices.
- 10.06 Based on the Information provided in both the Flood Maps for Planning and the Strategic Flood Risk Assessment, the probability of a flood event may be taken as Zone 3a – High Probability.
- 10.07 There is coastal flood risk associated with this site, as the site is on the sea front at Littlestone, approximately 45m from the sea defence wall. When looking at historical events, there was a wave overtopping incident in the 1990's by the Tower in Littlestone, some 675m away. No properties were flooded in this occurrence.
- 10.08 The existing external ground levels are around 5.7mAOD, which is approximately 0.21m above the highest predicted flood level. Environment Agency Guidance specifies that the Higher Central allowance for freeboard above the design flood should be set at 0.85m above the design flood, which is 5.49mAOD. The Ground Floor Slab has therefore been proposed at 6.34mAOD.

- 10.09 It is unlikely that there will be any risk of surface water flooding post development, however as a safeguard to the properties within the development, the finished floor levels shall be set at a minimum of 150mm above the external ground levels. In this case it will be significantly more than this.
- 10.10 All other possible flood risks relating to the proposed development will be managed by use of Sustainable Urban Drainage Systems (SUDS), wherever possible.
- 10.11 There are no foreseen residual risks relating to the proposed development following the implementation of the flood risk management measures and ongoing maintenance of the drainage systems for the site.
- 10.12 On the basis of the findings of this report, it is recommended that no objections should be raised to the development proposals on the grounds of flood risk.

Appendix A - Site Location Plan



Appendix B - Flood Maps for Planning

Flood map for planning

Your reference
Waverley Hous

Location (easting/northing)
608464/124550

Created
5 Jun 2019 6:58

Your selected location is in flood zone 3 – an area with a high probability of flooding that benefits from flood defences.

This means:

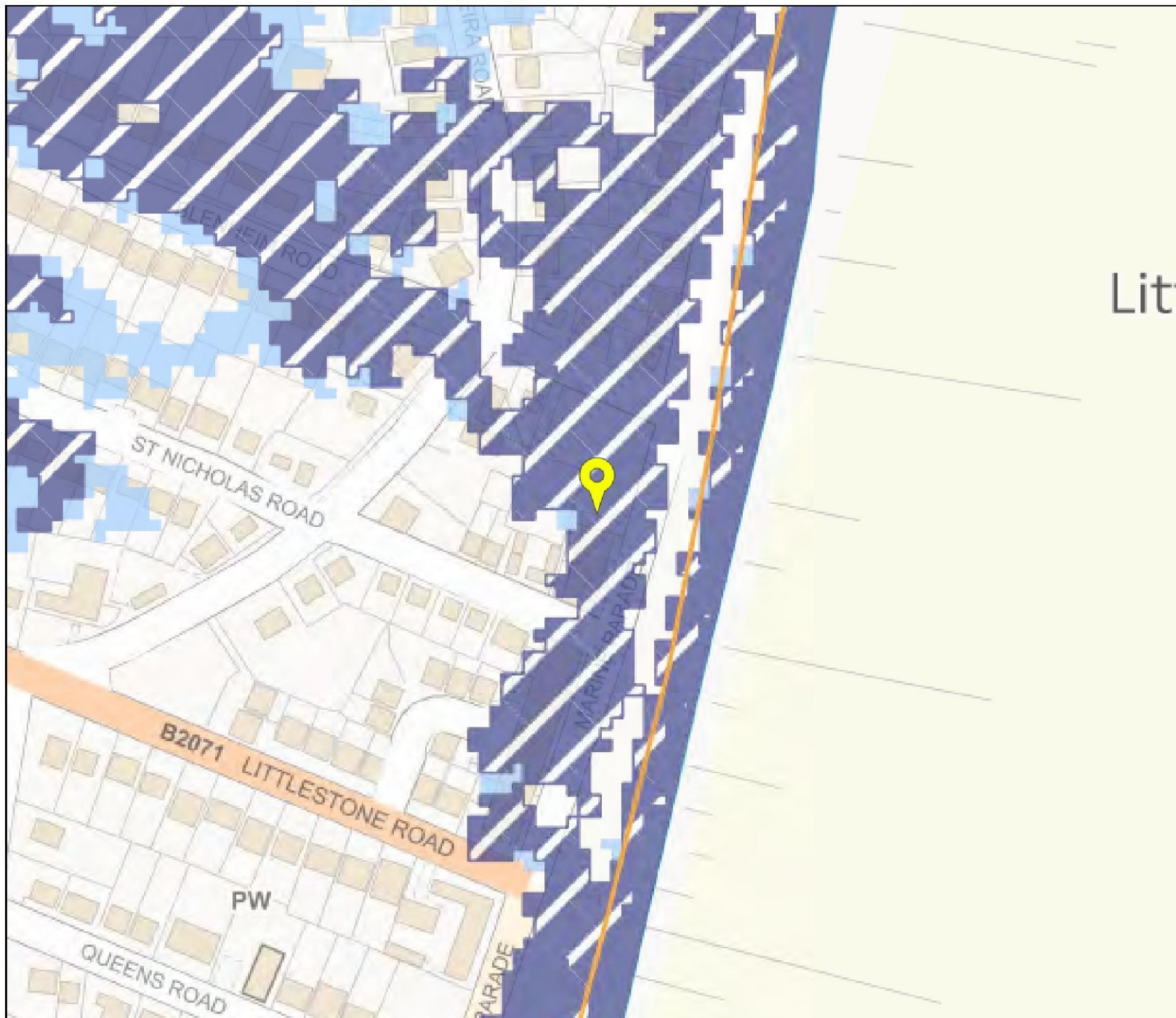
- you may need to complete a flood risk assessment for development in this area
- you should ask the Environment Agency about the level of flood protection at your location and request a Flood Defence Breach Hazard Map (You can email the Environment Agency at: enquiries@environment-agency.gov.uk)
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (find out more at www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



