



FLOOD RISK ASSESSMENT

for

Proposed Extension & Conversion of garage,
Re-build of Rear Garden Room at
30 High Knocke,
Dymchurch
Romney Marsh
Kent TN29 0QD

on behalf of

South Kent Methodist Circuit

Document Control Sheet

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CONTENTS

1.0	Executive Summary	4
2.0	Status.....	5
3.0	Introduction.....	6
	Background.....	6
	Site Location.....	6
	Existing Site Layout.....	8
	Proposed Development.....	11
	Requirement for Flood Risk Assessment.....	13
	Consultation.....	15
4.0	National Planning Policy Framework Context.....	23
	Sequential Test.....	29
	Exception Test.....	31
5.0	Environmental Conditions.....	32
	Topography.....	32
	Flood Defences.....	32
	Historical Flooding.....	32
	Flood Hazards.....	32
	Risks & Controls.....	35
	Off Site Impact.....	36
	Residual Risks.....	36
6.0	Surface Water Disposal.....	37
7.0	Sustainability Appraisal.....	38
8.0	Local Planning History.....	46
9.0	Conclusions & Recommendations.....	48
	Appendix A Architects Drawings 522-AA-100	
	Appendix B Product Data 4 Flood Prevention Diagram	

1.0 EXECUTIVE SUMMARY

- 1.1 Tridax Ltd has been commissioned by South Kent Methodist Circuit to undertake a Flood Risk Assessment for the proposed extension and conversion of a garage together with the re-build of a rear garden room that will provide a home office, bedroom and shower.
- 1.2 This Flood Risk Assessment Report (FRA) is prepared in accordance with the Technical Guidance to the National Planning Policy Framework (NPPF) and the Kent County Council Local Flood Risk Management Strategy ~ Guidance on Consultation. The Report takes into consideration the Folkestone & Hythe Council's Strategic Flood Risk Assessment, dated July 2015 together with the Environment Agency advice note and details the observations, calculates the probable flows that may be generated by the development and makes recommendations for the disposal of foul and surface water and identifies any special mitigation measures required to reduce the risks of flooding.
- 1.3 In preparing this Flood Risk Assessment, consultation has been undertaken with the Environment Agency regarding the extent of available information on flood risk at the Site. Flood Mapping and Product Data 4 information has been provided by the Environment Agency which is derived using the detailed tidal modelling of Romney Marsh completed by JBA Consulting in 2020.
- 1.4 Tridax Ltd consider that with the inclusion of the mitigation measures recommended within this report that the site is sustainable in terms of flood risk and that the proposals do not increase the risk to the neighbouring properties.

2.0 STATUS

- 2.1 This Report is prepared for the sole use of South Kent Methodist Circuit and their agents in connection with the proposed development. No responsibility can be assumed for the Report if used by others.
- 2.2 For the purposes of the Contracts (Rights of Third Parties) Act 1999, nothing in this Report shall confer on any third party any right to enforce or benefit from any term of this Report

3.0 INTRODUCTION

Background

- 3.1 Tridax Ltd has been commissioned by the South Kent Methodist Circuit and requested to undertake a Flood Risk Assessment for the proposed extension and conversion of a garage together with the re-build of a rear garden room that will provide a home office, a single bedroom and shower.

Site Location

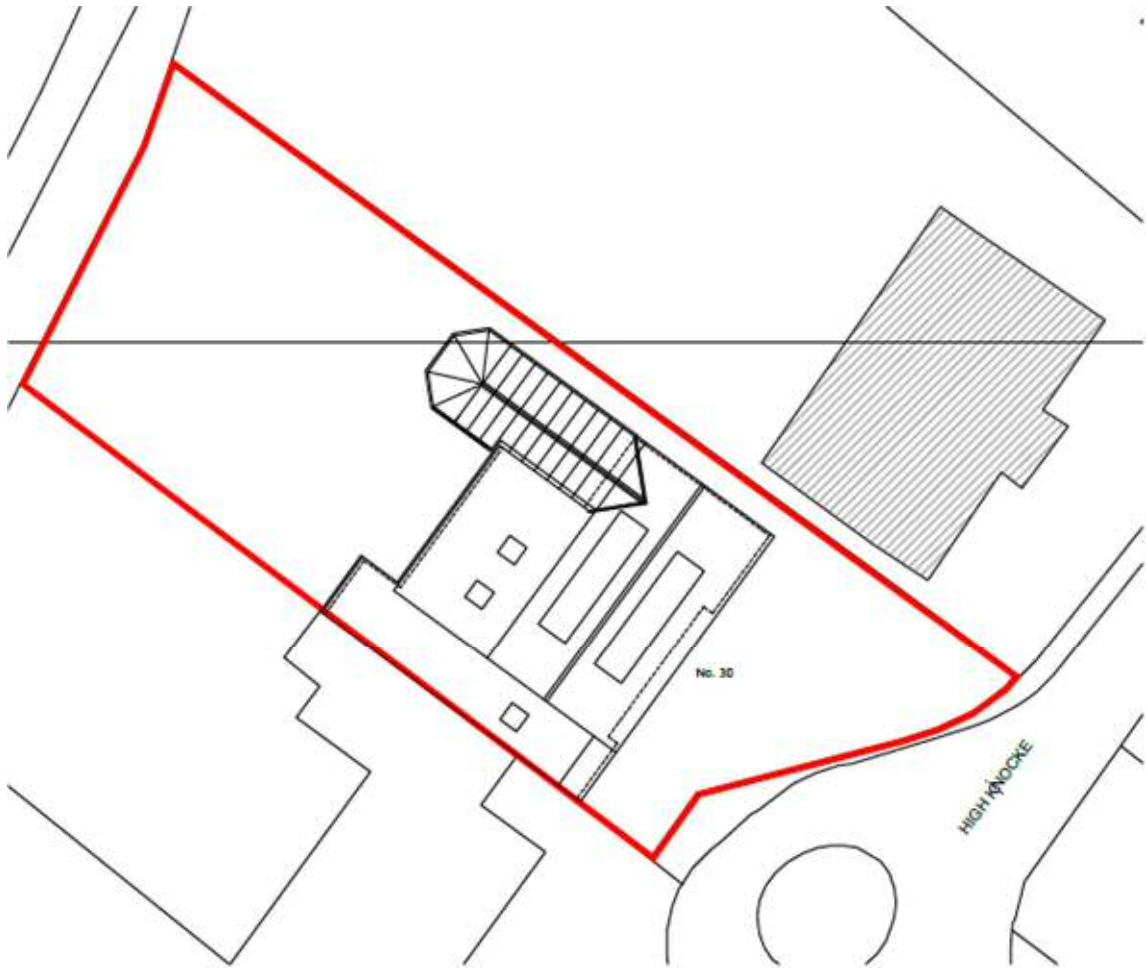
- 3.2 30 High Knocke is a chalet bungalow, located approximately 770m southwest of the junction of Dymchurch Road with St Marys Road in the town of Dymchurch. The property is situated on the western side of High Knocke facing onto open countryside. The property is located in a residential area approximately 200m southwest of the junction of High Knocke with Dymchurch Road (A259), 70m offset from the Dymchurch Road and 100m from the Dymchurch Seawall. High Knocke has a diverse mixture of property styles. The existing property is brick built with partial rendered front elevation under a concrete tiled. The site has an open front eastern boundary with rear timber fences to form the south, west and north boundaries. The existing building is centred at Ordnance Survey reference TR 09633 28593 (609633mE, 128593mN). The footprint of the existing property is approximately 175m² (0.018ha). Post-development the footprint is increased by 9m² to 184m² (0.018ha). The total site area is approximately 600m² (0.06ha). The existing site location, aerial and block plans are extracted in Frames 1, 2 and 3 below and identified on the Architects drawing included in Appendix A of this report.



Frame 1 – Location Plan – Site Edged Red



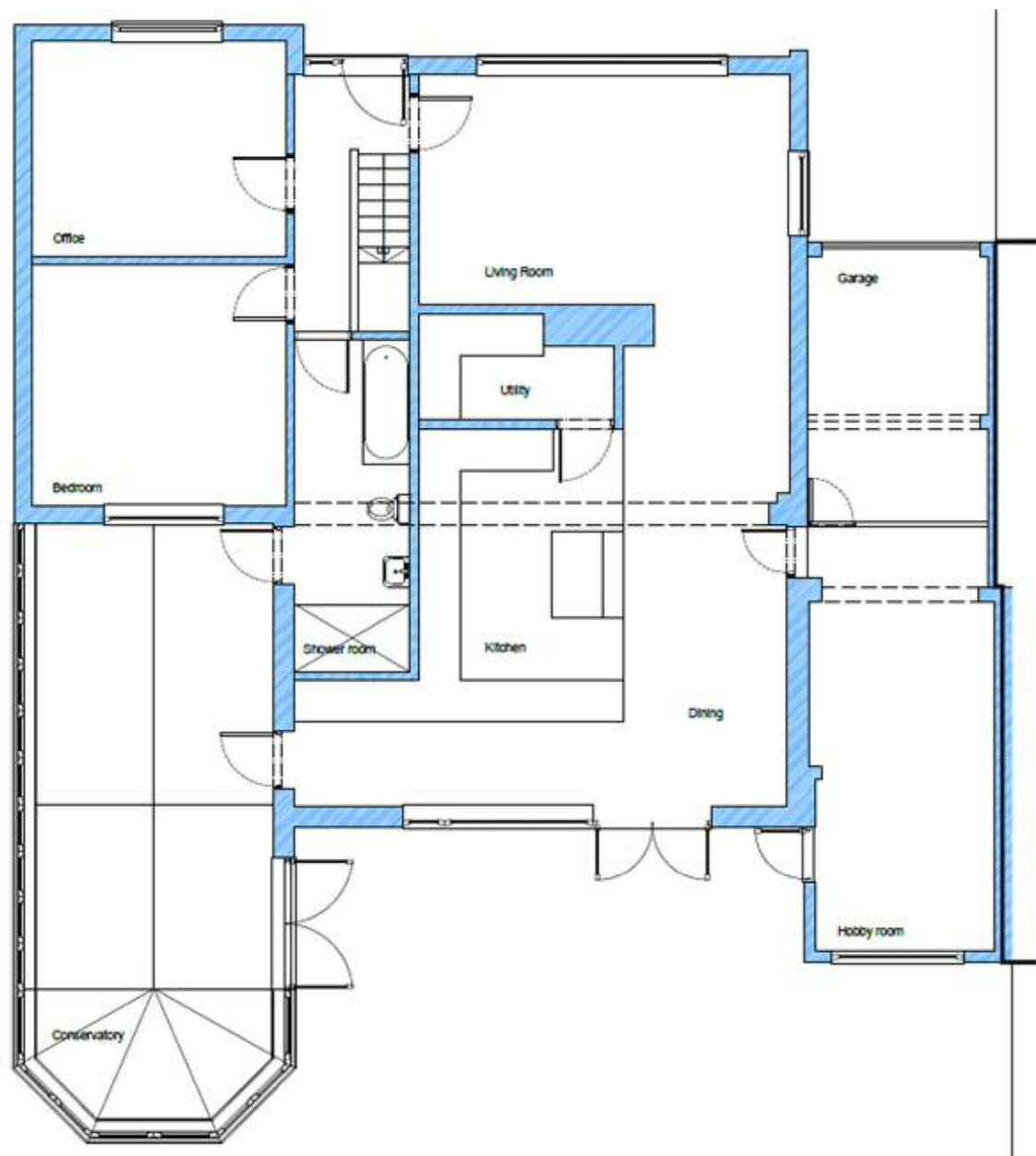
Frame 2 – Aerial Block Plan – Site Edged Red



Frame 3 – Block Plan

Existing Site Layout

- 3.3 The property has vehicular access directly from High Knocke at the southeast boundary. There are no formal pathways on High Knocke so pedestrian access is via the highway. Extracts of the existing layout plan together with the elevation views are shown in Frames 4 and 5 below. It should be noted that there is currently sleeping accommodation at the ground floor level. A photographic view of the existing property is extracted in Frame 6 below.



Frame 4 – Existing Ground Floor Layout Plan

Note: Sleeping provided at this level



Frame 5 – Elevation views



Frame 6 – Photo of Front Elevation

- 3.4 A basic topographical survey has been undertaken which identifies ground levels on the highway directly outside the property to be 2.74mAOD. The local topography is generally flat with only minor variations in levels. The entrance thresholds and ground floor level to the property is identified as 3.00mAOD. First floor level is circa 5.60mAOD.
- 3.5 Inspection of the public sewer records indicates that there is a public 150mmØ foul sewer approximately 2.2m deep in High Knocke adjacent the southeastern site boundary. It is assumed that the existing building discharges foul drainage to the public foul system. There are no separate surface water sewers identified at this location. It is assumed that surface water runoff infiltrates via soakaways within the site or discharges to the local watercourse although this does require confirmation. Extracts of the public sewer records are shown in Frame 7 below.



