PORTHLOO HOUSE . PORTHLOO.
ST MARYS. ISLES OF SCILLY
TR21 0NE

PROPOSED CHANGE OF USE FROM ARTIST STUDIO/GALLERY TO RESIDENTIAL ACCOMMODATION

FLOOD RISK ASSESSMENT

J-3477-Rev.01

Engineering & Development Solutions

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FLOOD RISK ASSESSMENT

Report No.	Issue Detail	Originator	Date	Checked by	Date
J-3477	01	TS	30/05/2024	JM	30/05/2024

For: Mr J Churchill
Porthloo House
Porthloo
St Marys
Isle of Scilly
TR21 0NE

Job No: J-3391
Date: May 2024
Edition: 01

CONTENTS

APPENDICES

1.0 INTRODUCTION

Mr and Mrs Churchill are proposing to submit a planning permission to apply for a change in use of part of Porthloo House; the site is located within the Porthloo area of St. Marys in the Isles of Scilly (IoS).

The location of the site is shown in **Figures 1 & 2** below.

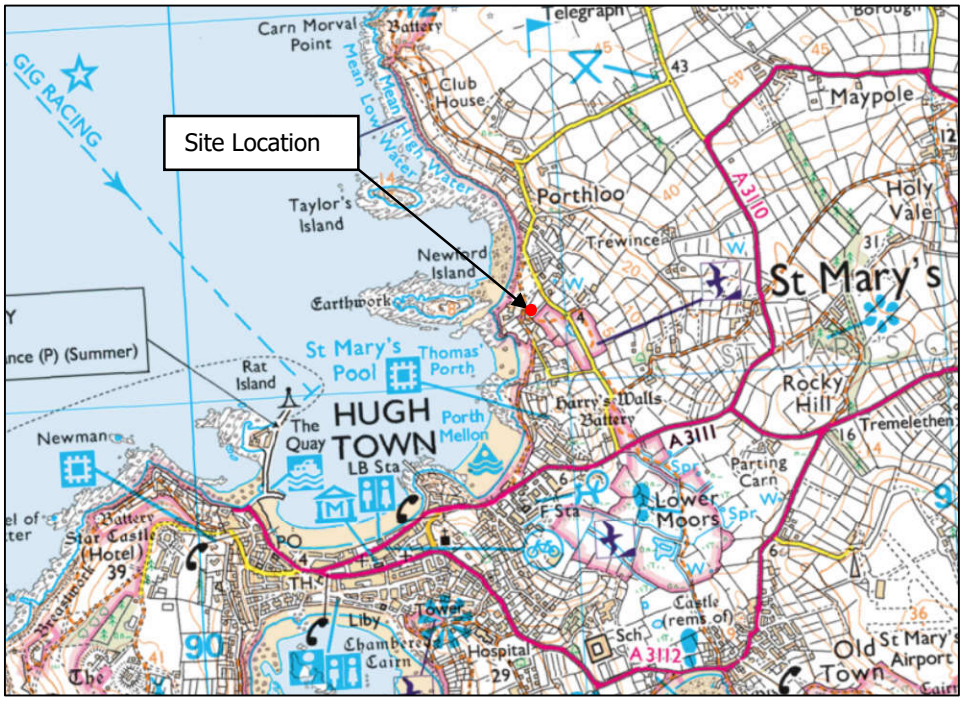


Figure 1 – Location Plan

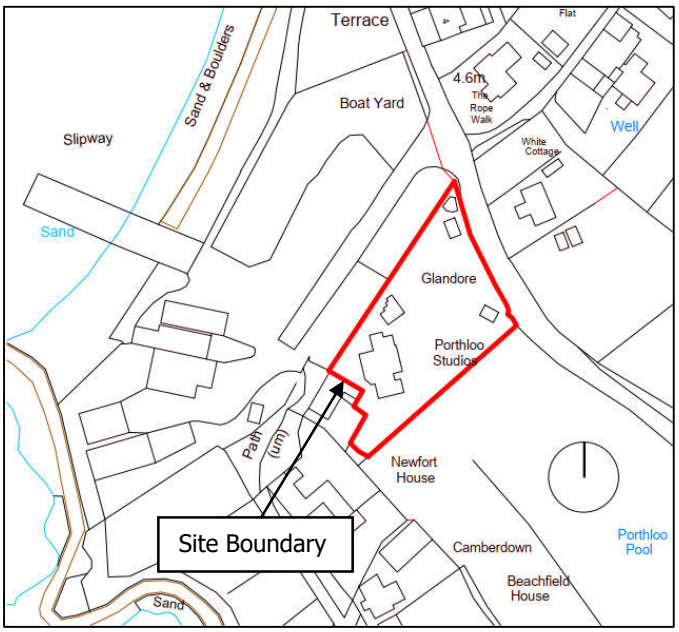


Figure 2 – Indicative Site Boundary

The site lies close to/within Flood Zone 3 according to the Environment Agency's "Flood Maps for Planning". Footnote 59 of paragraph 173 of the National Planning Policy Framework requires a site specific flood risk assessment (FRA) to be provided for all developments in Flood Zones 2 and 3; therefore, any proposal to redevelop/change the use of the site will need to be supported by an FRA.

In addition to this, Policy SS7 of the Council of the Isle of Scilly Draft Local Plan ordinarily requires a suitable and proportionate Flood Risk Assessment (FRA) for coastal developments when the level of the development is set at an elevation of 5m AOD or lower. As the site is situated on land at a minimum elevation of about 4.3m AOD, then an FRA is required.

In order to satisfy this requirement, Engineering and Development Solutions (EDS) have been commissioned by the applicant to undertake an FRA for the site to assess the potential flood risks. This report comprises the FRA for the proposed development, in line with Policy SS7 of the IoS Council , National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG).

1.1 Site Description

Porthloo House is a detached dwelling located in Porthloo on the western side of St Marys, to the north of Hugh Town; the approximate Ordnance Survey Grid Reference for the site is SV 90355 10548.

The building comprises three self-contained holiday lets arranged over four storeys, together with owners accommodation and an artist's studio/gallery area; the approximate Ordnance Survey Grid Reference for the site is SV 90914 11192.