Flood map for planning

Your reference
Waverley Hous

Location (easting/northing)
608464/124550

Scale
1:2500

Created
5 Jun 2019 6:58

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m

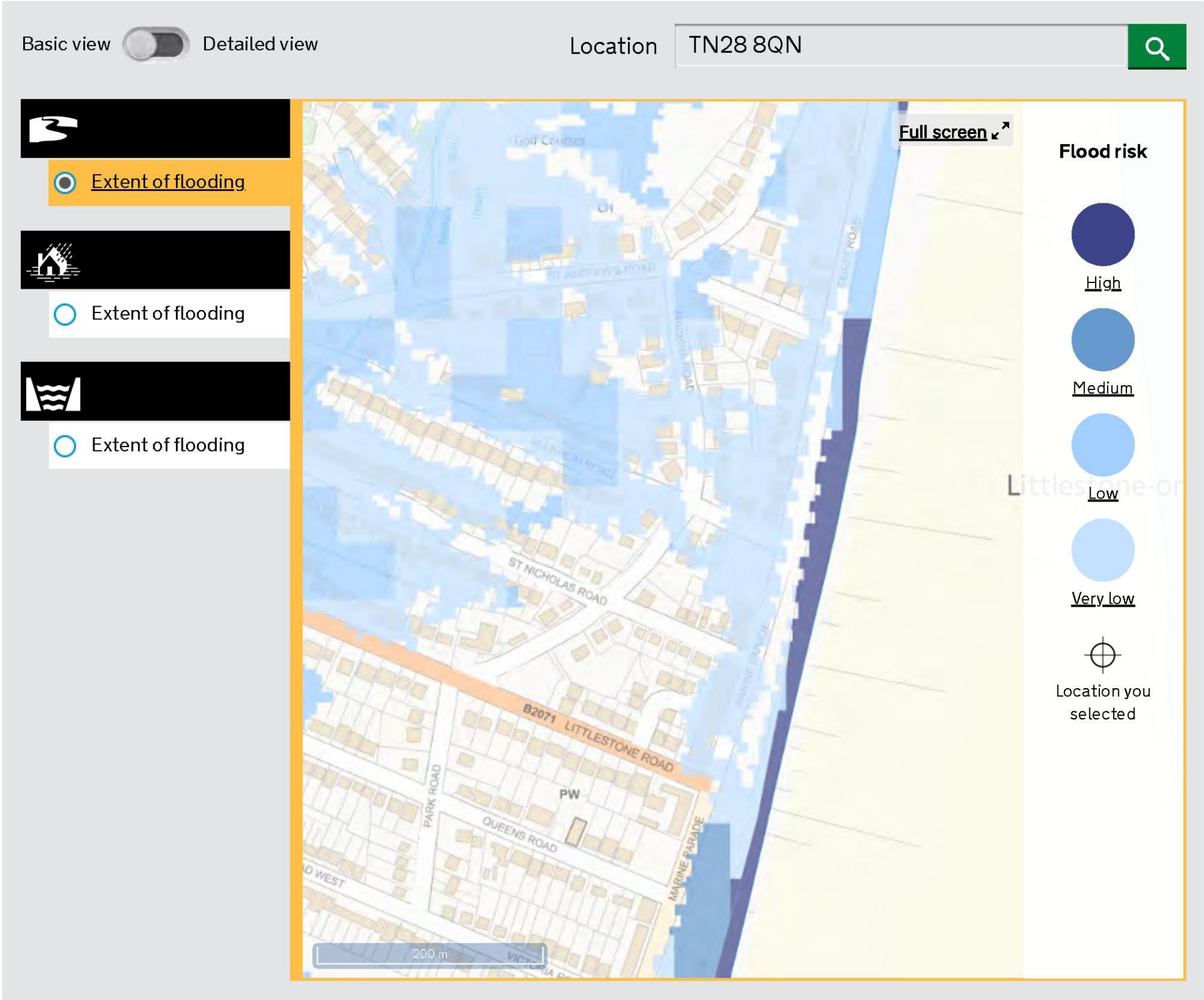
Learn more about flood risk

Select the type of flood risk information you're interested in. The map will then update.

You can [learn more about the ways we describe flood risk](#). Alternatively select a legend item or feature from the map for an explanation of that flood risk.

'Detailed view' shows more technical information.

All information, particularly the likelihood of surface water flooding, is a general indicator of an area's flood risk. As such it is not suitable for identifying whether an individual property will flood. This service uses computer models to assess an area's long term flood risk from rivers, the sea, surface water and some groundwater. It does not include flood risk from sources such as blocked drains and burst pipes.



Full screen

► [Accuracy of surface water flood risk information](#)

[View the flood risk information for another location](#)

<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>

1/2

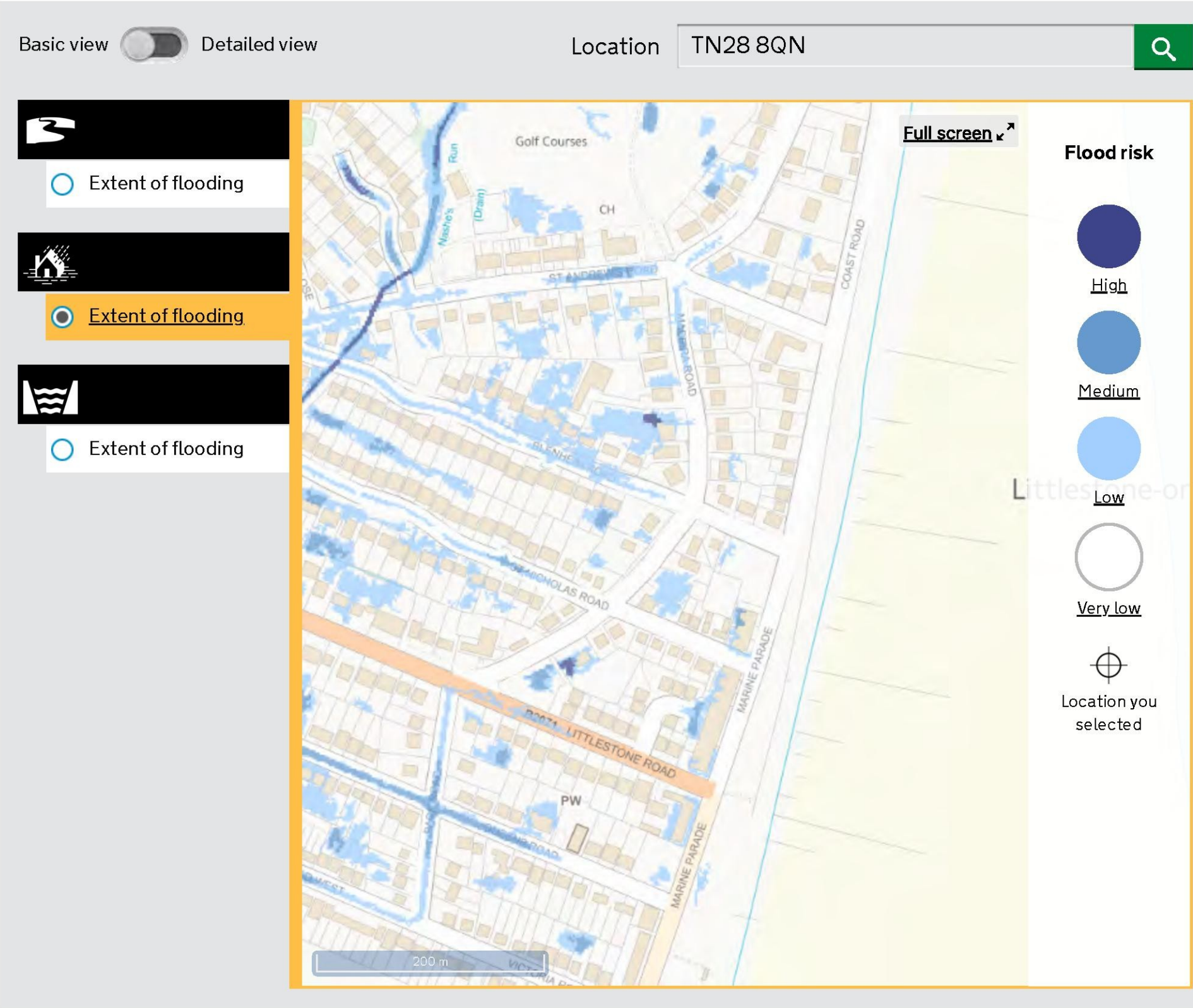
Learn more about flood risk

Select the type of flood risk information you're interested in. The map will then update.