Frame 7 – Extract of Public Sewer Records

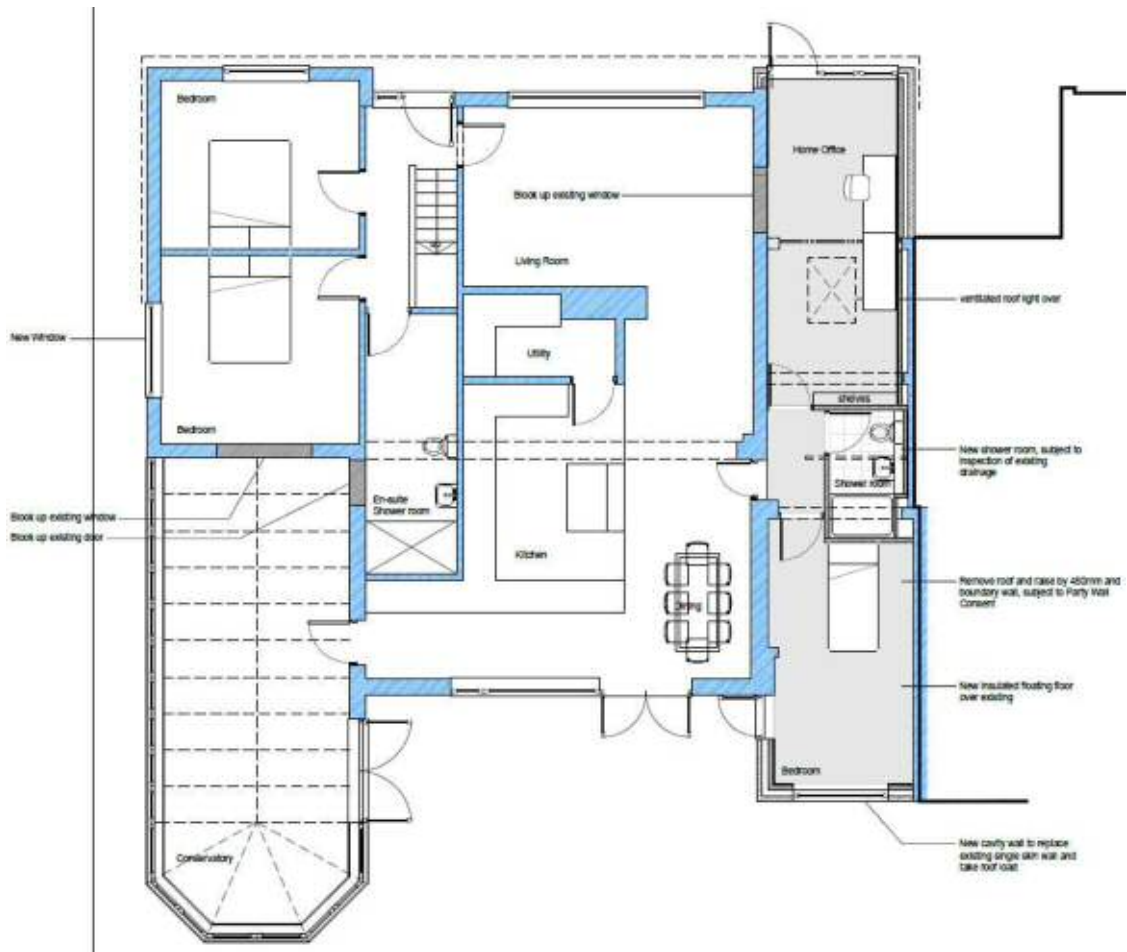
- 3.6 Inspection of the Geological Map of Great Britain indicates that the site will be underlain with a Bedrock of Wealden Group – Sandstone and siltstone interbedded with superficial deposits of Alluvium. Extracts of the Geological Map are shown in Frame 8 below.



Frame 8 – Extract of the Geological Map

Proposed Development

- 3.7 The applicant is seeking to extend and convert the existing garage and rebuild a rear garden room. The details are identified on the Architects drawings enclosed within Appendix A as extracted in Frames 9 and 10 below. Post-development will increase the impermeable surface finishes from the existing 175m² to 184m² therefore, increasing the quantity of surface water runoff generated by this development although this is considered insignificant.
- 3.8 The walls are to be built as conventional brick and blockwork cavity construction. The construction of the new building will utilise flood resilient construction methods. The types of materials used in the construction of the development will be chosen to prevent or reduce the risk of structural damage caused by flood or surface water runoff to prevent the growth of wet rot spores. The access points into the development site will remain as existing. The proposal is to introduce additional sleeping accommodation at the ground floor level.



Frame 9 – Visual of new building



Frame 10 – Elevation views

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- 3.9 The Environment Agency recommends that finished floor levels (FFL) are set a minimum of 600mm above the design flood level if sleeping arrangements are provided at ground floor level or 300mm above the design flood level for all other habitable accommodation.
- 3.10 Surface water run-off from the new extension will be collected via suitable guttering and rainwater downpipes and discharge to the existing surface water system. There will be a minor increase in surface water runoff generated by this development, however, a suitably designed soakway will be installed to infiltrate within the site so there will be no impact on any adjacent properties.
- 3.11 The foul drainage requirements will be designed in accordance with Building Regulations to utilise the properties existing foul drainage system.

Requirement for Flood Risk Assessment

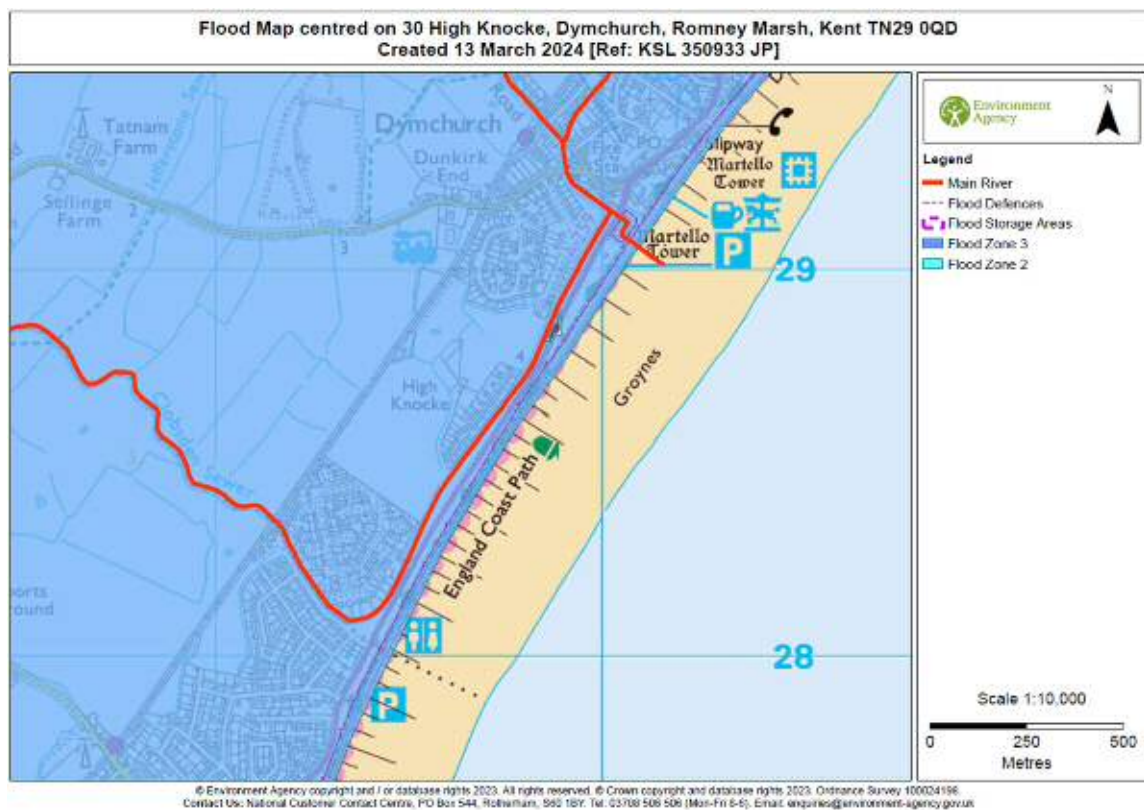
- 3.12 Flood risk is primarily regulated through planning policy. Key requirements with respect to flooding are outlined in the National Planning Policy Framework (NPPF) which was published in March 2012, revised in July 2018 and updated 19 February 2019.
- 3.13 The NPPF requires that an FRA should be submitted with planning applications for all sites over one hectare in area and all smaller sites within Flood Zones 2 and 3 to determine the risks of flooding at a development site (from all sources including rivers, the sea, sewers and groundwater). An FRA is therefore an essential element in the overall acceptability of the proposed development in planning terms.
- 3.14 Guidance on the content of FRAs is contained in Technical Guidance to the National Planning Policy Framework which has been used to inform the scope and content of this FRA.
- 3.15 The primary resource for reviewing fluvial and tidal flood risks is via the Environment Agency (EA) indicative floodplain maps and analysis of their Product Data 4. These classify risks as follows:

- Flood Zone 1 (Low Probability): annual probability of flooding less than 1 in 1,000 (<0.1%);
- Flood Zone 2 (Medium Probability): annual probability of flooding more than 1 in 1,000 (0.1%) but less than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding; and
- Flood Zone 3 (High Probability): annual probability of flooding more than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding.

3.16 Inspection of the Environment Agency Product Data 4 Information together with discussions with them indicate that the site lies within the outline of a Flood Zone 3 (High Probability) with a 0.5% probability of tidal flooding in any given year. The Flood Map also identifies the site to lie within the outline of the 0.1% (Flood Zone 2) chance of flooding from the sea in any given year.

Consultation

- 3.17 In preparing this Flood Risk Assessment, consultation has been undertaken with the Environment Agency both at an initial contact and a further enquiry regarding the extent of available information on flood risk at the site which is extracted as the Flood Map in Frame 11 below. The Environment Agency Product 4 (Detailed Flood Risk) information is included in Appendix B. The information provided is based on the best data currently available.



Frame 11 – Extract of Environment Agency Flood Maps

- 3.18 The Environment Agency Flood Map shows the natural floodplain for areas at risk from river and tidal flooding. The floodplain is specifically mapped ignoring the presence and effect of defences. Although flood defences reduce the risk of flooding they cannot completely remove that risk as they may be over topped or breached during a flood event. The Flood Map at this location has been derived using detailed tidal modelling of the Romney Marsh, completed by JBA Consulting in 2020. The Flood Zones produced by this model are made up of the combined risk from the defended and undefended scenarios to capture the full risk from still water and wave overtopping.

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- 3.19 The Flood Map indicates 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 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.
- 3.20 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.
- 3.21 The flood map is intended to act as a guide to indicate the potential risk of flooding. When producing it the Environment Agency use the best available data 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.
- 3.22 Ideally all accommodation should be set above the breach level. However, if it is not practical to raise the ground floor that high then it may be acceptable to use flood resilient construction on the ground floor and provide safe refuge on the first floor. In either case a robust warning and evacuation plan should be specified as the property would be rendered inaccessible by the floodwater.
- 3.23 Information provided by the Environment Agency has been produced using a 2D TuFlow model. The floodplain has been represented as a grid and the flood water levels and/or depths have been calculated for each grid cell. The modelled flood levels/depths presented are for the closest most appropriate model grid
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cells. The Extreme Sea Levels used in the model have been derived from the 'Coastal flood boundary conditions for UK mainland and islands' (Defra;SEPA; The Scottish Government; Environment Agency 2011). The coastal flood boundary dataset was uplifted to a base year of 2018. The flood inundation model has not considered infiltration losses into the ground. Additionally, no surface water drainage systems or sewer networks are included in the model. All wave overtopping calculations assume a static beach profile. The 'Undefended' model scenarios are still water only and do not include any inflow boundaries for wave overtopping. The 0.5% AEP and 0.1% AEP climate change scenarios projected to 2070 and 2115 were modelled using National Planning Policy Framework (NPPF) guidance. The increases in sea level are shown in Frame 14 below. In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs in line with NPPF guidance.