There is a boat yard facility located to the immediate west of the site with Porthloo Beach being situated to the west of the boatyard. A concrete slipway links the beach with the boatyard area.

The north extent of the site is defined by Porthloo Lane and the east extent is defined by the boundary with the adjacent Porthloo Pool and wetland area which feeds into the Lower Moor SSSI. The south boundary of the site abuts other residential and commercial premises in Porthloo. Access to Porthloo House is off Porthloo Lane from the north east corner of the plot.

The topography of the site is relatively flat with a ground level of about 4.30m AOD in the vicinity of the dwelling house rising to about 4.60m AOD along the north boundary with Porthloo Lane. There is a low bank between the site and the boatyard with a crest level of about 4.80 to 5.00m AOD.

In the wider context, ground levels fall to the west down to Porthloo Beach and to the east into Porthloo Pool where ground levels are as low as 3.30m AOD. Ground levels rise to the north to a local high point at Telegraph Hill which is set at a maximum elevation of about 49m AOD.

1.2 Existing Usage

As noted previously, the building comprises three self-contained holiday lets, together with owner`s accommodation and artist's studio/gallery, all arranged over four storeys. The owner`s accommodation and the studio/gallery area occupy the ground and first floors and the holiday accommodation occupies the third and fourth floors; a drawing showing the layout of the current accommodation is provided within **Appendix A**.

1.3 Proposed Usage

The development proposal is to change the use of the artist's studio/gallery area at first floor level to from part of the domestic residence. The area will be utilised as a lounge and dining

facility for the owners. No external or structural alterations are proposed and no additional sleeping accommodation will be introduced into the premises as part of the change of use.

1.4 Flood Risk Context

The site is set at a relatively low elevation and situated close to the tidal waters oof Porthloo Beach and the Roads beyond. As such, there is potential for the site to effected by coastal inundation.

Reference to the Environment Agency (EA) indicative flood map in **Figure 3**, below and in **Appendix B,** shows that the site is located within Flood Zone 3.