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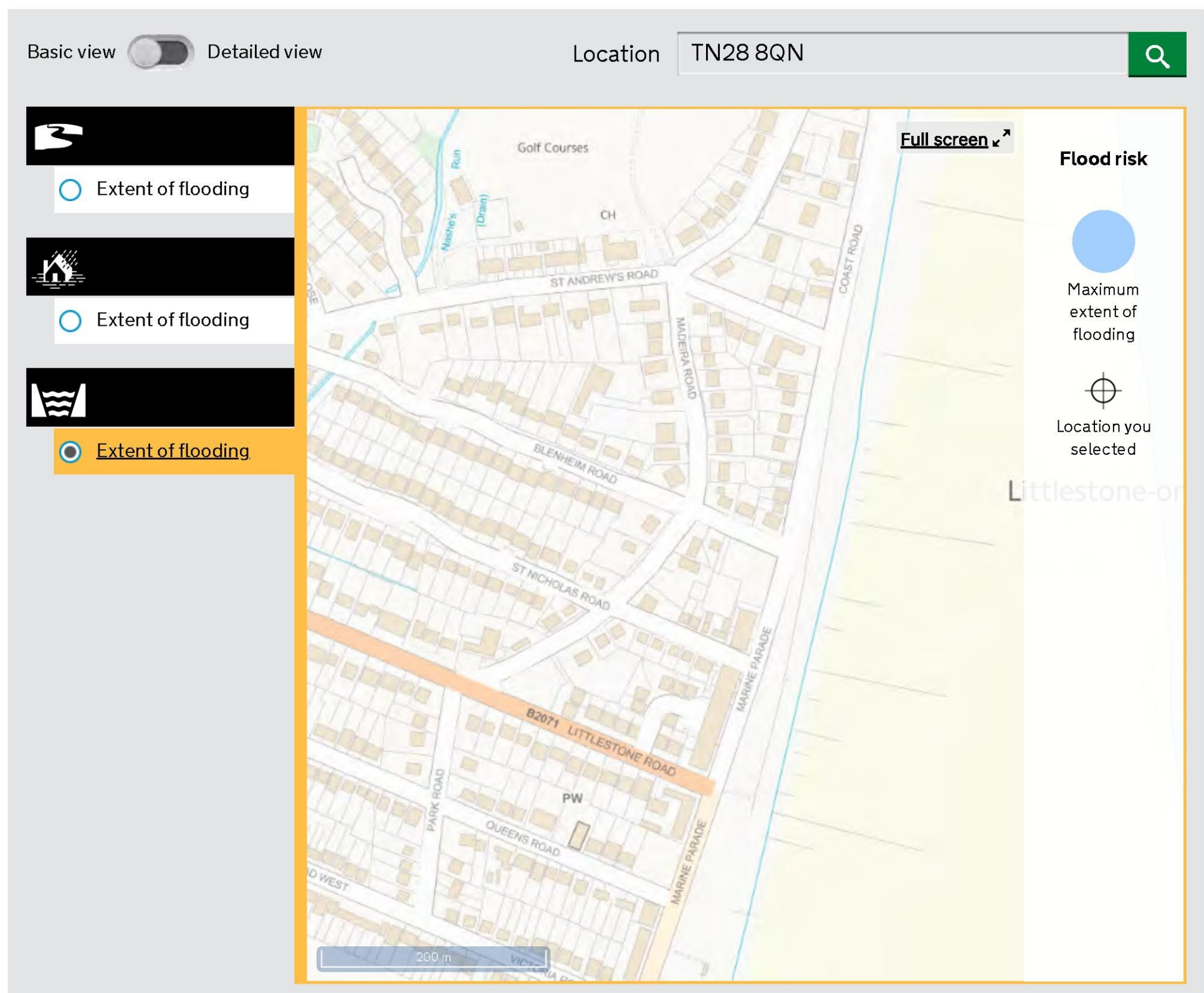
Learn more about flood risk

Select the type of flood risk information you're interested in. The map will then update.

You can [learn more about the ways we describe flood risk](#). Alternatively select a legend item or feature from the map for an explanation of that flood risk.

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- ▶ Accuracy of surface water flood risk information

[View the flood risk information for another location](#)

Appendix C - Environment Agency Information

Product 4 (Detailed Flood Risk) for: Land adjacent to Waverley House, Marine Parade, Littlestone, New Romney, Kent, TN28 8QN.
Requested by: Jamie Finch (RSPD)
Reference: KSL 129848 LB
Date: 14 June 2019

Contents

- Flood Map Confirmation
- Flood Map Extract
- Data Point Location Map
- Model Output Data
- Modelled Flood Outlines Map
- Defence Details
- Historic Flood Data
- Use of information for Flood Risk Assessment

The information provided is based on the best data available as of the date of this letter.

You may feel it is appropriate to contact our office at regular intervals, to check whether any amendments/ improvements have been made to the data for this location. Should you contact us again, after a period of time, please quote the above reference in order to help us deal with your query.

Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

Flood Map Confirmation

The Flood Map:

Our Flood Map shows the natural floodplain for areas at risk from fluvial and tidal flooding. The floodplain is specifically mapped ignoring the presence and effects of flood defences. Although flood defences reduce the risk of flooding they cannot completely remove that risk as they may be overtopped or breached during a flood event.

The Flood Map shows the probability of a flood of a particular magnitude, or greater, occurring in any given year. This is known as the Annual Exceedance Probability (AEP). Flood Zone 3 indicates areas of land having a 1 in 100 or greater annual probability (1% AEP) of flooding from rivers, or a 1 in 200 or greater annual probability (0.5% AEP) of flooding from the sea. Flood Zone 2 indicates areas of land having up to a 1 in 1000 annual probability (0.1% AEP) of flooding from rivers or the sea. The Flood Map also shows the location of some flood defences and the areas that benefit from them.

The Flood Map is intended to act as a guide to indicate the potential risk of flooding. When producing it we use the best data available to us at the time of completion, taking into account historic flooding and local knowledge. The Flood Map is updated on a quarterly basis to account for any amendments required. These amendments are then displayed on the internet at <https://flood-map-for-planning.service.gov.uk/>.

At this Site:

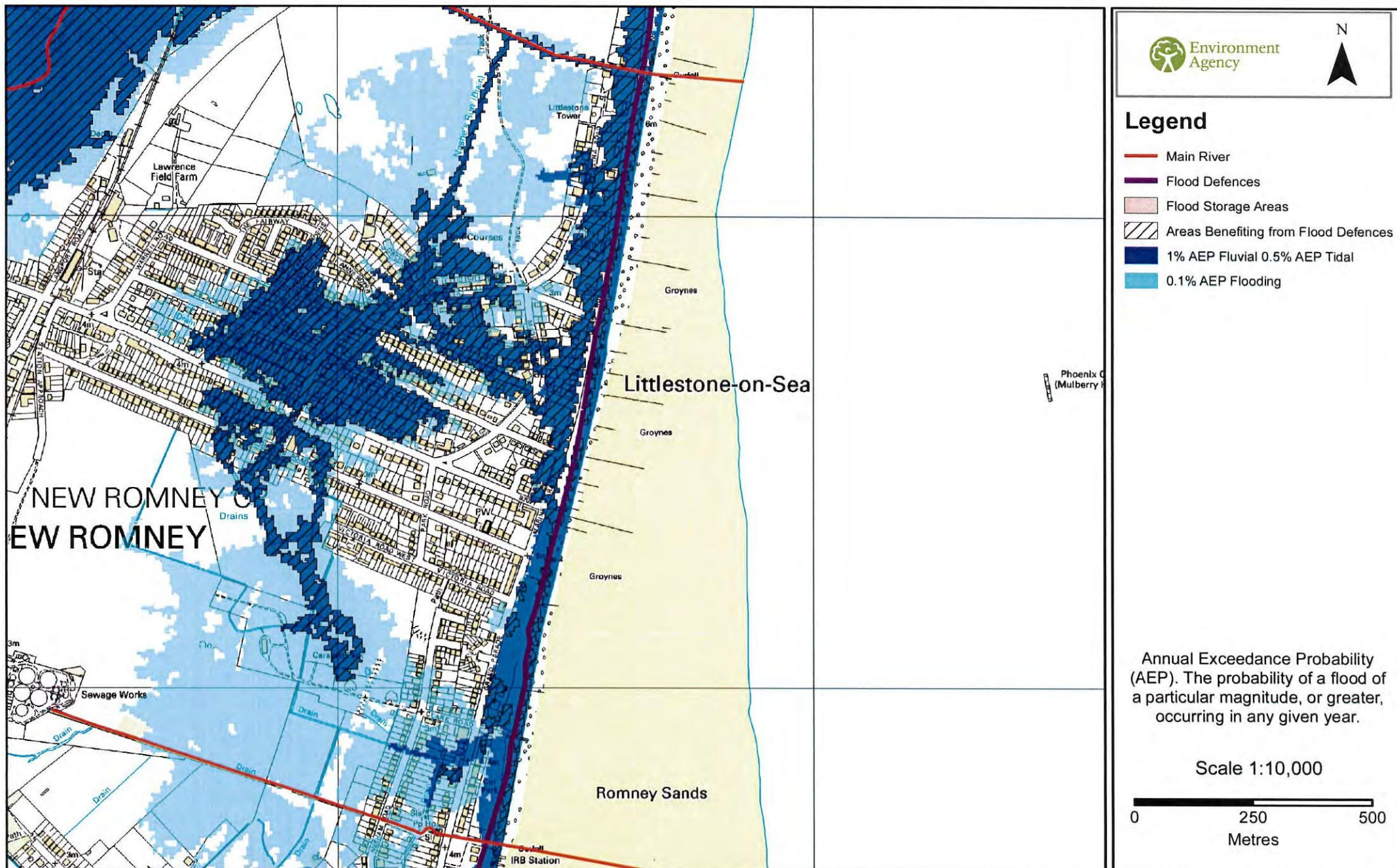
The Flood Map shows that this site lies within the outline of the 0.5% (Flood Zone 3) chance of flooding from the sea in any given year.