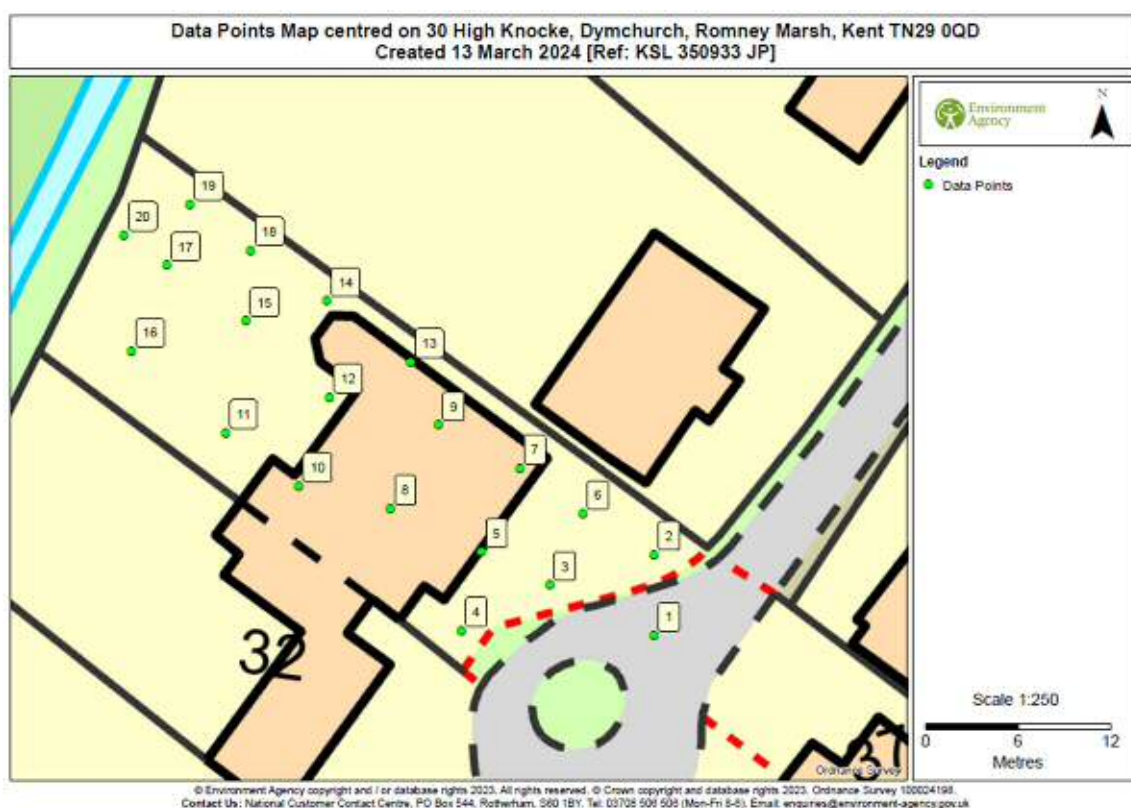
NPPF sea level rise (SLR) estimates, metres per year (2008 base year)

Guidance	SLR projected to 2070	SLR projected to 2115
NPPF	0.521	1.166

Frame 12 – Increases in Sea Level

- 3.24 On 19 Feb 2016, the '*Flood Risk Assessments: Climate change allowances*' were published on gov.uk. which replaced the previous guidance allowances for Planners. The data provided in the Product Data 4 details provided by the Environment Agency includes the new allowances which have now been considered in this FRA and factored in to demonstrate the development will be safe from flooding. The **fluvial climate change** factors are now more complex reflecting the fact that the latest information shows a single uplift percentage across England cannot be justified. The Environment Agency will incorporate these new allowances into future modelling studies.
- 3.25 A map showing the location of the points from where the data is taken is shown in Frame 13 below. All levels and depths taken are from the 'Romney Marsh Tidal Mapping Study' completed by JBA Consulting in 2020. Climate change (CC) data represents modelled levels with an allowance for sea level rise for the

years specified. In addition to sea level rise the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with 2016 NPPF guidance which has since been updated. A zero (0.00) figure indicates that the data point is outside of the flood extent for a particular return period at that location.



Frame 13– Modelled Data Points

3.26 The modelled undefended and defended tidal flood levels are shown in Frames 14 and 15 below. The modelled undefended and defended tidal flood depths are shown in Frames 16 and 17 below.

Point ID	National Grid Reference		Modelled Tidal Flood Levels for Annual Exceedance Probability (AEP) events shown (metres AOD)									
			Undefended									
	Eastings	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	4.42	4.58	4.68	4.72	4.82	4.98	5.27	5.42	5.90	6.05
2	609647	128585	4.41	4.58	4.67	4.72	4.82	4.98	5.27	5.42	5.90	6.05
3	609640	128583	4.40	4.57	4.67	4.71	4.81	4.97	5.26	5.41	5.89	6.04
4	609634	128580	4.40	4.57	4.68	4.71	4.81	4.97	5.26	5.41	5.89	6.04
5	609630	128585	4.40	4.56	4.66	4.71	4.81	4.96	5.25	5.41	5.89	6.04
6	609642	128588	4.41	4.57	4.67	4.71	4.81	4.97	5.26	5.42	5.89	6.04
7	609638	128591	4.40	4.56	4.66	4.70	4.81	4.96	5.25	5.41	5.88	6.04
8	609630	128588	4.39	4.55	4.65	4.70	4.80	4.95	5.25	5.41	5.88	6.04
9	609633	128593	4.39	4.55	4.65	4.70	4.80	4.96	5.25	5.41	5.88	6.04
10	609624	128589	4.39	4.55	4.65	4.69	4.80	4.95	5.25	5.40	5.88	6.03
11	609619	128593	4.38	4.54	4.64	4.69	4.79	4.94	5.24	5.40	5.87	6.03
12	609626	128595	4.38	4.55	4.64	4.69	4.79	4.95	5.24	5.40	5.87	6.03
13	609631	128597	4.39	4.55	4.65	4.69	4.80	4.95	5.25	5.40	5.88	6.03
14	609625	128601	4.38	4.54	4.64	4.69	4.79	4.95	5.24	5.40	5.87	6.03
15	609620	128600	4.38	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.03
16	609613	128598	4.37	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.02
17	609615	128604	4.37	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.02
18	609621	128605	4.38	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.03
19	609617	128608	4.37	4.53	4.63	4.68	4.78	4.94	5.23	5.39	5.87	6.02
20	609612	128606	4.37	4.53	4.63	4.68	4.79	4.94	5.23	5.39	5.87	6.02

Frame 14 – Modelled Undefended Flood Levels (metres AOD)

Point ID	National Grid Reference		Modelled Tidal Flood Levels for Annual Exceedance Probability (AEP) events shown (metres AOD)									
			Defended									
	Eastings	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	609647	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	609640	128583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	609634	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	609630	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	609642	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	609638	128591	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	609630	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	609633	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	609624	128589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	609619	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	609626	128595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	609631	128597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	609625	128601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	609620	128600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	609613	128598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	609615	128604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
18	609621	128605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	609617	128608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
20	609612	128606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52

Frame 15 – Modelled Defended Flood Levels (metres AOD)

From Frame 15 above it can be seen that in the 'Defended' scenario all node points are outside of the modelled flood events for the Tidal Flood Levels up to and including the 0.1% AEP + CC(2115). In the undefended scenario, which is not the case, flooding occurs in all events.

In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This in line with 2016 NPPF guidance which has since been updated.

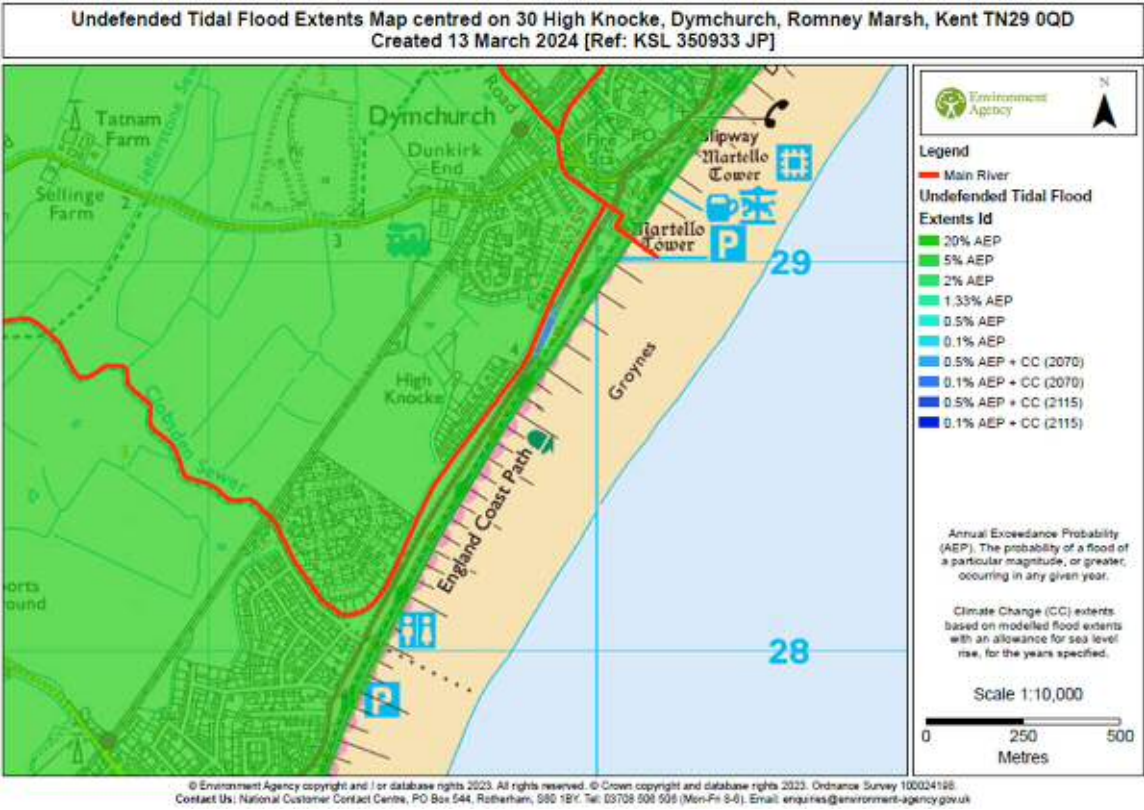
Point ID	National Grid Reference		Modelled Tidal Flood Depths for Annual Exceedance Probability (AEP) events shown (metres)									
			Undefended									
	Easting	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	1.75	1.91	2.01	2.06	2.16	2.31	2.61	2.76	3.23	3.39
2	609647	128585	1.73	1.89	1.99	2.03	2.13	2.29	2.58	2.73	3.21	3.38
3	609640	128583	1.76	1.92	2.02	2.06	2.17	2.32	2.62	2.77	3.24	3.40
4	609634	128580	1.80	1.96	2.06	2.10	2.21	2.36	2.66	2.81	3.28	3.44
5	609638	128585	1.76	1.92	2.02	2.07	2.17	2.32	2.62	2.77	3.25	3.40
6	609642	128588	1.71	1.88	1.97	2.02	2.12	2.28	2.57	2.72	3.20	3.35
7	609638	128591	1.70	1.86	1.96	2.00	2.11	2.26	2.56	2.71	3.19	3.34
8	609630	128588	1.69	1.85	1.95	2.00	2.10	2.26	2.55	2.70	3.18	3.34
9	609633	128593	1.66	1.82	1.92	1.97	2.07	2.23	2.52	2.68	3.15	3.31
10	609624	128589	1.64	1.80	1.90	1.95	2.05	2.20	2.50	2.65	3.13	3.28
11	609619	128593	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.23	3.39
12	609626	128596	1.80	1.96	1.86	1.91	2.01	2.17	2.46	2.62	3.09	3.25
13	609631	128597	1.85	1.81	1.91	1.95	2.06	2.21	2.51	2.66	3.14	3.29
14	609625	128601	1.89	1.85	1.96	2.00	2.10	2.26	2.56	2.71	3.19	3.34
15	609620	128600	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.24	3.39
16	609613	128598	1.85	2.01	2.11	2.15	2.26	2.41	2.71	2.86	3.34	3.50
17	609615	128604	1.81	1.98	2.08	2.12	2.23	2.38	2.68	2.83	3.31	3.46
18	609621	128605	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.24	3.39
19	609617	128608	1.86	2.02	2.12	2.17	2.27	2.43	2.72	2.88	3.36	3.51
20	609612	128606	2.03	2.19	2.29	2.34	2.44	2.60	2.90	3.05	3.53	3.68

Frame 16 – Modelled Undefended Flood Depth (metres AOD)

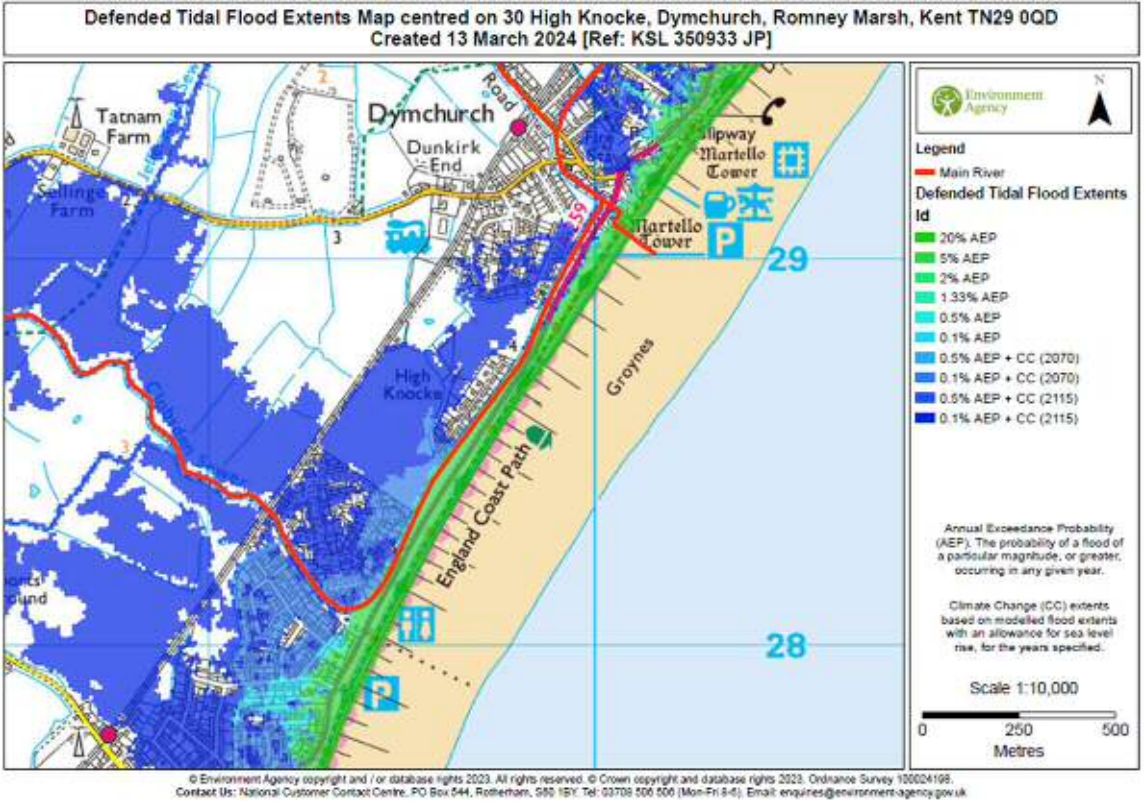
Point ID	National Grid Reference		Modelled Tidal Flood Depths for Annual Exceedance Probability (AEP) events shown (metres)									
			Defended									
	Easting	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	609647	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	609640	128583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	609634	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	609638	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	609642	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	609638	128591	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	609630	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	609633	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	609624	128589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	609619	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	609626	128596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	609631	128597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	609625	128601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	609620	128600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	609613	128598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	609615	128604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
18	609621	128605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	609617	128608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
20	609612	128606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19

Frame 17 – Modelled Defended Flood Depths (metres AOD)

From Frame 17 above it can be seen that in the 'Defended' scenario all node points are outside of the modelled flood events for the Tidal Flood Depths up to and including the 0.1% AEP + CC(2115). In the undefended scenario, which is not the case, flooding occurs in all events with depths ranging from 1.64m to 3.39m.