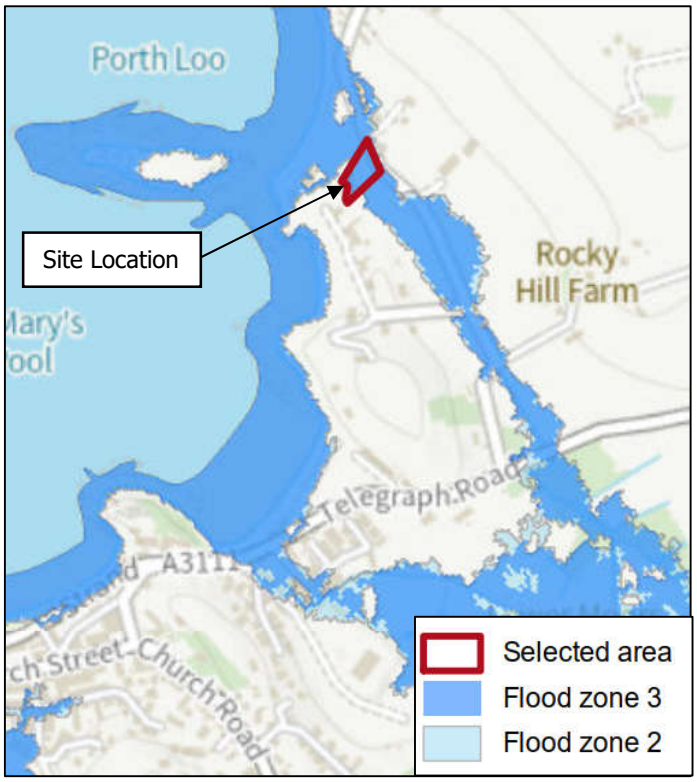


Figure 3 – Environment Agency Flood Map for Planning

It is evident that the site may be at risk of flooding from tidal/wave overtopping effects and this is considered further within **Sections 2** and **3** of the report.

1.5 Existing Flood Defences

Product 4 information provided by the EA does not indicate the presence of any flood defences benefitting the site. Notwithstanding this it is known that flood defences exist in this area.

In this regard the north section of the beach has recently been subject to flood defence improvements by the placement of a rock armour rip rap revetment to provide a level of protection of about 6.70m AOD. The new rock armour revetment links with an older length of engineered sand dune at the south end of the beach; the sand dune is provided with a timber retaining wall supporting the landward face of the dune. The dune has a level of protection of about 6.70m AOD also.

The slipway is provided with a system of demountable stop logs and steel posts which allows the top of the slipway to be sealed off from the beach. The top of the stop logs are set at a similar level to the dune abutments on either side.

The rock armour revetment and engineered dune system tie in with higher ground to the north and south respectively. As such, the land behind the beach including Porthloo House benefits from a continuous length of flood protection infrastructure to a level of about 6.70m AOD.

2.0 FLOOD MECHANISMS

Several possible flooding mechanisms have been considered at the site and are discussed below.

2.1 Groundwater Flooding

Groundwater flooding is linked to the presence of aquifers and the ability of the underlying geological strata to bear water. Flooding occurs when water levels in the ground rise above surface elevations. The Environment Agency/BGS maps have been consulted to establish the aquifer designations of bedrock and superficial deposits underlying the site; the aquifer designation is classified as a ***Secondary A*** aquifer.

This type of aquifer is defined as a permeable layer capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

It is unlikely that groundwater would issue to the surface at this site as it is located in close proximity to the sea which will allow groundwater to drain down to the local sea levels. In addition, the nearby Porthloo Pool would act as a sump for groundwater . As such, flooding from groundwater is not considered to represent a meaningful risk to the site and this form of flooding is discounted from further consideration.

2.2 Overland Sheet Flow

The GOV.UK map for the risk of surface water flooding has also been consulted in order to assess the risk of flooding from overland sources; an extract is produced in **Figure 4** below. The mapping indicates that the site is set with an area of very low flood risk with a less than 0.1% chance of flooding in any one year.