Enclosed is an extract of our Flood Map which shows this information for your area.

Method of production

The Flood Map at this location has been derived using detailed tidal modelling of Romney Marsh, completed by JBA Consulting in 2017.

**Flood map centred on land adjacent to Waverley House, Marine Parade, Littlestone,
New Romney, Kent, TN28 8QN. Created 14 June 2019 [Ref: KSL 129848 LB].**



Model Output Data

You have requested flood levels and/or depths for various return periods at this location.

A 2D TuFLOW model has been used to represent the floodplain as a grid. The flood water levels and/or depths have been calculated for each grid cell. The modelled flood levels/depths presented here are for the closest most appropriate model grid cells. Any additional information you may need to know about the modelling from which they are derived and/or any specific use or health warnings for their use are set out below.

A map showing the location of the points from which the data is taken is enclosed. Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

**Data points map centred on land adjacent to Waverley House, Marine Parade, Littlestone,
New Romney, Kent, TN28 8QN. Created 14 June 2019 [Ref: KSL 129848 LB].**



Table 1: Modelled tidal flood levels for Annual Exceedance Probability (AEP) events shown (mAOD).

Point ID	National Grid Reference		Modelled Tidal Flood Levels for Annual Exceedance Probability (AEP) events shown [metres AOD]										
			Undefended						Defended				
	Easting	Northing	0.5%	0.1%	0.5% + CC (2070)	0.1% + CC (2070)	0.5% + CC (2115)	0.1% + CC (2115)	20%	5%	1.33%	0.5%	0.1%
1	608455	124548	0.00	4.74	4.78	4.79	4.78	4.79	0.00	0.00	0.00	0.00	0.00
2	608458	124555	4.82	4.83	4.83	4.84	4.83	4.84	0.00	0.00	0.00	0.00	0.00
3	608464	124553	4.95	4.95	4.96	4.96	4.96	4.96	0.00	0.00	0.00	0.00	0.00
4	608471	124551	5.29	5.29	5.30	5.31	5.30	5.31	0.00	0.00	0.00	0.00	0.00
5	608478	124550	5.48	5.48	5.49	5.49	5.49	5.49	0.00	0.00	0.00	0.00	0.00
6	608462	124547	4.94	4.94	4.99	4.99	4.99	4.99	0.00	0.00	0.00	0.00	0.00
7	608468	124545	5.10	5.10	5.12	5.13	5.12	5.13	0.00	0.00	0.00	0.00	0.00
8	608475	124543	5.30	5.30	5.32	5.32	5.32	5.32	0.00	0.00	0.00	0.00	0.00
9	608454	124543	0.00	4.75	4.82	4.83	4.82	4.83	0.00	0.00	0.00	0.00	0.00
10	608459	124541	4.74	4.76	4.86	4.87	4.86	4.87	0.00	0.00	0.00	0.00	0.00
11	608467	124539	5.10	5.10	5.13	5.14	5.13	5.14	0.00	0.00	0.00	0.00	0.00
12	608473	124537	5.32	5.32	5.34	5.34	5.34	5.34	0.00	0.00	0.00	0.00	0.00

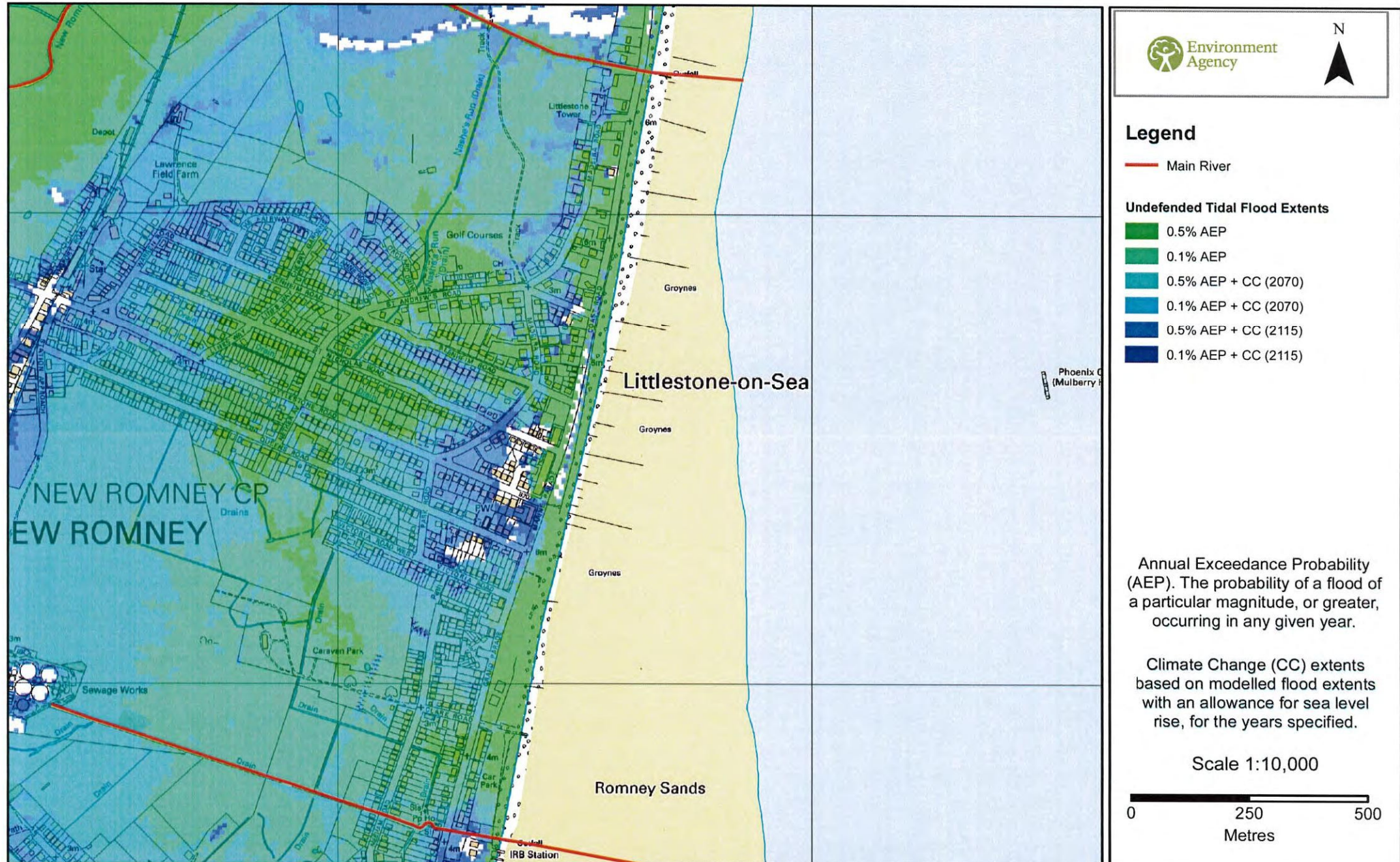
Data taken from the Romney Marsh Mapping Study, completed by JBA Consulting in 2017. Climate change (CC) data represents modelled levels and depths with an allowance for sea level rise for the years specified. Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent. There are no health warnings or additional information for these levels/depths, or the model from which they were produced.