Frame 18 – Undefended Modelled Tidal Flood Extents Map



Frame 19 – Defended Modelled Tidal Flood Extents Map

- 3.27 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% AEP (1 in 20 year) at Lydd Ranges, to in excess of 0.5% (1 in 200 year) at Greatstone Dunes
- 3.28 As part of the Folkestone to Cliff End Strategy the Environment Agency have significant investment planned to improve the remaining sea defences on Romney Marsh to provide 0.5% AEP (1 in 200 year) standard of protection for a flood event occurring at any point along the coast by 2025.
- 3.29 St Mary's Bay – Sea defences between Jesson outfall and High Knocke Martello comprise of a sea wall which includes a concrete wave return and stepped revetment. Timber groynes act to retain sand on the frontage. The defences are designed to provide a 0.75% AEP (1 in 150 year) standard of protection for flooding from the sea in any given year. The scheme was completed in 1995 and is owned and maintained by the Environment Agency.
- 3.30 Dymchurch A – Sea defences between High Knoche and Martello Tower number 23 comprise of a sea wall which includes a concrete wave return and stepped revetment. Timber groynes act to retain sand on the frontage. The defences are designed to provide a 0.5% AEP (1 in 200 year) standard of protection for flooding from the sea in any given year. The scheme was completed in 2011 and is owned and maintained by the Environment Agency.
- 3.31 Dymchurch B – Sea defences between Martello Tower number 23 and Dymchurch redoubt comprise of a sea wall with rock armour revetment. The defences are designed to provide a 0.5% AEP (1 in 200 year) standard of protection for flooding from the sea in any given year. The scheme was completed in 2008 and is owned and maintained by the Environment Agency.
- 3.32 Hythe Ranges – Work was completed in March 2021 to improve the flood defences between the Dymchurch Redoubt and Fisherman's Beach. This involved refurbishing and raising timber groynes, placing a rock revetment

around the Redoubt and recharging the shingle beach. These improvements are designed to provide a 0.5% AEP (1 in 200 year) standard of protection for flooding from the sea in any given year. The defences are owned by the Ministry of Defence and maintained by the Environment Agency.

- 3.33 This site is within an area benefiting from flood defences as shown on the Flood Map extract above. 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 it were not there.
- 3.34 The Environment Agency do not hold records of historic flood events from rivers and the sea.. Flooding can occur from different sources such as 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 or 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.
- 3.35 No modelled Breach scenarios were provided by the Environment Agency within the Product Data 4 information pack.

4.0 NATIONAL PLANNING POLICY FRAMEWORK CONTEXT

- 4.1 Inspection of the Environment Agency Website identifies that this site lies within the outline extent of the Flood Zone 2 and 3 and benefit from existing flood defences. The mapping does not distinguish between high-risk areas and the functional floodplains, i.e. Flood Zones 3a and 3b.
- 4.2 The functional floodplain is defined by NPPF as land where water has to flow or be stored in times of flood during events that have a probability of occurrence of 1 in 20 (5%) or greater in any one year. The Practice Guide to NPPF goes on to further clarify this by adding the following definitions.
- (a) Areas which would naturally flood with an annual exceedance probability of 1 in 20 (5%) or greater, but which are prevented from doing so by existing infrastructure or solid buildings will not normally be defined as functional floodplain.
 - (b) Developed areas are also not generally considered to comprise functional floodplains, however, areas such as car parks that have been designed to provide flood storage and conveyance function may be.
 - (c) The functional floodplain may also include areas intended to provide transmission and storage of water from other sources of flooding (e.g. surface water).
- 4.3 Based on the information that has been provided by the Environment Agency and reference to the Folkestone & Hythe Council's Strategic Flood Risk Assessment, the site is located within the outline of 0.5% (Flood Zone 3) chance of flooding from the sea in any given year along with being in the outline of the 0.1% (Flood Zone 2) chance of flooding from the sea in any given year.

Flood defences reduce but do not completely remove the likelihood of flooding and can be over topped or fail in extreme weather conditions.

-
- 4.4 Inspection of the Folkestone & Hythe Council Strategic Flood Risk Assessment outlines the following details.
- 4.4.1 The SFRA is at the core of the NPPF (PPS25) approach. It provides essential information on flood risk, taking climate change into account, thereby allowing the LPA to understand risk across its district so that the Sequential Test can be properly applied. The need for LPAs to consider flood risk when preparing Local Development Documents (LDD) and to produce SFRAs is highlighted in paragraphs 12 and 25 of PPS25, now replaced by NPPF paragraphs 93 – 108 *‘Meeting the challenge of climate change, flooding and coastal change’*
- 4.4.2 **Flood Zones 1** – Low probability of flooding – This zone is assessed as having less than a 1 in 1000 annual probability of river or sea flooding in any one year. *If the site is less than 1 hectare then a site-specific FRA will only be required if it lies within an area defined by either the Critical Drainage Zone or the Overtopping Hazard Zone, or if it is identified by the Council as being a site with specific critical drainage problems or is located within 20m of a main river.*
- 4.4.3 **Flood Zone 2** – Medium probability of flooding – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding or between 1 in 200 and 1 in 1000 annual probability of sea flooding in any one year. *A site-specific FRA will be required, and this will need to be prepared in accordance with the requirements set out in PPS25, paragraphs 10 - 13 and annex E.*
- 4.4.4 **Flood Zone 3** – High probability of flooding - This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding or 1 in 200 or greater annual probability of sea flooding in any one year. *A site-specific FRA will be required, and this will need to be prepared in accordance with the requirements set out in PPS25, paragraphs 10 - 13 and annex E.*

Flooding from Surface Water Runoff and Overland Flow

- 4.4.5 Overland flooding typically occurs in natural valley bottoms as normally dry areas become covered in flowing water and in low spots where water may pond. This flooding mechanism can occur almost anywhere but is likely to be of particular concern in any topographical low spot, or where the pathway for runoff is restricted by terrain or man-made obstructions.
- 4.4.6 Parts of the District have a very steep topography and are heavily urbanised. In addition, in many places surface water is discharged into the streams that flow through these towns. These streams flow predominantly in culverts through these densely populated urban areas and historically these have become surcharged during extreme rainfall events. This has resulted in surface water flowing in streets, which has caused flooding to properties in the past.

Impact of Climate Change on the SFRA Study Area

- 4.4.7 The Environment Agency Flood Zone maps are based on current day sea levels and climate conditions; however, in order to gain an understanding of the impact of rising sea levels, the Flood Zone maps have been re-produced using the 2115 predicted extremes. These are included in Appendix 3 of this report and from these it can be seen that the impact on the extents of Zones 2 and 3 is significant.
- 4.5 There are generally three significant policies in relation to flood risk which are:-
- 4.5.1 All development will be controlled so as not to give rise to flooding or surface, groundwater or aquifer pollution. Surface water should be disposed of as close to source as possible or attenuated before discharge to a watercourse or surface water sewer. Surface water should not be allowed to enter the foul system.
- 4.5.2 Areas within Zones 2 and 3 at risk from fluvial flooding are identified on the Environment Agency Flood Map. Planning applications for development on sites of more than 1 hectare within these areas must be accompanied by a flood risk assessment appropriate to the scale of and nature of the development, the level of flood risk, and the protection afforded by the existing defences. Development

in undeveloped areas at risk from fluvial flooding will only be permitted in exceptional circumstance. In developed areas at risk from fluvial flooding, development will only be permitted where appropriate flood defence measures are taken, and it can be demonstrated that there is no increased risk of flooding to other sites.

- 4.5.3 Generally the Local Authority will, in consultation with the Environment Agency, ensure that new developments safeguard existing tidal and fluvial defences. Where works are being carried out in proximity to a tidal or fluvial flood defence the Council will seek to safeguard and where possible extend public access to the waterfront and protect and enhance existing ecological features, the existing flood defences and access to flood defence facilities for operational maintenance purposes.
- 4.6 Planning permission will be refused for residential development in areas at risk of fluvial or tidal flooding, as identified by the Environment Agency, unless it can be shown that the site is defended to an appropriate standard. Where a site is protected to an appropriate standard the development will be required to show appropriate measures to ensure the safety of the occupiers of the accommodation from flooding.
- 4.7 Generally, development will only be permitted where the District Planning Authority is satisfied that suitable sustainable urban drainage methods, or an alternative method as agreed with the drainage authority designed to mitigate any adverse effects of surface water run-off, are included as an integral part of the development and measures are proposed to ensure the future maintenance of such schemes.
- 4.8 The SFRA report quotes the predicted 1 in 200 year extreme sea level in 2115 as 5.7mAOD. However, it is generally not appropriate to use these open sea extremes to predict flood levels in locations that are protected by defences. Consequently, for all coastal flooding scenarios it is recommended that the outputs from the breach and wave overtopping modelling are used to define the design flood level at individual sites.

4.9 According to Table 2 of the Technical Guidance to NPPF (see Frame 20 below), the site usage should be considered to be a 'More Vulnerable', (buildings used for dwellings)

Essential Infrastructure	• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.
Highly Vulnerable	• Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent.¹⁹
More Vulnerable	• Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels. • Non-residential uses for health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste.²⁰ • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable	• Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in 'more vulnerable'; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment plants. • Sewage treatment plants (if adequate pollution control measures are in place).

Frame 20- Extract of NPPF Table 2 - Land Use Vulnerability

4.10 Reference to Frame 21 below, Table 3 of the Technical Guidance to NPPF, the 'More vulnerable' land use **does** require the **exception test** performing for Flood Zone 3.

Table D.3²²: Flood Risk Vulnerability and Flood Zone 'Compatibility'

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b 'Functional Floodplain'	Exception Test required	✓	✗	✗	✗

Frame 21 - Extract of NPPF Table3

Sequential Test

- 4.11 Local Planning Authorities (LPA) are encouraged to take a risk-based approach to proposals for developments in or affecting flood risk areas through the application of the Sequential Test and the objectives of this test are to steer new development away from high-risk areas towards those at lower risk of flooding. However, in some areas where developable land is in short supply there can be an overriding need to build in areas that are at risk of flooding. In such circumstances, the application of the Sequential Test is used to ensure that the lower risk sites are developed before the higher risk ones. The Sequential Test can be considered adequately demonstrated if both of the following criteria are met:

- The Sequential Test has already been carried out for the site (for the same development type) at the strategic level (Local Plan)
- The development vulnerability is appropriate to the Flood Zone

- 4.12 Based on the information that has been provided by the Environment Agency and determined by this assessment, the following functional floodplain test is applied.

Do predicted flood levels show that the site will be affected by an event having a return period of 1 in 20 years or less? **X**

Is the site defended by flood defence infrastructure that prevents flooding for events having a return period of 1 in 20 years or greater? **✓**

Does the site provide a flood storage or floodwater conveyance function? **X**

Does the site contain areas that are 'intended' to provide transmission and storage of water from other sources? **X**

Is site within the functional floodplain (Zone 3b). **No**

This development site is **NOT** located in a functioning floodplain.

- 4.13 NPPF states that the Local Planning Authority should apply the sequential approach as part of the identification of land for development in areas at risk from flooding. The objective of the sequential test is to ensure that lower risk sites are developed before sites in higher risk areas. When applying the test it is

extremely important to ensure that the subject site is only compared with sites that are available for development and are similar in size. This requires a comprehensive knowledge of development sites within the Folkestone & Hythe and is normally applied as part of the Local Development Framework process. However, when applying the test to sites that have not been assessed as part of the LDF it is often necessary to apply a site-specific test.

- 4.14 The second level of appraisal is through the application of the more detailed and refined flood risk information contained within the Strategic Flood Risk Assessments (SFRA). Such a document has been prepared for the Folkestone and Hythe District and this has been referenced to as part of this site-specific FRA.
- 4.15 The most detailed stage at which the sequential approach can be applied is at site-based level. Careful consideration can then be given to the sites topography and development uses can provide opportunities to locate more vulnerable buildings on higher parts of the site and allow less vulnerable items such as recreation areas or car parking to be placed in higher risk areas.
- 4.16 The proposed work is for an extension of an existing property and therefore **does not** require the **sequential test** performing.