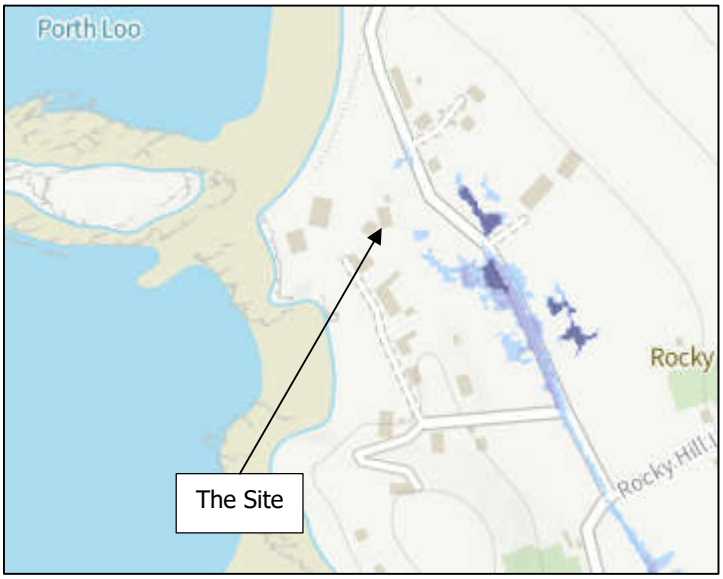


Figure 4 – Extract From GOV.UK Risk of Surface Water Flooding Map

In view of this, the site is considered to be at no meaningful risk of flooding from surface water sources and this mechanism of flooding is discounted from further consideration.

2.3 Flooding from Reservoirs

The GOV.UK map for risk of flooding from reservoirs has also been consulted to assess risks from this form of flooding. The map shows no risk of flooding from such features.

2.4 Fluvial Flood Risk

There are no significant watercourses near or upslope of the site. In consideration of this, flooding from fluvial sources is not considered to represent a meaningful risk to the site and this form of flooding is discounted from further consideration.

2.5 Flooding from Sewers

There are unlikely to be any sewers in the area of significant size in the area of the site and as such it is concluded that the site is at low risk of flooding from sewerage.

2.6 Tidal/Wave Flooding

The site is located in close proximity to the tidal waters of Porthloo and the Roads beyond. Due to the relatively low-lying elevation of the site and the proximity to the sea, there is a risk to the site from tidal/wave overtopping flooding. This potential form of flooding in therefore considered in more detail in **Section 3** of the report.

2.7 Historic Flooding

The Environment Agency have provided information regarding historic events of flooding within the area as part of the Product 4 data request.

Historic flooding in the area of Porthloo is noted in the tabulated flood record provided, however, no flood outline is shown within the associated map extract also provided. Flooding is noted to have taken place on the road and slipway but no properties are specifically mentioned.

The IoS Local Flood Risk Management Strategy March 2017 does note breaching and overtopping of the embankment along the shoreline but there is no reference to property flooding.

Overall it is concluded that the road, slipway and boatyard area to the west of the site have been subject to historic flooding due to coastal/wave overtopping effects, but there is no readily available evidence to indicate that Porthloo House itself has been flooded in the past.

3.0 DETAILED CONSIDERATION OF TIDAL AND WAVE OVERTOPPING FLOODING

The EA have provided flood information for the area based upon their Isles of Scilly St Mary's Model (2019) which assesses the risk of flood inundation from extreme sea levels and wave overtopping. The EA have also provided information on extreme still water tidal level at St Marys in connection with previous projects undertaken by EDS.

A copy of the information recently received from the EA is provided in **Appendix B**.

3.1 Tidal Flood Levels

Considering tidal sea levels, the EA have previously provided present day still water tidal levels for St Mary's , as outlined below:

- 1 in 200-year tidal level – **3.84m AOD**
- 1 in 1,000-year tidal level – **3.96m AOD**

The EA tidal flood levels do not account of sea level rise due to climate change; an allowance for climate change over the lifetime of the development (100 years for a residential property) should be undertaken. Information on climate change allowances has been outlined by the Environment Agency in the guidance entitled 'DCIS Climate Change Allowances- Strategic and Development Planning'. When accounting for climate change over the lifetime of a residential development the net sea level rise is taken to be 1.45m over the next 100 years. Therefore, the undefended 1 in 200-year still water tidal level with an allowance for climate change is taken to be **5.29m AOD.**

Comparing this to existing site levels taken from LIDAR survey **(Appendix A),** the elevation of the ground floor of the building is approximately 4.40m AOD and the minimum level on the access drive outside of the house linking the site to Porthloo Lane is about 4.30m AOD. It is therefore apparent that the ground floor of the building and the access is set at an elevation above the present day 1 in 200 year and 1 in 1,000 year still water tidal levels.

With the predicted effects of sea level rise over the lifetime of the development, it is apparent that tidal/coastal flooding of the site may take place.

Notwithstanding this, sea levels can be elevated above still conditions by surge effects, wave action and other environmental and physical effects, so seawater flooding in the form of wave overtopping is considered further below in **Section 3.2**.