Table 2: Modelled tidal flood depths for Annual Exceedance Probability (AEP) events shown (m).

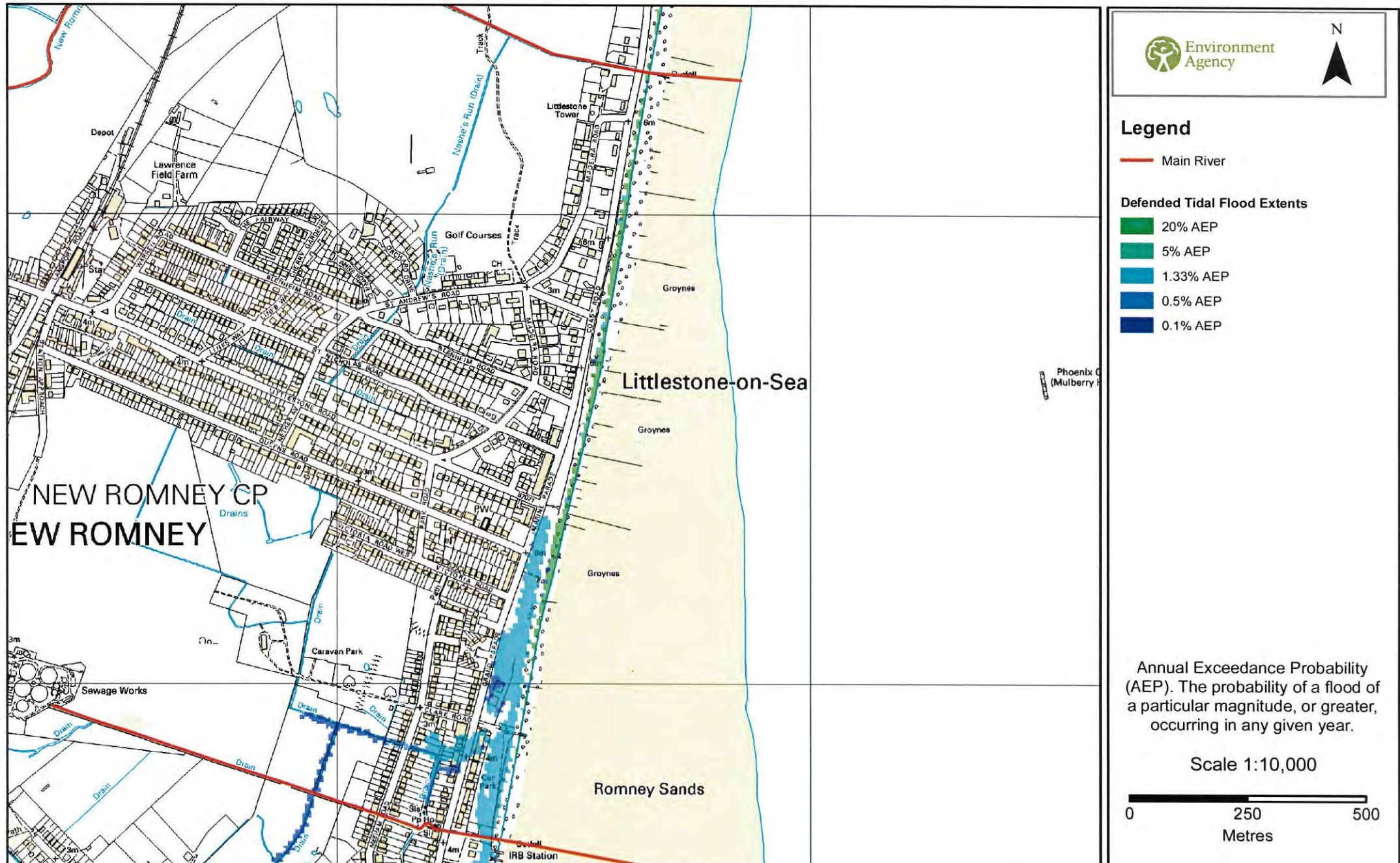
Point ID	National Grid Reference		Modelled Tidal Flood Depths for Annual Exceedance Probability (AEP) events shown (metres)										
			Undefended						Defended				
	Easting	Northing	0.5%	0.1%	0.5% + CC (2070)	0.1% + CC (2070)	0.5% + CC (2115)	0.1% + CC (2115)	20%	5%	1.33%	0.5%	0.1%
1	608455	124548	0.00	0.02	0.03	0.04	0.03	0.04	0.00	0.00	0.00	0.00	0.00
2	608458	124555	0.05	0.05	0.06	0.06	0.06	0.07	0.00	0.00	0.00	0.00	0.00
3	608464	124553	0.09	0.09	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00
4	608471	124551	0.01	0.01	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00
5	608478	124550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	608462	124547	0.01	0.01	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00
7	608468	124545	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00
8	608475	124543	0.03	0.03	0.03	0.04	0.03	0.04	0.00	0.00	0.00	0.00	0.00
9	608454	124543	0.00	0.00	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00
10	608459	124541	0.11	0.11	0.21	0.22	0.21	0.22	0.00	0.00	0.00	0.00	0.00
11	608467	124539	0.17	0.17	0.20	0.20	0.20	0.20	0.00	0.00	0.00	0.00	0.00
12	608473	124537	0.17	0.17	0.18	0.19	0.18	0.19	0.00	0.00	0.00	0.00	0.00

Data taken from the Romney Marsh Mapping Study, completed by JBA Consulting in 2017. Climate change (CC) data represents modelled levels and depths with an allowance for sea level rise for the years specified. Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent. There are no health warnings or additional information for these levels/depths, or the model from which they were produced.

Undefended flood extents map centred on land adjacent to Waverley House, Marine Parade, Littlestone, New Romney, Kent, TN28 8QN. Created 14 June 2019 [Ref: KSL 129848 LB].



Defended flood extents map centred on land adjacent to Waverley House, Marine Parade, Littlestone, New Romney, Kent, TN28 8QN. Created 14 June 2019 [Ref: KSL 129848 LB].



Defence Details

Natural sea defences at Greatstone comprise of a wide sandy beach backed by sand dunes. These defences currently provide a standard of protection for flood events with in excess of a 0.5% (1 in 200) chance of flooding from the sea in any given year. The defences are owned and maintained by Shepway District Council.

Sea defences between Greatstone dunes and Jesson outfall comprise of a shingle beach, two rock groynes and a concrete sea wall. The defences, together with annual shingle recycling undertaken between the two rock groynes, are designed to provide a standard of protection for flood events with a 0.5% (1 in 200) chance of flooding from the sea in any given year. The scheme was completed in 2003 and is owned and maintained by the Environment Agency.

Sea defences between Jesson outfall and High Knocke comprise of a sea wall which includes a concrete wave return wall and stepped revetment. Timber groynes act to retain sand on the frontage. The defences are designed to provide a standard of protection for flood events with a 0.75% (1 in 150) chance of flooding from the sea in any given year. The scheme was completed in 1995 and is owned and maintained by the Environment Agency.

Due to the flat nature of Romney Marsh, much of which is below present day high tide level, flooding could regularly occur from many areas along the coast without properly maintained sea defences.

At present the defences around Romney Marsh provide a varying standard of protection from 5% (1 in 20) at Lydd Ranges, to in excess of 0.5% (1 in 200) at Greatstone dunes.