Exception Test

4.17 By reference to Table 3 of the NPPF (Frame 21) an Exception Test is required. The remainder of this report will therefore assess and recommend appropriate flood mitigation measures and assess the flood risk to and arising from the proposed development in order to ensure the following objectives are met.

- Ascertain the impact of the proposed development on the flood risk in the surrounding area.
- Recommend appropriate flood mitigation measures in line with the recommendations of current best practice.
- Demonstrate that the development provides wider sustainability benefits to the community that outweigh flood risk.
- The development should be on developable, defined by PPS3 as a site that is in a suitable location for housing, or previously developed land.
- A Flood Risk Assessment must demonstrate that the development will be safe, without increasing flood risk elsewhere and where possible, will reduce flood risk overall.

5.0 ENVIRONMENTAL CONDITIONS

Topography

- 5.1 The site is an existing chalet bungalow set within a garden. The total site area is 600m² (0.06ha). Levels on the highway directly outside the property are identified as being 2.74mAOD. The entrance thresholds and floor level to the property are 3.00mAOD. The topography of the surrounding area is generally flat.

Flood Defences

- 5.2 The site is identified on the Environment Agency Flood Map as benefiting from Flood Defences. It should be noted that the flood map (flood zones) at this location have been derived using a generalised computer modelling study completed in 2020 (using JFLOW modelling techniques) and would not necessarily be aware of any localised walls or structures defending the site.

Historical Flooding

- 5.3 The Environment Agency do not hold historic flood information.

Flood Hazards

- 5.4 Technical Guidance to NPPF identifies six potential sources of flooding and requires that all potential sources that could affect the proposed development are considered;

- Flooding from rivers or fluvial flooding
- Flooding from the sea or tidal flooding
- Flooding from land
- Flooding from groundwater
- Flooding from sewers
- Flooding from reservoirs, canals, and other artificial sources

5.5 Flooding from rivers or fluvial flooding

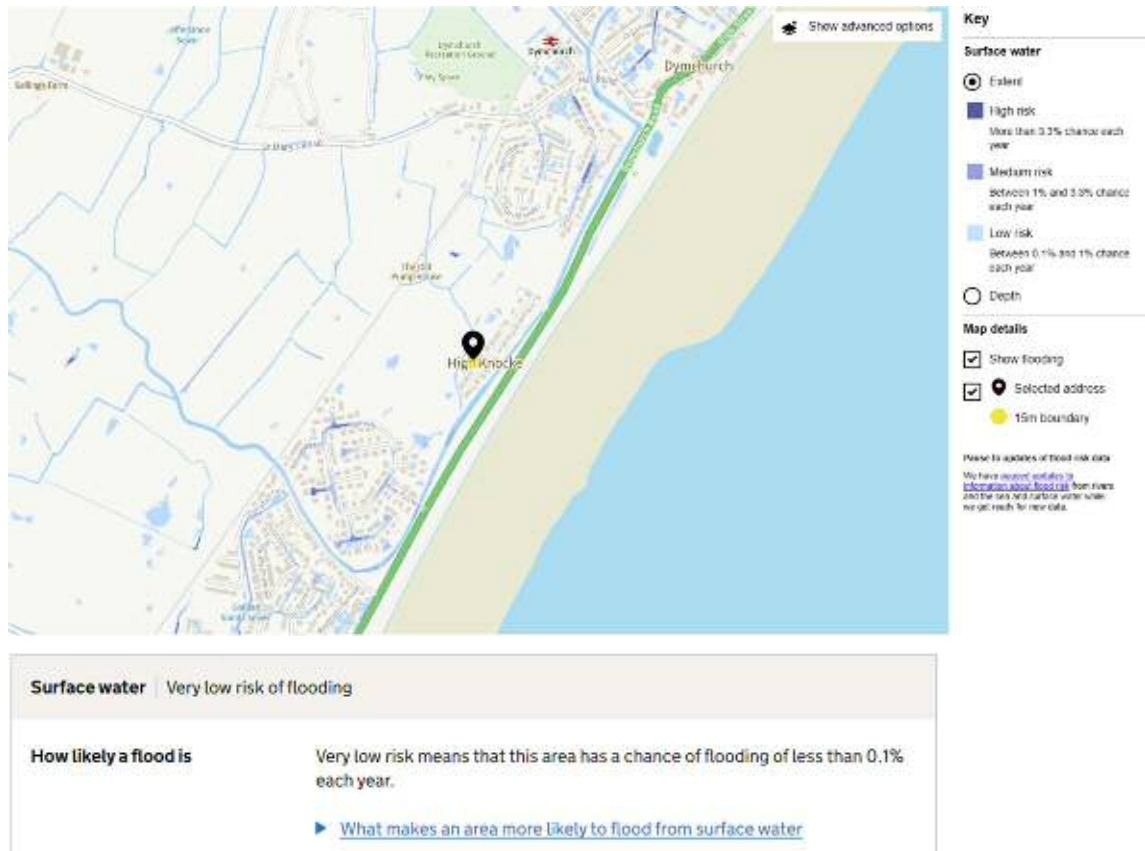
The site is identified to lie within Flood Zone 3 (High Probability): 1 in 100 annual probability of flooding from the sea. Data provided by the Environment Agency indicates that this site is not at risk of fluvial flooding.

5.6 Flooding from the sea or tidal flooding

The site is identified to lie within Flood Zone 3 (High Probability): 1 in 200 annual probability of flooding from the sea. Data provided by the Environment Agency indicates that this site is at risk of Tidal flooding as identified in the 'undefended' model. In the 'defended' scenario the site is identified to be protected up to and including the 0.1% AEP + CC(2115).

5.7 Flooding from land

During times of extreme rainfall results in surface water flows along the streets resulting in water collecting in this low-lying area. Under normal conditions this surface water is managed via the highway drains, however, under extreme conditions these may become overwhelmed and consequently water can pond in these areas. Reference to the Strategic Flood Risk Assessment does not identify the site to lie within area of 'local hotspots' of reported highway flooding. By reference to the Flood Map extract below in Frame 22 it can be seen that the site is outside of the extent of surface water flooding.



Frame 22 – Extent of flooding from surface water

5.8 Flooding from groundwater

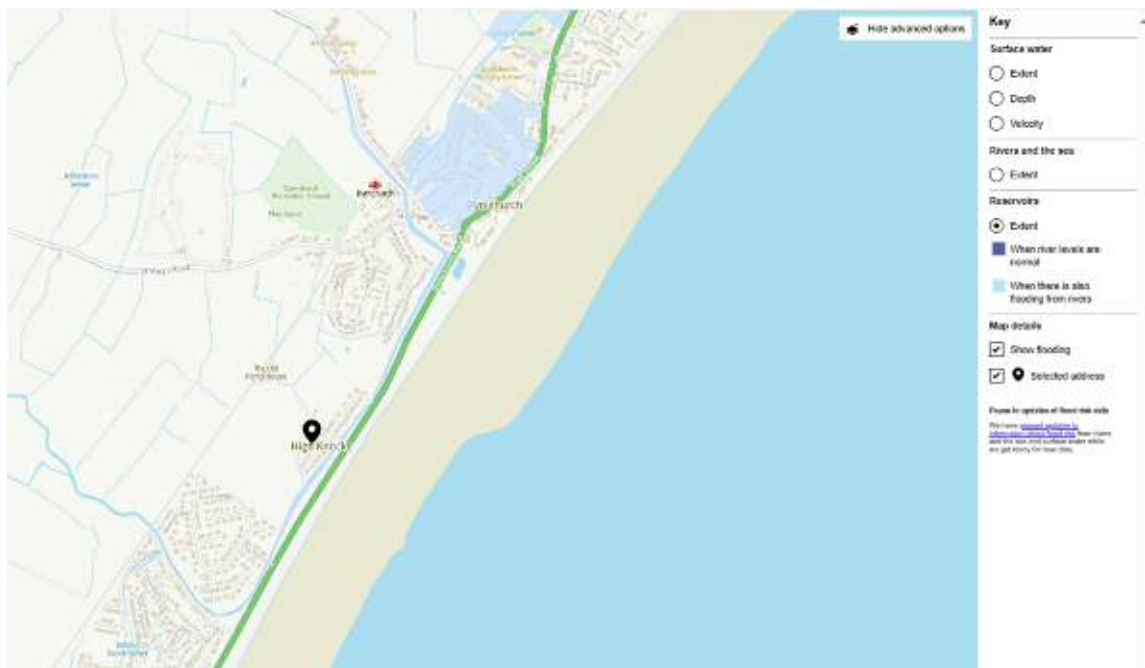
British Geology Surveys website, indicates that the site to be underlain with a Bedrock of **Wealden Group – Sandstone and siltstone** interbedded with superficial deposits of **Alluvium**. The site is not located within a Groundwater Source Protection Zone. Considering that the floor levels on the site will be set min 150mm higher than the external ground levels the risk from groundwater flooding will be low.

5.9 Flooding from sewers

The public sewer records identify that there are only public foul sewers in close proximity to this site. The risk of flooding from sewers is considered to be low.

5.10 Flooding from reservoirs, canals, and other artificial sources

By reference to the Flood Map extract below in Frame 23 it can be seen that the site is not within the maximum extent of flooding from reservoirs.



Frame 23 – Maximum extent of flooding from reservoirs

Risk and Controls

5.11 Considering the hazards identified above at the site, the following requiring consideration and/or mitigation measures;

- Flooding of any new property (Considered)
- Emergency egress through flood water (Considered)
- Displacement of flood water (Considered)
- Health & financial implications of flooding (Considered)
- Loss of mitigation measures during building lifetime (Considered)
- Flood Warning (Considered)

5.12 Flooding of new property

The ground floor levels will be set to match the existing properties floor levels a minimum 150mm above the finished external ground levels therefore any flood water will be able to flow around the property, so the risk of internal flooding is reduced. However, in an extreme event, the undefended scenarios predict flood depths significantly above the finished ground floor level. However, it should be noted that in the defended scenario NO flooding is identified up to and including the 0.1% AEP + CC(2115).

5.13 Emergency egress through flood water

The site is not in close proximity to land above the 1% AEP level so therefore a dry escape route is not available therefore the need for any specialist rescue by the Emergency Services or the need for wading through flood-water can not be avoided. The proposed development is for a ground floor extension to an existing chalet bungalow together with the conversion of the garage. There will be safe refuge provided at the first-floor level (5.60mAOD) which is above all predicted extreme levels up to 0.1%AEP + CC(2070) in the undefended scenario.

5.14 Displacement of flood water

As the proposed development increases the impermeable footprint by 9m² there will be minor reduction in the potential capacity of the storage zone although this is considered negligible.

5.15 Health & Financial Implications

The construction work will utilise flood resilient construction methods.

5.16 Loss of mitigation measures during the lifetime of the property

A copy of this report should be included with the 'New Home Owners Handbook' and any potential user made aware of the mitigation measures included on the site and the long-term maintenance requirement.

5.17 Flood Warning

Whilst the probability of an event of sufficient magnitude to cause floodwaters to reach the levels discussed in this report is low, the risk of such an occurrence is always present. With the sophisticated techniques now employed by the Environment Agency to predict the onset of flood events the opportunity now exists for all residents/occupants within the flood risk area to receive flood warnings. This forewarning could be sufficient to either allow occupants to evacuate the area or prepare themselves and the property for a flood event. It is therefore recommended that the Environment Agency's Floodline Service is contacted to find out if it is possible to register for Floodline Warnings Direct, which is a free service that provides flood warnings direct by telephone, mobile, fax or pager.

Off Site Impact

- 5.18 There is no increased risk associated with this development and there should be no impact on any neighbouring properties. There is a minor increase in displaced flood water generated by this development site although considered negligible.

Residual Risk

- 5.19 With the introduction of the controls discussed, the potential for harm to life or damage to property for this site is considered to be very low level.

6.0 SURFACE WATER DRAINAGE

Existing Discharge

6.1 The existing site characteristics are summarised as below;

Total Site Area	0.06 hectares (100m ²)
Current Site Condition	Developed ~ 'Brownfield'
Existing Impermeable Area	175m ²
Proposed Impermeable Area	184m ² Pavilion
Existing Surface Water	Infiltrates within the site/ to watercourse
Discharge Method	As existing.

Proposed Discharge

6.2 The requirement of NPPF is that the surface water run-off from the development proposals replicates the natural drainage characteristics of the pre-developed site. The intention for surface water disposal from the extended property will be to remain as existing. There will be a minor increase in the footprint of the property post-development and surface water runoff will discharge within the site via infiltration techniques such as a soakaway or to the adjacent watercourse. There will be no increase in surface water runoff from this site.

7.0 SUSTAINABILITY APPRAISAL

7.1 Schedule 2(6) of the SEA Regulations require the Environmental Report to consider:

The likely significant effects on the environment, including short, medium and long term effects, permanent and temporary effects, positive and negative effects and secondary, cumulative and synergistic effects, on issues such as (a) biodiversity, (b) population, (c) human health, (d) fauna, (e) flora, (f) soil, (g) water, (h) air, (i) climatic factors, (j) material assets, (k) cultural heritage including architectural and archaeological heritage, (l) landscape and (m) the inter-relationship between the issues referred to in sub-paragraphs (a)–(l).

7.2 A sustainability appraisal has been undertaken to satisfactorily address the criterion of the exception test.

7.3 As evidenced below, the site scores positively against the aims and objections of the sustainability appraisal, demonstrating that there are wider sustainability benefits from the proposal that outweighs the residual flood risk

7.4 The use of colour coding in the matrices allows for likely significant effects (both positive and negative) to be easily identified, as shown in the key below in Frame 24. Mixed effects are recorded for an SA objective where there is potential for both positive and negative effects.