3.2 Flooding from Wave Overtopping

The Isel of Scilly Model (2019) provides information on flood inundation resulting from extreme sea levels and wave overtopping. This information has been consulted to assess risks from this source. Both undefended and defended flood cases are provided.

Counterintuitively the model results show that the defended case produces more onerous flood levels and depths at the site than the undefended case when considering the present day scenario. The exact reason for this is not known, though it may be the case that the defences act to trap water overtopping the defences on the landward side of the defences and prevent it flowing back into the sea. In this way the water level behind the defences could build up to a considerable depth and this may be what is reflected within the model results.

Whatever the reason, the defended water depths and levels only are considered within this study for the present day scenario as this represents the more onerous scenario and complies with the precautionary approach.

For the climate change scenario, the model shows that the undefended case produces the more onerous flood depths and levels; therefore the undefended case is considered for the long term scenario.

Flood information is provided for a number of node points on the site within the model as described in **Figure 5** below.

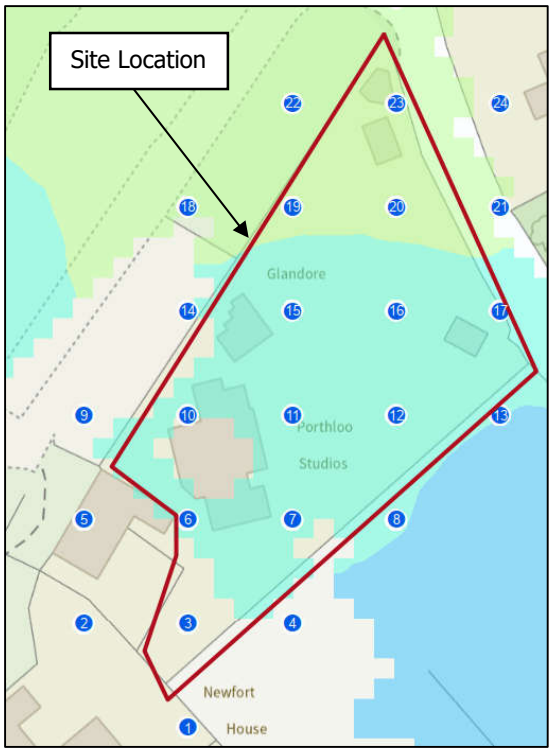


Figure 5 – Environment Agency Model Node Points

Considering the 1 in 200 (0.5% AEP) year present day defended case , water depths and levels provided by the EA at key node points are as shown below in **Table 1**. Nodes 10 and 11 have been selected for consideration as they represent conditions at the building and nodes 16 and 17 has been selected for consideration as they represent conditions on the access route to Porthloo Lane.

Reference Point	Water Depth (m)	Water Surface Elevation (m AOD)
Node 10	0.22	4.62
Node 11	0.22	4.62
Node 16	0.32	4.64
Node 17	0.32	4.64

Table 1 – Summary of EA Flood Depths and Heights from IoS 2019 Model for Defended 1 in 200 Year Case Present Day

Note: Water depths shown are based on LIDAR ground levels deducted from model WSE

With reference to **Table 1** above, the EA data indicates that some flooding would occur on the site due to surge/wave topping effects. The maximum water surface elevation across the footprint of the building is 4.62m AOD indicating that the depth of flooding over the ground floor of the building could be up to 0.22m. The depth of flooding on the access up to Porthloo Lane could be as deep as 0.32m.

Considering the 1 in 200 (0.5% AEP) year undefended case with allowance for climate change, predicted water depths and levels at the node points are as shown below in **Table 2**. It is noted that the predicted water surface elevation (WSE) shown in **Table 2** have been modified from those shown in the EA model in order to allow a for a 1.45m rise in sea level for climate change. The EA model allows for a 1.037m rise in sea level for climate change.

The predicted water level at the site (Node 10) increases from 4.62m AOD to 5.14m AOD (0.52m) according to the EA model arising from a 1.037m rise in the general sea level. Pro-rating this 0.52m rise in the ratio of 1.45m to 1.037m, increases the predicted flood water level under the climate change event to 5.35m AOD at node 10, or a rise of 0.73m. This increase in water surface elevation has been applied to all the EA climate change node points levels to determine the climate change situation relating to a 1.45m rise in sea level.