As part of the Folkestone to Cliff End Strategy, we have significant investment planned to improve the remaining sea defences on Romney Marsh to provide a 0.5% (1 in 200) standard of protection from a flood event occurring at any point along the coast by 2022.

Areas Benefiting from Flood Defences

This site is within an area benefiting from flood defences, as shown on the enclosed extract of our Flood Map. Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences specifically in the event of flooding from rivers with a 1% (1 in 100) chance in any given year, or flooding from the sea with a 0.5% (1 in 200) chance in any given year.

If the defences were not there, these areas would be flooded. An area of land may benefit from the presence of a flood defence even if the defence has overtopped, if the presence of the defence means that the flood water does not extend as far as it would if the defence were not there.

Historic Flood Data

We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this site. However, please be aware that this does not necessarily mean that flooding has not occurred here in the past as our records are not comprehensive.

We would advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

Please be aware that flooding can come from different sources. Examples of these are:

- from rivers or the sea
- surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system)
- overflowing or backing up of sewer or drainage systems which have been overwhelmed
- groundwater rising up from underground aquifers

Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea. However you should be aware that in recent years, there has been an increase in flood damage caused by surface water flooding or drainage systems that have been overwhelmed.

Additional Information

Information Warning - OS background mapping

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Planning advice and guidance

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:

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

Complete the form in the link and email back to kslplanning@environment-agency.gov.uk.

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.

Flood Risk Assessments Guidance

Flood risk standing advice for applicants

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:

<https://www.gov.uk/flood-risk-assessment-standing-advice>

<http://planningguidance.planningportal.gov.uk/>

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

<https://www.gov.uk/guidance/flood-risk-and-coastal-change>

You should also consult the Strategic Flood Risk Assessment and flood risk local plan policies 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 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. You should discuss surface water management with your Lead Local Flood Authority.
3. Where a planning application requires a FRA and this is not submitted or deficient, the Environment Agency may well raise an objection due to insufficient information.

Surface Water

We have provided two national Surface Water maps, under our Strategic Overview for flooding, to your Lead Local Flood Authority who are responsible for local flood risk (i.e. surface runoff, ground water and ordinary watercourse), which alongside their existing local information will help them in determining what best represents surface water flood risk in your area.

Your Lead Local Flood Authority have reviewed these and determined what it believes best represents surface water flood risk. You should therefore contact this authority so they can provide you with the most up to date information about surface water flood risk in your area.

You may also wish to consider contacting the appropriate relevant Local Planning Authority and/or water/sewerage undertaker for the area. They may be able to provide some knowledge on the risk of flooding from other sources. We are working with these organisations to improve knowledge and understanding of surface water flooding.

Flood risk assessments: Climate change allowances

Its essential landuse planning decisions are based on the latest evidence and quality site specific Flood Risk Assessments. A key part of this is using the latest climate change allowances and using local evidence and data.

We encourage early pre applications discussions and you should complete this [form](#) and email back to kslplanning@environment-agency.gov.uk for sites in high risk flood zones. You should also discuss proposed developments with the local planning authority and refer to their local plan flood risk policies and Strategic Flood Risk Assessment. [Guidance on producing a Flood Risk Assessment.](#)

To obtain the latest flood map and data please email our customers and engagement team kslenquiries@environment-agency.gov.uk

1) The climate change allowances

The [National Planning Practice Guidance](#) refers planners, developers and advisors to the Environment Agency guidance on considering climate change in Flood Risk Assessments (FRAs). This guidance was updated in February 2016 and is available on [Gov.uk](#) and should be read in conjunction with this document. The guidance can be used for planning applications, local plans, neighbourhood plans and other projects. It provides climate change allowances for peak river flow, peak rainfall, sea level rise, wind speed and wave height. The guidance provides a range of allowances to assess fluvial flooding, rather than a single national allowance. It advises on what allowances to use for assessment based on vulnerability classification, flood zone and development lifetime. For proposed development in the tidal Thames flood zone you should continue to use the [Thames Estuary 2100 \(TE2100\) plan](#) and latest flood models.

2) Assessment of climate change impacts on fluvial flooding

Table A below [indicates](#) the level of technical assessment of climate change impacts on fluvial flooding appropriate for new developments depending on their scale and location. This should be used as a **guide only**. Ultimately, the agreed approach should be based on expert local knowledge of flood risk conditions, local sensitivities and other influences. **For these reasons we recommend that applicants and / or their consultants should contact the Environment Agency at the pre-planning application stage to confirm the assessment approach, on a case by case basis.** Table A defines three possible approaches to account for flood risk impacts due to climate change, in new development proposals:

- **Basic:** Developer can add an allowance to the 'design flood' (i.e. 1% annual probability) peak levels to account for potential climate change impacts.
- **Intermediate:** Developer can use existing modelled flood and flow data to construct a stage-discharge rating curve, which can be used to interpolate a flood level based on the required peak flow allowance to apply to the 'design flood' flow. See Appendix 1.
- **Detailed:** Perform detailed hydraulic modelling, through either re-running Environment Agency hydraulic models (if available) or construction of a new model by the developer.

Table A – Indicative guide to assessment approach

vulnerability classification	flood zone	development type		
		minor	small-major	large-major
essential infrastructure	Zone 2	Detailed		
	Zone 3a	Detailed		
	Zone 3b	Detailed		
highly vulnerable	Zone 2	Intermediate/ Basic	Intermediate/ Basic	Detailed
	Zone 3a	Not appropriate development		
	Zone 3b	Not appropriate development		
more vulnerable	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Detailed	Detailed
	Zone 3b	Not appropriate development		
less vulnerable	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Basic	Detailed
	Zone 3b	Not appropriate development		
water compatible	Zone 2	None		
	Zone 3a	Intermediate/ Basic		
	Zone 3b	Detailed		

Notes:

- Minor: 1-9 dwellings/ less than 0.5 ha | Office / light industrial under 1ha | General industrial under 1 ha | Retail under 1 ha | Gypsy/traveller site between 0 and 9 pitches
- Small-Major: 10 to 30 dwellings | Office / light industrial 1ha to 5ha | General industrial 1ha to 5ha | Retail over 1ha to 5ha | Gypsy/traveller site over 10 to 30 pitches
- Large-Major: 30+ dwellings | Office / light industrial 5ha+ | General industrial 5ha+ | Retail 5ha+ | Gypsy/traveller site over 30+ pitches | any other development that creates a non residential building or development over 1000 sq m.

The assessment approach should be agreed with the Environment Agency as part of pre-planning application discussions to avoid any wasted work.

3) Specific local considerations in Kent and South London

Where the Environment Agency and the applicant and / or their consultant has agreed that a 'basic' level of assessment is appropriate the figures in Table B below can be used as a precautionary allowance for potential climate change impacts on peak 'design' (i.e. 1% annual probability) fluvial flood level rather than undertaking detailed modelling.

Table B – Local precautionary allowances for potential climate change impacts

River basin	Central	Higher Central	Upper
Thames	500mm	700mm	1000mm
South East	700mm	850mm	1400mm

For proposed developments in the tidal Thames flood zone you should continue to use the Thames Estuary 2100 (TE2100) plan and latest flood models.

4) Fluvial food risk mitigation

Read the guidance on [Gov.uk](https://www.gov.uk) to find out which allowances to use to **assess** the impact of climate change on flood risk.

For planning consultations where we are a statutory consultee and our [Flood risk standing advice](#) **does not** apply we use the following benchmarks to inform flood risk **mitigation** for different vulnerability classifications. **These are a guide only.**

We recommend you contact us at the pre-planning application stage to confirm this on a case by case basis. We can provide you with a free basic opinion and more detailed advice is subject to cost recovery.

For planning consultations where we are not a statutory consultee or our [Flood risk Standing advice](#) applies we recommend local planning authorities and developers use these benchmarks but we do not expect to be consulted.