Key to symbols of effects used in the SA of the Shepway PPLP

++	Significant positive effect likely
+	Minor positive effect likely
0	Negligible effect likely
-	Minor negative effect likely
--	Significant negative effect likely
+/-	Mixed effect likely
?	Likely effect uncertain

Frame 24 – Sustainability Appraisal Key

SA Objective Reference	SA Objective	Appraisal questions
SA1	Reduce the risk of flooding, taking into account the effects of climate change.	Development which supports and corresponds with the Water Framework Directive, the NPPF, Technical Guidance to the NPPF and the flood risk management policies of the EA? Development which has regard to the Shepway Strategic Flood Risk Assessment? Development which incorporates SuDS (including their long-term maintenance) to reduce the rate of run-off and reduce the risk of surface water flooding and combined sewer overflows?

The site lies within Flood Zones 2 and 3 and is identified in the Districts SFRA(2015) as at risk of coastal flooding. However, the proposal is supported by an FRA which demonstrates that the risks can be mitigated and safely managed.

Reference to Table 3 of the Technical Guidance to NPPF, the 'More vulnerable' land use is subject to the exception test.

It is proposed that the following flood resilient measures are introduced:

The finished floor level of the extension is set no lower than the existing property and will be a minimum 150mm above the external ground level.

Construction will utilise flood resilient materials.

Services will be located at high level in accordance with the EA guidance documents included in Appendix B of this report.

Therefore, there will be + a minor positive effect likely on this objective.

SA2	Increase energy efficiency in the built environment, the proportion of energy use from renewable sources and resilience to a changing climate and extreme weather.	Developments that are energy efficient in their design and construction and which provide opportunities for combined heat and power? Greater consideration of climate change adaptation within planning and design? An increase in the number of large scale renewable energy schemes an increase in the local/on-site renewable energy generating capacity? A decrease in oil consumption? Opportunity for modal shift away from private motor vehicles? Support for managing the natural environment in a way that recognises its potential to deliver climate change adaptation services.
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The location of the site will not impact on the level of energy consumption and the potential for renewable energy use.

Sustainable construction methods will be used in the development of the Pavilion, including:

The new extension will be more efficient than the existing building.

The site is therefore considered to have **(+)** a minor positive effect on this objective.

SA Objective Reference	SA Objective	Appraisal questions
SA3	Promote community vibrancy, provide opportunities to access services, facilities, and environmental assets for all and avoid creating inequalities of opportunity for access.	Well-designed, compact communities which are of a sufficient critical mass or density to support local services and public transport provision? Opportunities to improve educational attainment, qualification levels and participation in education and training through access to existing or the provision of new educational infrastructure in relation to new residential developments? Provision of new or enhancement of existing leisure facilities for young people at the neighbourhood level, where thresholds/standards require these? Opportunities to lead healthier lifestyles, including development that enhances existing and /or makes provision for and maintenance towards sports and recreational facilities e.g. publicly available pitches, allotments, swimming pools, courts, etc.? Adequate provision of health services to support new communities through the enhancement of existing facilities or through the creation of new? Developments, especially in deprived communities, which reduce car dependence by ensuring employment opportunities, health services, educational facilities, shops and recreational opportunities are accessible by foot, cycle or public transport? Improvements to local public transport infrastructure, especially in deprived communities? Reintegration of physically divided or highly linear villages or neighbourhoods through, for example, provision of central social infrastructure?

The site is an excellent location for easy access to the beach, open countryside and the main town shopping area. There is easy access to the local bus route and local towns. The site is adjacent to the main road network affording easy access to Dymchurch, Hythe, New Romney, Folkestone and more.

The site is therefore considered to have **(0)** a negligible effect on this objective.

SA4	Reduce crime and the fear of crime.	Reduced levels of crime, anti-social behaviour and the fear of crime through design i.e. improvements to the environment, street layout, public space provision, passive surveillance, lighting etc.?
-----	-------------------------------------	---

The following design factors of the site seek to reduce crime and fear of crime.

The site is located adjacent to the public highway which is well lit and will have a well-defined entrance with good lighting provided along the access route to the property for convenient movement without compromising security. The property can be fitted with surveillance cameras and door entry devices for monitoring when not at the property.

The site is therefore considered to have **(+)** a minor positive effect on this objective.

SA Objective Reference	SA Objective	Appraisal questions
SA5	Improve the provision of homes, including affordable housing, having regard to the needs of all sections of society, including the elderly.	Sufficient amounts of housing to meet the needs of the community and local economy? Development which delivers an appropriate mix of housing, including affordable housing and dwellings for older people?

The development site is an extension to an existing property.

The site is therefore considered to have **(0)** a negligible effect on this objective.

SA6	Support the creation of high quality and diverse employment opportunities.	An adequate supply of land, <u>skills</u> and infrastructure (such as ICT) to meet the requirements of sectors targeted for economic growth and diversification, including those set out in the Shepway Economic Strategy? Improved access to jobs for local people from all sectors of the community? Enhanced vitality and vibrancy of town <u>center's</u> ? Expansion or upgrading of key visitor attractions? Employment opportunities which address the economic consequences of the de-commissioning of Dungeness nuclear power station? Provision of high-quality employment sites and associated infrastructure suitable for the likely continuation in a shift from manufacturing to higher skill, service industries.
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The development site is an extension to an existing property which will provide opportunities for working from home which in turn provides the basis for creation of employment opportunities.

The site is therefore considered to have **(0)** a negligible effect on this objective.

SA7	Conserve and enhance the fabric and setting of historic assets.	Development that avoids negative effects on listed buildings, conservation areas, scheduled ancient monuments, registered historic parks and gardens, and registered battlefields and their settings)? Development that is well related to the natural environment and characteristic scale, form materials and detailing of the settlement and contributes to a sense of place? Promotes the enhancement of the archaeological resource and other aspects of heritage, such as, parks and open spaces, and areas with a particular historical or cultural association? Opportunities for the enhancement of historic assets, townscapes, and landscapes?
-----	---	--

There are heritage assets such as the Martello Tower, High Street, Arcade, Public houses etc that sit in close proximity to this site which will not be impacted

upon by this development. It is also anticipated that there will be no impact on Archaeology at this location.

The site is therefore considered to have (0) a negligible effect on this objective.

SAS	Conserve, and where relevant enhance, the quality, character and local distinctiveness of the landscape and townscape.	Areas of the highest landscape sensitivity being provided with the highest level of policy protection? Development which considers the existing character, form and pattern of the landscape, buildings, and settlements? The protection and enhancement of local distinctiveness and contribution to a sense of place? The provision of and maintenance towards green infrastructure assets and networks (including green open space and river/canal corridors) and ensure that this is linked into new and existing developments, to improve the connectivity of green spaces and green networks?
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The development site is an extension to an existing property and will therefore protect an existing asset and be a major improvement/enhancement.

Therefore, there will be (++) a significant positive effect likely on this objective.

SAS	Conserve and enhance biodiversity, taking into account the effects of climate change.	Avoidance of net loss, damage to, or fragmentation of designated and non-designated wildlife sites and habitats? Opportunities to enhance habitats for protected species and priority species identified in the Kent BAP or the England Biodiversity Strategy 2020? Opportunities for people to come into contact with robust wildlife places whilst encouraging respect for and raising awareness of the sensitivity of these sites? Development which includes the integration of ecological conditions and contributes to improvement in ecological connectivity in rural and urban areas? The maintenance and enhancement of the four large scale ecological networks in the district? N.B. Climate change is likely to impact upon habitats and thereby biodiversity. Plan policies which achieve the goals listed above should all help to enhance the ability of wildlife to adapt to a changing climate.
-----	---	--

The site does not contain or lie in a ecological designation, however, it will afford opportunities for people to come in contact with nature.

The site is therefore considered to have (+) a minor positive effect on this objective.

SA10	Reduce the need to travel; increase opportunities to choose sustainable transport modes and avoid development that will result in significant traffic congestion.	A complementary mix of land uses within compact communities that minimises the length of journeys to services and employment, increases the proportion of journeys made on foot or by cycle, and are of a sufficient density to support local services and public transport provision? Development in locations well served by public transport, cycle paths and walking routes? Support for the objectives of the Shepway Cycling Plan?
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The development site is an extension to an existing property. There is a bus service in close proximity to the site which will provide easy access together with a good road network for access via car or cycles .

The site is therefore considered to have (0) a negligible effect on this objective.

SA11	Use land efficiently and safeguard soils, geology, and economic mineral reserves.	
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The development site is an extension to an existing property. The development avoids the use of high quality agricultural land, remediation of contaminated sites and protects soil processes and functions .The site is a reuse of existing land 'Brownfield'. This is not a mineral safeguarding area.

The site is therefore considered to have (+) a minor positive effect on this objective.

SA12	Maintain and improve the quality of groundwater, surface waters and coastal waters and the hydromorphological (physical) quality of rivers and coastal waters.	Development that will not lead to the deterioration of: the quality of groundwater, surface waters or coastal waters; the physical quality of rivers and coastal waters; Water Framework Directive status? Development where adequate foul drainage, sewage treatment facilities and surface water drainage are available? Development which incorporates SuDS (including their long-term maintenance) to reduce the risk of combined sewer overflows and to trap and break down pollutants?
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The site is within the parish of Dymchurch which is not considered to have a wastewater capacity issue. The site does not fall within a Groundwater Protection Zone.

The site is therefore considered to have (0) a negligible effect on this objective.

SA13	Use water resources efficiently.	Development where adequate water supply is available? Water efficient design and reduction in water consumption (e.g. rainwater recycling/grey water reuse and BREEAM/ EcoHomes Excellent Standard)?
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There is adequate water supply available at the site.

The site is therefore considered to have **(0)** a negligible effect on this objective.

SA14	Protect and enhance green infrastructure and ensure that it meets local needs.	The provision and maintenance of green infrastructure assets and networks (including green open space and river/canal corridors) and ensure that this is linked into new and existing developments, to improve the connectivity of green spaces and green networks? N.B. The East Kent Green Infrastructure (GI) Working Group has identified an East Kent GI Typology which encompasses the following GI types:- Biodiversity e.g. Natura 2000 sites, SSSIs, LNRs, Local Wildlife Sites Civic Amenity e.g. parks, allotments, cemeteries Linear features e.g. the Royal Military Canal, railway corridors. The full list of GI components of this typology is available from the Shepway GI Report, 2011.
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This is an extension to an existing property and will therefore protect and enhance the green infrastructure.

Therefore, there will be **(++)** a significant positive effect likely on this objective.

7.5 The summary of effects to support wider benefits is shown below.

+++	2·No·of·Significant·positive·effect·likely
++	5·No·of·Minor·positive·effect·likely
0	7·No·of·Negligible·effect·likely
-	0·No·of·Minor·negative·effect·likely
---	0·No·of·Significant·negative·effect·likely
+/-	0·No·of·Mixed·effect·likely
?	0·No·of·Likely·effect·uncertain

Frame 25 – Summary of effects

8.0 LOCAL PLANNING HISTORY

8.1 Planning Reference Y21/0173/FH Erection of a detached dwelling on land adjacent to 34 St Mary's Road, Dymchurch TN29 0PN.

Approved with conditions 10/03/2021- The FRA report submitted made the following conclusions and recommendations:

- **The ground floor should be raised 300mm above the design flood level. Sleeping accommodation should be 600mm above the flood level.** Inspection of the scheme drawings shows the ground floor will be elevated to a level of 2.99m AODN, and sleeping accommodation is further raised, i.e. located on the first floor of the dwelling at a level of 5.59m AODN. The finished floor level requirements have therefore been achieved.
- **The ground floor of the dwelling should be constructed using flood resilient design techniques.** The ground floor of the building is proposed to be raised above the design flood level, however, the ground floor should be constructed using flood resilient materials to ensure that the structure can withstand the impacts of floodwater in the unlikely event of a breach.
- **The residents of the dwelling should sign up to the EA's Flood Warning Service.** The EA's flood warnings will provide forewarning of extreme weather conditions which may result in flooding and enable the residents to evacuate the building to an area outside the predicted extent of flooding.
- **The opportunity to include SuDS within the scheme design should be explored, where possible.** There are a number of SuDS which are potentially suitable to include within the development. SuDS should be considered for inclusion within the scheme design where possible, in order to manage the rate at which surface water runoff is discharged from the site and to ensure there is no increase in flooding offsite as a result of the proposed dwelling.

8.2 Planning Reference Y19/1415/FH Erection of a residential dwelling on land adjoining 20 St Mary's Road, Dymchurch TN29 0PN.

Approved with conditions 18/05/2021- The FRA report submitted made the following conclusions and recommendations:

- **Finished floor levels of the dwelling are to be raised above the design flood level.** The ground floor of the dwelling is to be located above 3.02m AODN, with the first floor a further 300mm higher at a minimum level of 3.32m AODN. The dwelling will therefore be located above the design flood level of 2.72m AODN.
- **Flood Resistance and Resilience measures are recommended to be included within the design.** By fitting these measures, the resilience of the building will be increased to reduce the impact of flooding on the dwelling in the event of an exceedance event.
- **The residents of the dwelling should sign up to the EA's 'Early Warning Service'.** The residents of the dwelling will receive warning of extreme storm conditions, which have the potential to result in a breach in the defences. This will provide residents with time to prepare themselves and the building for a flood event.
- **The opportunity to include Sustainable Drainage Systems within the scheme design should be explored, where possible.** The development will increase the impermeable area on site and therefore, SuDS should be incorporated in to the development where possible, to minimise any increased risk of flooding offsite.