Reference Point	Water Depth (m)	Water Surface Elevation (m AOD)
Node 10	0.95	5.35
Node 11	0.95	5.35
Node 16	1.05	5.35
Node 17	1.05	5.35

Table 2 – Summary of EA Flood Depths and Heights from IoS 2019 Model for Undefended 1 in 200 Year Case with Climate Change.

Note: WSE based on EA value AOD plus 0.44m

The maximum depth of flooding over the ground floor of the premises in the long term climate change case would be about 0.95m and the maximum depth of flooding to the access would be 1.05m.

Flow velocities are likely to be low in all cases due to the tidal nature of the flooding and pedestrians would be protected by direct wave effects by the action of the flood defences.

4.0 ACCESS/EGRESS

Access and egress to and from the site would be to the north along the driveway which serves the premises and then onto Porthloo Road. Porthloo Road would also potentially be flooded during an extreme event and dry conditions on the highway would not be available until reaching Rocky Hill Lane to the south or up the hill towards Porthloo Farm to the north.

Residents should avoid moving through flood water unless this is absolutely necessary and it is noted in all cases that the upper three floors of the premises would be well above any flood level and would act as a safe haven. There is an internal staircase within the building which would allow residents to move from ground floor to first floor level without having to go outside and through any flood water.

It is further noted that the area of the proposed change of use in on the first floor level of the premises and would therefore not be subject to flooding under any of the cases considered.

Tidal flooding would be of a finite duration and would subside after about 4 hours or so in the worst case, though the duration of flooding may be affected by the blocking of return flows back to the sea by the defences.

As mentioned, residents should avoid moving through flood water unless this is absolutely necessary, however, where this cannot be avoided, risks can be assessed by reference to Table 13.1 of Defra/EA R&D Technical Report FD2320/TR2, reproduced below as **Figure 6** below**.**

Table 13.1 Danger to people for different combinations of depth and velocity

Velocity (m/s)	Depth of flooding (m)											
	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	2.50
0.00												
0.10												
0.25												
0.50												
1.00												
1.50												
2.00												
2.50												
3.00												
3.50												
4.00												
4.50												
5.00												

Key:
- Danger for some
- Danger for most
- Danger for all

For details regarding the danger classifications of 'danger to all', 'danger to most' and 'danger to some' reference should be made to HR Wallingford (2005) *Flood Risks to People Phase 2, The Flood Risk to People Methodology*, Environment Agency\Defra R&D Technical Report FD2321/TR1, March 2005. However, the following provides a very simplified guide as to the groups of people that should be considered as falling into these danger classifications:

- Danger for some – includes children, the elderly and the infirm.
- Danger for most – includes the general public
- Danger for all – includes emergency services

The outputs of the Flood Risk to People project indicate that flood depths below 0.25 m and velocities below 0.5 m/s are generally considered low hazard. When designing safe access and exit routes, the combinations of depth and velocity on the routes should correspond to the white boxes in the above diagram. As flood depth and/or velocity increase the hazard to people increases. Combinations of depths and velocities in the white boxes (below the 'danger for some' class) are 'very low hazard', but a hazard does remain.

Figure 6 Extract from Defra/EA R&D Technical Report FD2320/TR2 – Table 13.1

The hazard classification for moving through the flood water in a present day extreme event with surge and wave overtopping would be *danger for some* which includes children, the elderly and the infirm.

In the long term scenario with the predicted effects of climate change the hazard classification for moving through the flood water would be *danger for most* which includes the general public.

It is noted that tidal flooding of this nature is readily predictable and this should give residents adequate time to prepare for/undertake an evacuation of the premises

5.0 FLOOD RISK CHANGES AS A RESULT OF DEVELOPMENT

The proposed change in use does not act to increase occupancy levels within the property or alter sleeping accommodation as the area will be used for a lounge/diner function . Furthermore it has been demonstrated that the area is set well above any predicted flood level and it is therefore not at risk of direct flooding.

The current ground floor level of the premises and access/egress will not be altered by the change in use and the flood risk vulnerability classification for the site will not be affected by the proposed change.

No additional impermeable area is proposed as part of the change in use so there would be no increase in runoff rates or volumes. As such, existing surface water drainage arrangements may be retained as for the current scenario with no increase in flood risk.

Furthermore the proposed change in use will not act to redirect present day flow routes or act to infill the flood plain as the footprint of the current built development is unaffected.

In consideration of the above it is concluded that the proposed change in use will not increase flood risks within the property or elsewhere.