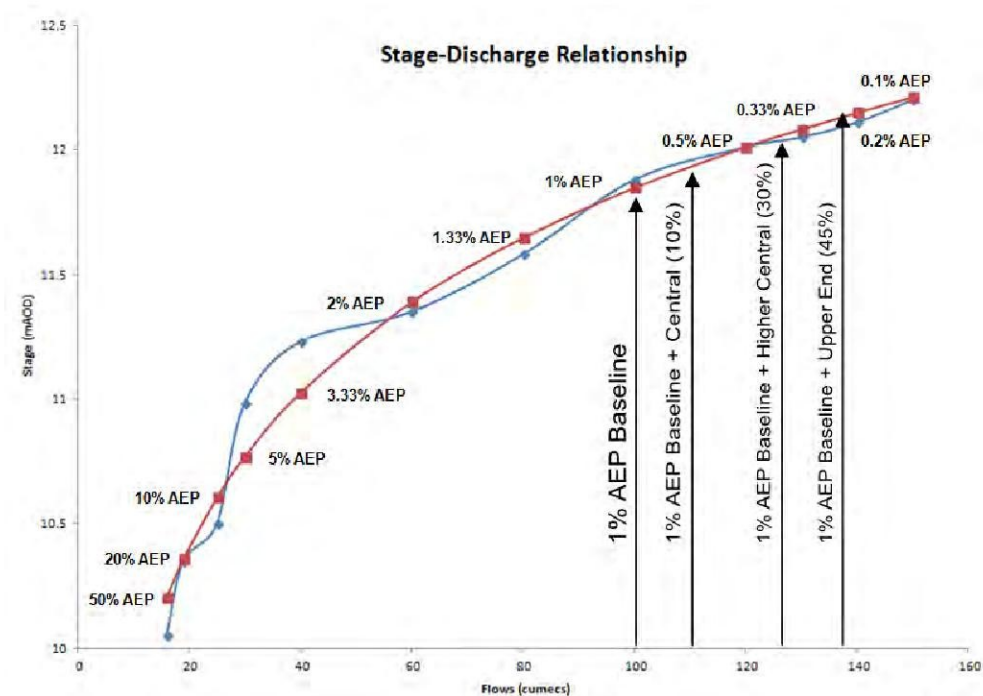
- For development classed as '[Essential Infrastructure](#)' our benchmark for flood risk mitigation is for it to be designed to the '**upper end**' climate change allowance for the epoch that most closely represents the lifetime of the development, including decommissioning.
- For [highly vulnerable](#) in flood zone 2, the '**higher central**' climate change allowance is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **upper end** allowance.
- For [more vulnerable developments](#) in flood zone 2, the '**central**' climate change allowance is our minimum benchmark for flood risk mitigation, and in flood zone 3 the '**higher central**' climate change allowance is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **higher central** (in flood zone 2) and the **upper end** allowance (in flood zone 3).
- For [water compatible](#) or [less vulnerable](#) development (e.g. commercial), the '**central**' climate change allowance for the epoch that most closely represents the lifetime of the development is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **higher central** (particularly in flood zone 3) to inform built in resilience.

There may be circumstances where local evidence supports the use of other data or allowances. Where you think this is the case we may want to check this data and how you propose to use it.

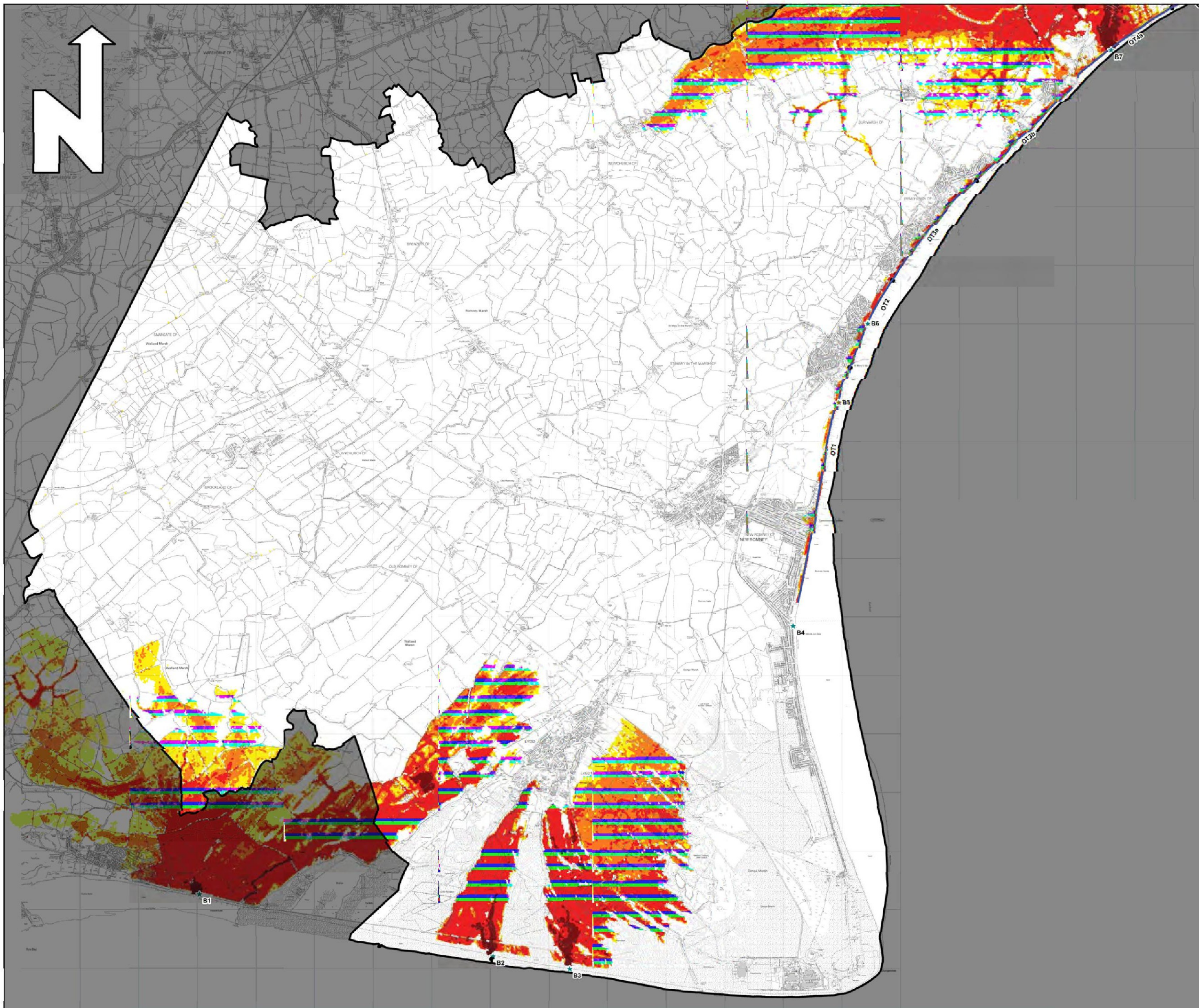
Appendix 1 – Further information on the Intermediate approach

- 1) The methodology the chart is based on does not produce an accurate stage-discharge rating and is a simplified methodology for producing flood levels that can be applied in low risk small-scale development situations;
- 2) The method should not be applied where there is existing detailed modelled climate change outputs that use the new allowances. In such circumstances, the 'with climate change' modelled scenarios should be applied.

An example stage-discharge relationship is shown below:



Appendix D - SFRA Maps



This map shows flood hazard from coastal sources comprising flooding from breaching and overtopping of defences. It should be noted that certain locations not shown may be at risk of flooding from other sources (fluvial, pluvial, sewer flooding etc) and from other watercourses not shown in this study.