9.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions of the Flood Risk Assessment for the proposed extension and conversion of garage, re-build of rear garden room at 30 High Knocke, Dymchurch, Romney Marsh TN29 0QD are as follows. It is noted that the existing property is currently laid out as a chalet bungalow with sleeping accommodation provided on the ground floor level.

- 9.1 The Flood Map at this location has been derived using detailed tidal modelling of the Romney Marsh, completed by JBA Consulting in 2020. The Flood Zones produced by this model are made up of the combined risk from the defended and undefended scenarios to capture the full risk from still water and wave overtopping. The site is shown to lie within the extent of the Flood Zones 2 and 3, although benefiting from existing flood defences. The site is identified as being at risk of tidal flooding.
- 9.2 The development proposal is considered to be for 'More vulnerable' use. The footprint of the building envelope will increase from 175m² to 184m² and therefore reduce the potential storage for displaced water during an extreme event although this is considered to be insignificant.
- 9.3 There will be an increase in surface water runoff generated by this development which will be contained and infiltrated within the site via suitable SUD's solution.
- 9.4 Reference to Table 3 of the Technical Guidance to NPPF, 'More vulnerable' land use does require the exception test performing for Flood Zone 3 development sites. This assessment demonstrates that by introducing the recommendations made in this report the development will be safe, without increasing flood risk elsewhere.
- 9.5 The proposals are for an extension to an existing property and therefore a sequential test does not require performing.
- 9.6 In the 'Defended' scenario all tidal flood levels up to and including up to and including the 0.1% AEP + CC(2115) are outside of the modelled flood events.

-
- 9.7 In the 'Undefended' scenario no properties at this location will be above the predicted 0.1% AEP + CC(2115) extreme level so neither safe refuge nor a route to ground above the 0.1% level can be provided. This is typical for the New Romney area so should an event of this magnitude occur then significant areas would be inundated requiring specialist rescue by the Emergency Services.
- 9.8 A safe refuge area is provided at the first-floor level (5.60mAOD) which is above all predicted extreme levels up to 0.1%AEP + CC(2070) in the undefended scenario.
- 9.9 The risks have been considered for the flooding hazards associated with site, with the following mitigation measures required.
- 9.10 A copy of this report should be included with the 'New Homeowners Handbook' and all users of the property are to be made aware of the mitigation measures included on the site and the long-term maintenance requirement.
- 9.11 The owners/users of the property are to be encouraged to register for 'Floodline' Warnings Direct.
- 9.12 This report should be issued to the Environment Agency via the planning process and confirmation obtained that the mitigation measures including all finished floor levels are acceptable to minimise the risk to life and damage to the development and that drainage conditions are not worsened elsewhere as a result of this development.
- 9.13 The risks have been considered for the flooding hazards associated with site, with the following mitigation measures required in accordance with CLG2007.
- (a) The ground floor level of the new and refurbished property is to be set no lower than the existing ground floor level. The current ground floor level is 150mm above the external ground level. It is intended that all entrances to the property will have good quality doors installed that will provide protection in a flood event. A further recommendation is to install flood

guards (barriers) over each access point to the height of the existing window cills.

- (b) *Floors* – The ground floor of the extension is recommended to be of solid construction which provides an effective seal against water rising up through the floor. The new pavilion ground floor will have a solid floor constructed. Solid concrete floors generally suffer less damage than suspended floors and are less expensive and faster to restore following exposure to floodwater.
 - (c) *Walls* – new walls should be constructed in blockwork at ground floor level. The use of stud walls and plasterboard on the ground floor of the development should be avoided wherever possible as these absorb water and generally need to be removed and rebuilt after a flood event.
 - (d) All external doors are to be of good quality and fitted with suitable seals to limit ingress of water should an extreme flood event occur.
 - (e) There should be no openings such as air bricks below the predicted extreme level to avoid ingress of water should an extreme event occur.
 - (f) *Services* - Boilers should be mounted on a wall above the level that floodwater is likely to reach. Electricity sockets should be located at least one metre above floor (or well above likely flood level) with distribution cables dropping from an upper level. Service meters should also be at least one metre above floor level (or well above likely flood level) and placed in plastic housings.
- Tridax Limited considers that with the inclusion of the above, the site is sustainable in terms of flood risk and that the proposals do not increase the risk to the neighbouring properties.

APPENDIX A

Drawings

522-AA-100

THIS DRAWING HAS BEEN PRODUCED FOR PLANNING PURPOSES
ANY DISCREPANCIES, ERRORS OR OMISSIONS ARE TO BE
REPORTED TO THE AGENT IMMEDIATELY.

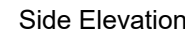
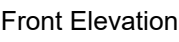
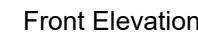
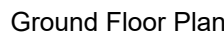
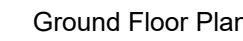
ONLY VISIBLE AND ACCESSIBLE ELEMENTS OF THE EXISTING
STRUCTURE HAVE BEEN SURVEYED.

DRAWING INDICATES GENERAL ARRANGEMENT OF THE SCHEME
AND IS NOT TO BE USED AS A CONSTRUCTIONAL / WORKING /
SHOP DRAWING IN ANY SUCH WAY.

ALL MATERIALS, COMPONENTS AND WORKMANSHIP ARE TO BE
IN ACCORDANCE WITH THE RELEVANT STANDARDS, CODES OF
PRACTICE AND APPROPRIATE MANUFACTURERS'
RECOMMENDATIONS. FOR SPECIALIST WORK SEE SUPPLEMENTARY
DRAWINGS WHERE SUBMITTED.

COMPUTER GENERATED IMAGES (CGI) THE PURPOSE OF ANY
ILLUSTRATIVE IMAGE SHOWN IS TO INDICATE MASSING AND
GENERAL DIFFERENCES. THEREFORE IT IS NOT REPRESENTATIVE
OF ANY EXACT FINAL DETAILING UNLESS OTHERWISE STATED. CGI
IMAGES ARE © COPYRIGHT DEL RENZIO & DEL RENZIO LTD.

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER
DRAWINGS & DOCUMENTS SUBMITTED WITH THIS APPLICATION.



01 Scale: 1:100 @ A1

02 Scale: 1:100 @ A1



APPENDIX B

Product Data 4

Flood Prevention Diagram

Product 4 (Detailed Flood Risk) for: 30 High Knocke, Dymchurch, Romney Marsh, Kent TN29 0QD

Requested by: Steve Carr

Reference: KSL 350933 JP

Date: 13 March 2024

Contents

- Flood Map Confirmation
- Flood Map Extract
- Model Output Data
- Data Point Location Map
- Modelled Flood Outlines Map
- Defence Details
- Historic Flood Data
- Historic Flood Map
- 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.

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.

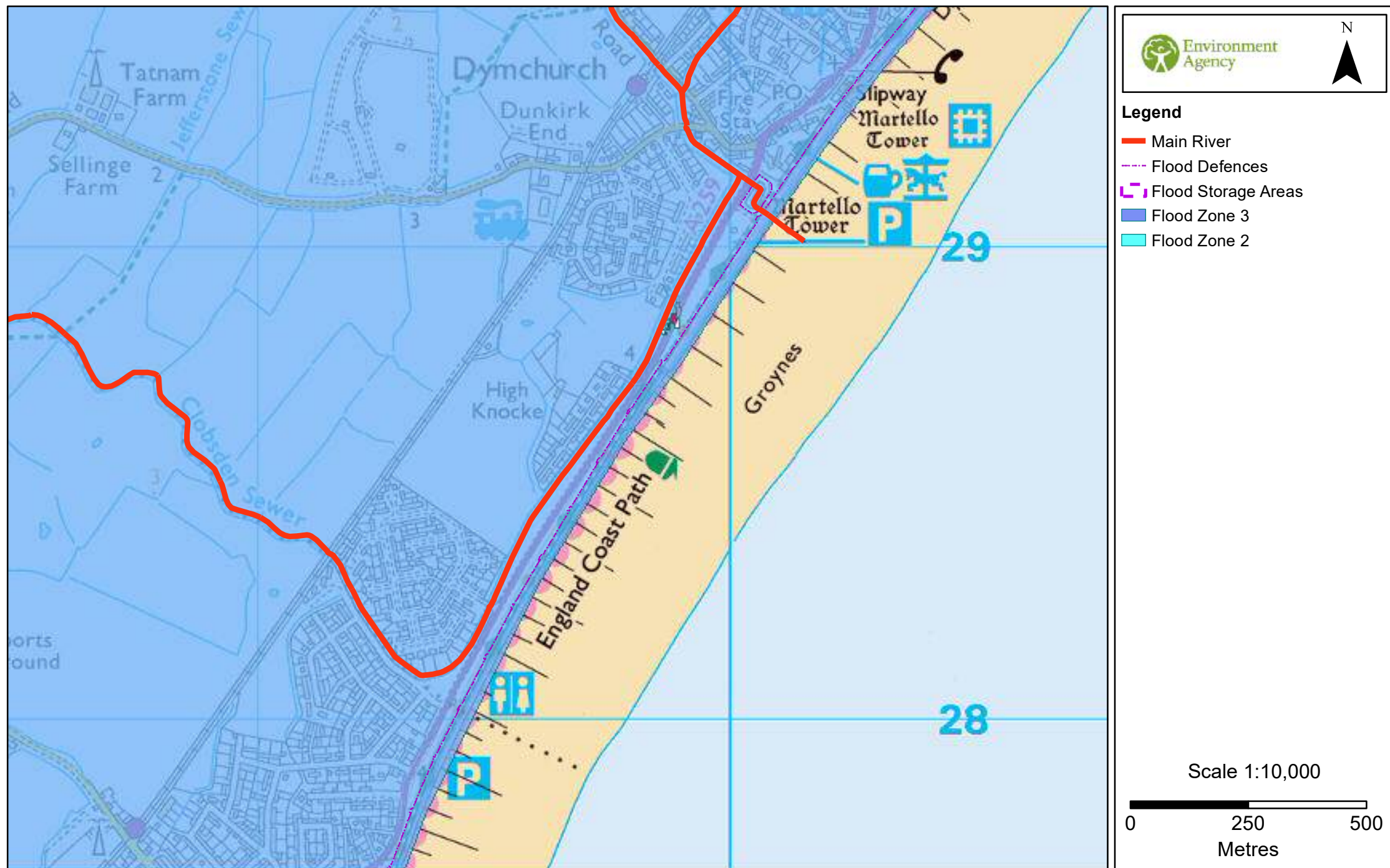
The Flood Map also shows that this site lies within the outline of the 0.1 % (Flood Zone 2) chance of flooding from the sea in any given year.

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 2020. The defended and undefended modelled outputs have been combined to produce the Flood Zones in order to capture the full flood risk from still water and wave overtopping.

Flood Map centred on 30 High Knocke, Dymchurch, Romney Marsh, Kent TN29 0QD
Created 13 March 2024 [Ref: KSL 350933 JP]



Model Output Data

You have requested flood levels and 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 any specific 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.

Romney Marsh baseline tidal mapping and data

Coastal flood boundary data set

The extreme sea levels used in the model were derived from the 'Coastal flood boundary conditions for UK mainland and islands' (*Defra; SEPA; The Scottish Government; Environment Agency, 2011*). The coastal flood boundary dataset was uplifted to a base year of 2018.

Model limitations

The flood inundation model has not considered infiltration losses into the ground. Additionally, no surface water drainage systems or sewer networks are included in the model. All wave overtopping calculations assume a static beach profile.

Undefended outputs

The undefended model scenarios are still water only and did not include any inflow boundaries for wave overtopping.

Climate change

The 0.5% AEP and 0.1% AEP climate change scenarios projected to 2070 and 2115 were modelled using National Planning Policy Framework (NPPF) 2016 guidance. The increases in sea level are shown in the table below.

NPPF sea level rise (SLR) estimates, metres per year (2008 base year)

Guidance	SLR projected to 2070	SLR projected to 2115
NPPF	0.521	1.166

In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with NPPF 2016 guidance. Please note climate change allowances have been updated since this model was produced. Please refer to the following website for the latest guidance: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>.

Data Points Map centred on 30 High Knocke, Dymchurch, Romney Marsh, Kent TN29 0QD
Created 13 March 2024 [Ref: KSL 350933 JP]



Legend

● Data Points

Scale 1:250

0 6 12
Metres

Table 1: Modelled undefended 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									
	Easting	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	4.42	4.58	4.68	4.72	4.82	4.98	5.27	5.42	5.90	6.05
2	609647	128585	4.41	4.58	4.67	4.72	4.82	4.98	5.27	5.42	5.90	6.05
3	609640	128583	4.40	4.57	4.67	4.71	4.81	4.97	5.26	5.41	5.89	6.04
4	609634	128580	4.40	4.57	4.66	4.71	4.81	4.97	5.26	5.41	5.89	6.04
5	609636	128585	4.40	4.56	4.66	4.71	4.81	4.96	5.26	5.41	5.89	6.04
6	609642	128588	4.41	4.57	4.67	4.71	4.81	4.97	5.26	5.42	5.89	6.04
7	609638	128591	4.40	4.56	4.66	4.70	4.81	4.96	5.25	5.41	5.88	6.04
8	609630	128588	4.39	4.55	4.65	4.70	4.80	4.96	5.25	5.41	5.88	6.04
9	609633	128593	4.39	4.55	4.65	4.70	4.80	4.96	5.25	5.41	5.88	6.04
10	609624	128589	4.39	4.55	4.65	4.69	4.80	4.95	5.25	5.40	5.88	6.03
11	609619	128593	4.38	4.54	4.64	4.69	4.79	4.94	5.24	5.40	5.87	6.03
12	609626	128595	4.38	4.55	4.64	4.69	4.79	4.95	5.24	5.40	5.87	6.03
13	609631	128597	4.39	4.55	4.65	4.69	4.80	4.95	5.25	5.40	5.88	6.03
14	609625	128601	4.38	4.54	4.64	4.69	4.79	4.95	5.24	5.40	5.87	6.03
15	609620	128600	4.38	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.03
16	609613	128598	4.37	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.02
17	609615	128604	4.37	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.02
18	609621	128605	4.38	4.54	4.64	4.68	4.79	4.94	5.24	5.39	5.87	6.03
19	609617	128608	4.37	4.53	4.63	4.68	4.78	4.94	5.23	5.39	5.87	6.02
20	609612	128606	4.37	4.53	4.63	4.68	4.78	4.94	5.23	5.39	5.87	6.02

Data taken from the Romney Marsh Tidal Mapping Study, completed by JBA Consulting in 2020.

Climate change (CC) data represents modelled levels with an allowance for sea level rise for the years specified. In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with 2016 NPPF guidance which has since been updated.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

See Model Output Data section for health warnings and further information.

Table 2: Modelled defended 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)									
			Defended									
	Easting	Northing	20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	609647	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	609640	128583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	609634	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	609636	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	609642	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	609638	128591	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	609630	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	609633	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	609624	128589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	609619	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	609626	128595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	609631	128597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	609625	128601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	609620	128600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	609613	128598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	609615	128604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
18	609621	128605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	609617	128608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52
20	609612	128606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52

Data taken from the Romney Marsh Tidal Mapping Study, completed by JBA Consulting in 2020.

Climate change (CC) data represents modelled levels with an allowance for sea level rise for the years specified. In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with 2016 NPPF guidance which has since been updated.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

See Model Output Data section for health warnings and further information.

Table 3: Modelled undefended 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)									
	Easting	Northing	Undefended									
			20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	1.75	1.91	2.01	2.06	2.16	2.31	2.61	2.76	3.23	3.39
2	609647	128585	1.73	1.89	1.99	2.03	2.13	2.29	2.58	2.73	3.21	3.36
3	609640	128583	1.76	1.92	2.02	2.06	2.17	2.32	2.62	2.77	3.24	3.40
4	609634	128580	1.80	1.96	2.06	2.10	2.21	2.36	2.65	2.81	3.28	3.44
5	609636	128585	1.76	1.92	2.02	2.07	2.17	2.32	2.62	2.77	3.25	3.40
6	609642	128588	1.71	1.88	1.97	2.02	2.12	2.28	2.57	2.72	3.20	3.35
7	609638	128591	1.70	1.86	1.96	2.00	2.11	2.26	2.56	2.71	3.18	3.34
8	609630	128588	1.69	1.85	1.95	2.00	2.10	2.26	2.55	2.70	3.18	3.34
9	609633	128593	1.66	1.82	1.92	1.97	2.07	2.23	2.52	2.68	3.15	3.31
10	609624	128589	1.64	1.80	1.90	1.95	2.05	2.20	2.50	2.65	3.13	3.28
11	609619	128593	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.23	3.39
12	609626	128595	1.60	1.76	1.86	1.91	2.01	2.17	2.46	2.62	3.09	3.25
13	609631	128597	1.65	1.81	1.91	1.95	2.06	2.21	2.51	2.66	3.14	3.29
14	609625	128601	1.69	1.86	1.96	2.00	2.10	2.26	2.56	2.71	3.19	3.34
15	609620	128600	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.24	3.39
16	609613	128598	1.85	2.01	2.11	2.15	2.26	2.41	2.71	2.86	3.34	3.50
17	609615	128604	1.81	1.98	2.08	2.12	2.23	2.38	2.68	2.83	3.31	3.46
18	609621	128605	1.74	1.90	2.00	2.05	2.15	2.31	2.60	2.76	3.24	3.39
19	609617	128608	1.86	2.02	2.12	2.17	2.27	2.43	2.72	2.88	3.36	3.51
20	609612	128606	2.03	2.19	2.29	2.34	2.44	2.60	2.90	3.05	3.53	3.68

Data taken from the Romney Marsh Tidal Mapping Study, completed by JBA Consulting in 2020.

Climate change (CC) data represents modelled depths with an allowance for sea level rise for the years specified. In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with 2016 NPPF guidance which has since been updated.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

See Model Output Data section for health warnings and further information.

Table 4: Modelled defended 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)									
	Easting	Northing	Defended									
			20% AEP	5% AEP	2% AEP	1.33% AEP	0.5% AEP	0.1% AEP	0.5% AEP + CC (2070)	0.1% AEP + CC (2070)	0.5% AEP + CC (2115)	0.1% AEP + CC (2115)
1	609647	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	609647	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	609640	128583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	609634	128580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	609636	128585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	609642	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	609638	128591	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	609630	128588	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	609633	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	609624	128589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	609619	128593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	609626	128595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	609631	128597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	609625	128601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	609620	128600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	609613	128598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	609615	128604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
18	609621	128605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	609617	128608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
20	609612	128606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19

Data taken from the Romney Marsh Tidal Mapping Study, completed by JBA Consulting in 2020.

Climate change (CC) data represents modelled depths with an allowance for sea level rise for the years specified. In addition to sea level rise, the model applied an increase of 10% to both offshore wind speed and wave height for the 2070 and 2115 epochs. This is in line with 2016 NPPF guidance which has since been updated.

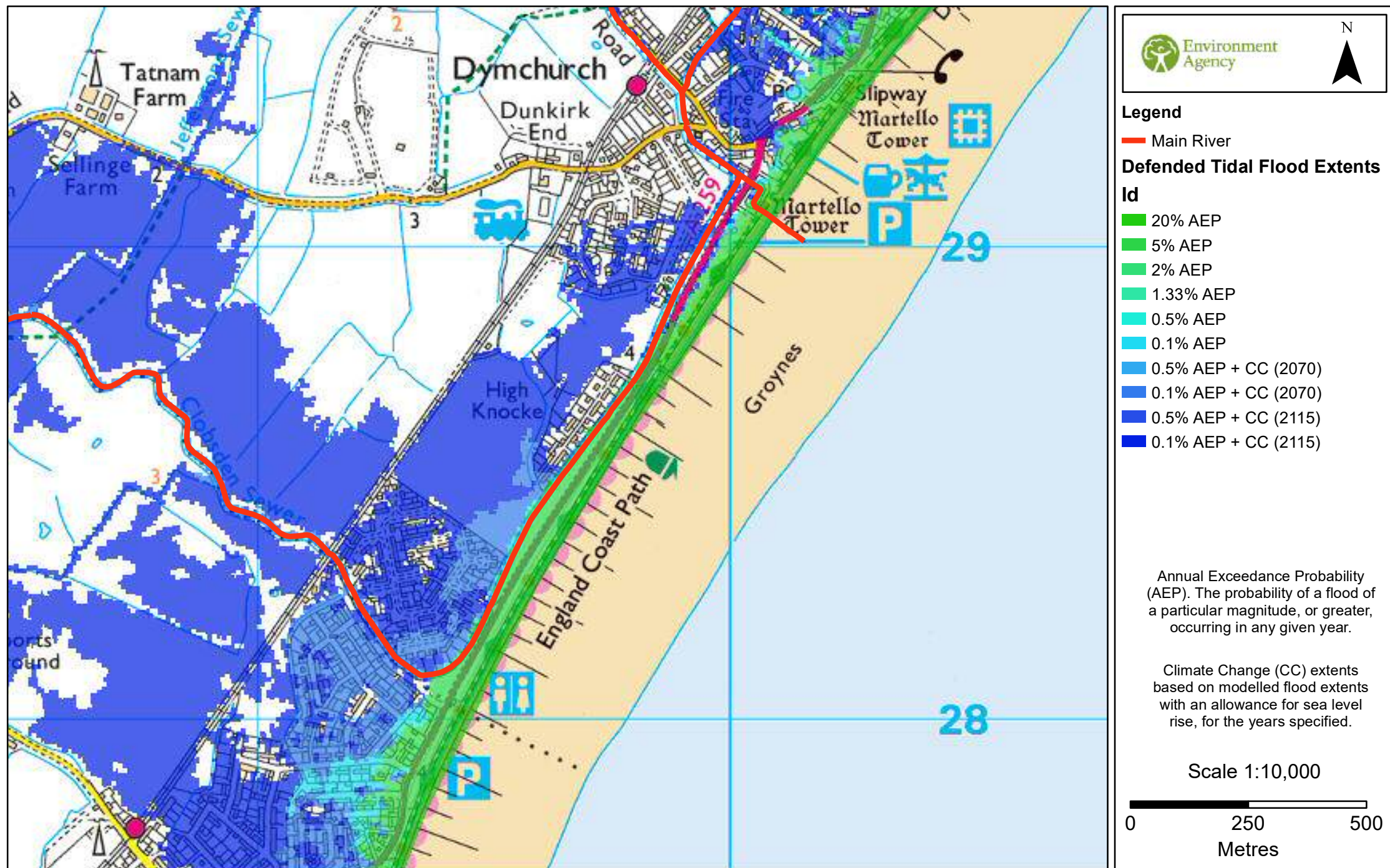
Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

See Model Output Data section for health warnings and further information.

Undefended Tidal Flood Extents Map centred on 30 High Knocke, Dymchurch, Romney Marsh, Kent TN29 0QD
Created 13 March 2024 [Ref: KSL 350933 JP]



Defended Tidal Flood Extents Map centred on 30 High Knocke, Dymchurch, Romney Marsh, Kent TN29 0QD
Created 13 March 2024 [Ref: KSL 350933 JP]



Defence Details

General Romney Marsh Defences

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% AEP (1 in 20 year) at Lydd Ranges, to in excess of 0.5% AEP (1 in 200 year) 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% AEP (1 in 200 year) standard of protection for a flood event occurring at any point along the coast by 2025.

St Mary's Bay

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 0.75% AEP (1 in 150 year) standard of protection for flooding from the sea in any given year.

The scheme was completed in 1995 and is owned and maintained by the Environment Agency.

Dymchurch A

Sea defences between High Knocke and Martello Tower number 23 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 0.5% AEP (1 in 200 year) standard of protection for flooding from the sea in any given year.

The scheme was completed in 2011 and is owned and maintained by the Environment Agency.

Dymchurch B

Sea defences between Martello Tower number 23 and Dymchurch redoubt comprise of a sea wall with a rock armour revetment.

The defences are designed to provide a 0.5% AEP (1 in 200 year) standard of protection for flooding from the sea in any given year.

The scheme was completed in 2008 and is owned and maintained by the Environment Agency.

Areas Benefiting from Flood Defences

The Environment Agency has taken the decision to retire this dataset and remove it from the Flood Map for Planning portal. This is because we have determined that it no longer meets the customer needs and creates a false sense of security for users.

To understand the long-term risk of flooding to an area, you can use the [Check Your Long Term Flood Risk portal](#): this will provide an understanding of flood risk from rivers and sea, taking into account the presence and condition of defences, and other sources of flood risk such as from surface water and reservoirs.

Historic Flood Data

We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this property. 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 therefore 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.

If you live in an area that is at risk of flooding, there are things you can do to reduce the damage that a flood can do to your home. The illustration below shows some examples.

Electrical sockets

Raising electrical sockets, fuse boxes and associated wiring to at least 1.5 metres above ground floor level will limit the risk of them being damaged by water during a flood. You may be able to use them again once the water has receded and the electricity supply is restored. If rewiring, bring cables down the wall from the top to the raised socket so that cabling doesn't get affected. Controls and ventilation systems should also be well above floor level.

TV and hi-fi

Mount your TV or hi-fi and speakers on the wall.

Walls

Use lime-based plaster instead of gypsum on walls.

Flood sacks

These are a lighter, modern version of sandbags. The sacks need to be soaked in water so they expand, then placed around the entrances to your home to protect against flood water. If they have not been in contact with contaminated water, they can be left to dry and shrink and can be reused. They take up little storage and can be cost-effective.

Doors and windows

Install synthetic or waxed window frames and doors.

Kitchen units and appliances

Fit stainless steel, plastic or solid wood kitchen units rather than chipboard. White goods such as fridges should be raised on plinths.

Flooring

Lay ceramic tiles or rugs on your ground floor rather than carpets. Rugs can easily be removed and placed out of reach. Non-carpeted floors can be easier to clean once the water has subsided and are cheaper to replace.

Shelving

Place irreplaceable items, such as family photos or treasured possessions, on high mounted shelves.

Air brick covers

Air bricks are used for ventilation, but during a flood, they can let water into your property. The covers are airtight, can be easily attached to the air bricks and will prevent water entering.

Drains and pipes

Fit non-return valves to all drains and water inlet pipes.

Door guards

These work in a similar way to air brick covers but on a larger scale. They can be placed across the bottom of your external doors to hold back low levels of water.