HAZARD MAPS [2015]

Shepway District Council Strategic Flood Risk Assessment



Hazard Map Legend:

- 0.5 - 0.75 [Low]
- 0.75 - 1.25 [Moderate]
- 1.25 - 2.5 [Significant]
- > 2.5 [Extreme]
- Overtopping Boundary
- Overflow Boundary
- Breach Locations
- Shepway Boundary

"Hazard Rating calculated in accordance with criteria set out in 'Flood Risk to People' (R&D Output FD2320/TR2)"

Refer to Table 9.1 for details of Breach Characteristics
Refer to Table 9.2 for details of Breach and Overtopping Scenarios

This plan has been produced in accordance with Planning the National Planning Policy Framework (NPPF). Because the information is indicative rather than specific, the Local Planning Authority will nevertheless need to consult the Environment Agency on individual applications. Users should note that the flood plain extents were mapped at 1:10,000 scale, as appropriate to the level of investigation and are based on information available at the time of survey. Amendments will be required in future to account for information gathered subsequently e.g. changes in sea level predictions or observations following flood events. When in doubt the Environment Agency should be consulted.

The cell size of this map has been resampled from 25m to 12.5m to improve viewing resolution. Therefore, this map should only be used at a strategic level.

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Drawn: KT	Date: 26-05-2015	Scale: 1 : 60 000
Checked: SMB	Date: 26-05-2015	Original @ A3
Approved: SMB	Date: 26-05-2015	Revision No.
Drawing Number: HAZARD_B_2015	Revision No. 0	Sheet Number: 2 of 2
		Status: FINAL

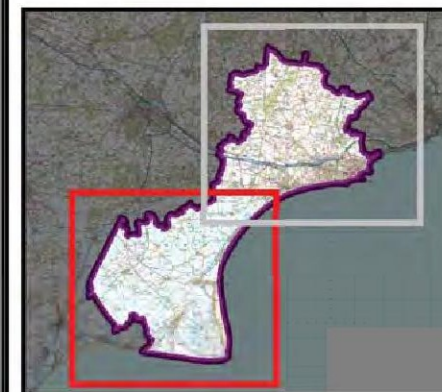
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This map shows flood hazard from coastal sources comprising flooding from breaching and overtopping of defences. It should be noted that certain locations not shown may be at risk of flooding from other sources (fluvial, pluvial, sewer flooding etc) and from other watercourses not shown in this study.

HAZARD MAPS [2075]

Shepway District Council Strategic Flood Risk Assessment



Hazard Map Legend*

	0.5 - 0.75 [Low]
	0.75 - 1.25 [Moderate]
	1.25 - 2.5 [Significant]
	> 2.5 [Extreme]
	Overtopping Boundary
	Overflow Boundary
	Breach Locations
	Shepway Boundary

*Hazard Rating calculated in accordance with criteria set out in "Flood Risk to People" (R&D Output FD2320/TR2)

Refer to Table 9.1 for details of Breach Characteristics
Refer to Table 9.2 for details of Breach and Overtopping Scenarios

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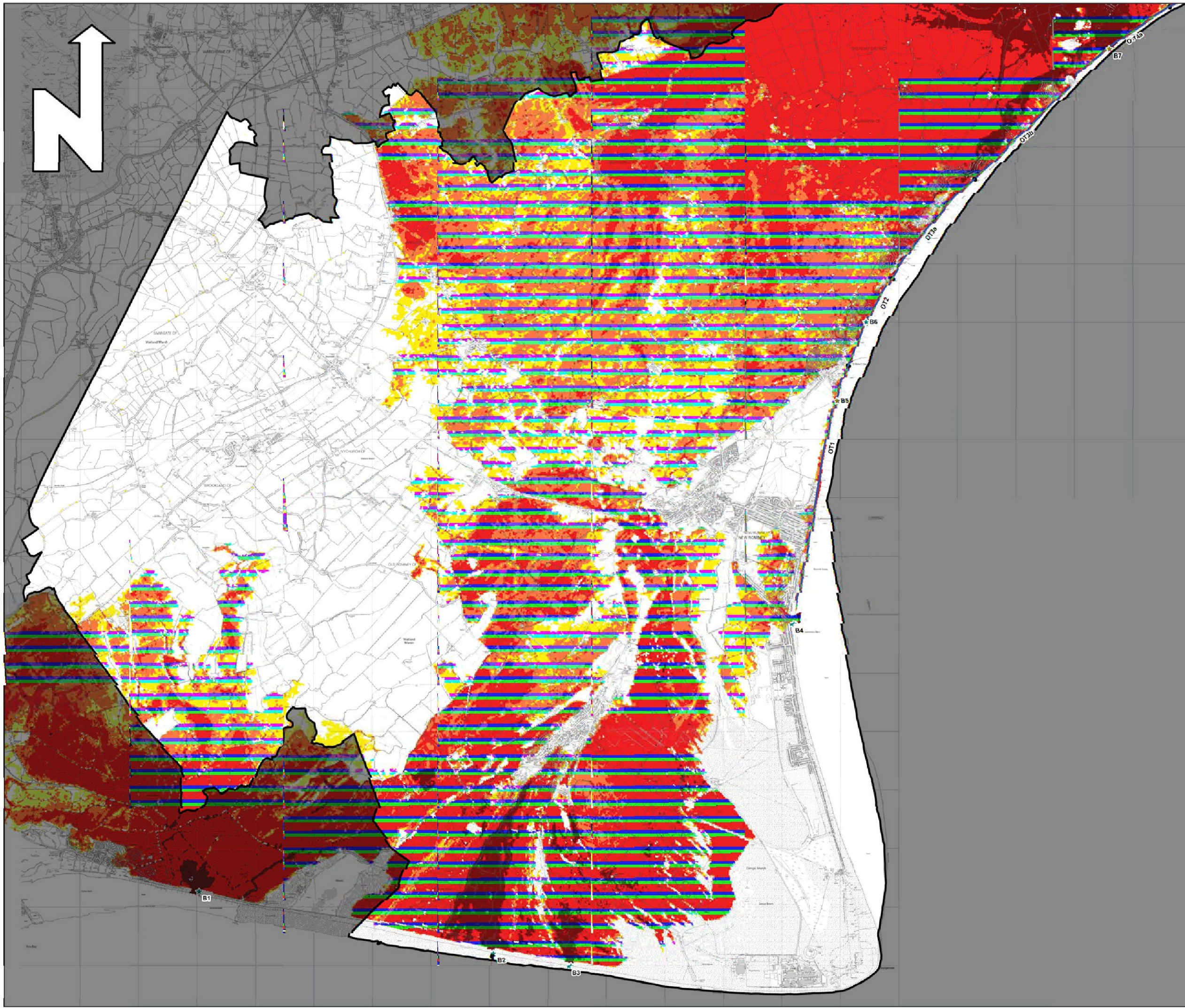
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Checked:	SMB	Date:	27-05-2015	Original @	A3
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Drawing Number:	HAZARD_B_2075	Revision No.	0	Sheet Number:	2 of 2
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HAZARD MAPS [2115]

Shepway District Council Strategic Flood Risk Assessment



Hazard Map Legend*	
	0.5 - 0.75 [Low]
	0.75 - 1.25 [Moderate]
	1.25 - 2.5 [Significant]
	> 2.5 [Extreme]
	Overtopping Boundary
	Overflow Boundary
	Breach Locations
	Shepway Boundary

*Hazard Rating calculated in accordance with criteria set out in "Flood Risk to People" (R&D Output FD2320/TR2)

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Appendix E - Development Proposals



<table border="1"> <thead> <tr> <th>Rev</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Rev	Date	Description				ADAM WOODBRIDGE ARCHITECTS Client / Project Proposed new house Land adjacent to Waverley House Marine Parade Littlestone New Romney Kent. TN28 8QN	Drawing Description Site and Location Plan as Existing Scale 1:200/1250@A3 Drawing Number 18_91_01 Date January 2019 Revision
Rev	Date	Description						

Appendix F - Sequential Test