6.0 MITIGATION MEASURES

As there will be no change in flood risk arising from the change in use ,and as no physical works are required ,then no mitigation measures are proposed.

7.0 FLOOD RISK POLICY

It has been demonstrated that the site is located within Flood Zone 3 when considering the effects of storm surge and wave overtopping. With reference to Annex 3 of the National Planning Policy Framework (NPPF) the change of use would be classified as "More Vulnerable" in terms of its flood vulnerability classification. However it in noted that a "More Vulnerable" form of use already applies to the premises as a whole and that the flood risk vulnerability classification or flood risk elsewhere will not be altered by the proposed change.

Referring to Table 3 of the NPPF technical guidance document, **Figure 7,** below, a 'More Vulnerable' development within Flood Zone 3 would be classified as appropriate development in Flood Zone 3 subject to the Exception Test being applied . However, the application would not be subject to a sequential test or an exception test as it is a minor development associated with an existing building with no change in its flood vulnerability classification.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

✓ Development is appropriate

✗ Development should not be permitted.

Figure 7 – Planning Practice Guidance (PPG) Table 3

The application should still meet the requirements of a site-specific flood risk assessment as is presented here.

8.0 SUMMARY

This planning application at Porthloo House proposes the change of function of a room on the first floor of the property from its present use as an artist's studio/gallery to part of the domestic residence to be used as a lounge/dining area.

It has been demonstrated that the area subject to the proposed change of use is set at an elevation which places it above all flood events considered. The highest likely flood level that would occur over the lifetime of the premises is estimated to be **5.35m AOD** (1 in 200 year undefended tidal with climate change) whilst the floor level subject to the proposed change in use is set an elevation of approximately **6.80m AOD.**

The proposed change of use will not introduce any further sleeping accommodation into the dwelling nor encourage additional persons to live at the property compared to the existing situation. The flood risk vulnerability classification of the premises as a whole will therefore not be effected. It has also been demonstrated that the proposed change will not increase flood risk elsewhere.

The flood risk assessment has confirmed that the site is currently in Flood Zone 3 when considering the effects of storm surge and wave overtopping. There are flood defences in place at the top of Porthloo Beach , however, these do not prevent flooding of the site according to EA flood model information.

Access/egress to the site is ordinarily along Porthloo Lane to the north or south depending upon the direction of travel. Consideration of extreme seawater levels indicates that the access route could be flooded to a depth of 0.33m during a present day extreme event with surge and wave overtopping, increasing to a depth of 1.05m with the predicted effects of climate change.

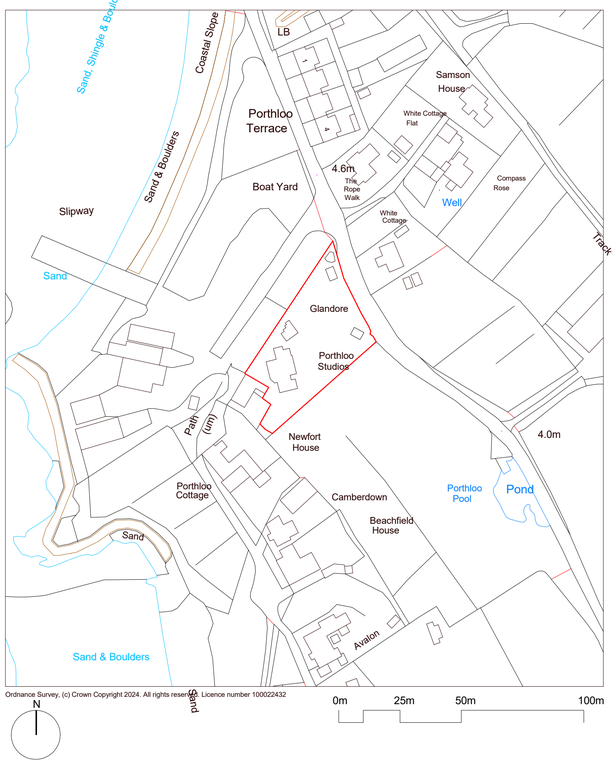
In all cases the upper three floors of the premises, including the area subject to the proposed change in use, would be well above any flood level and would act as a safe haven. Tidal flooding would be of a finite duration and would subside after about 4 hours in the worst case, though this may be affected by blocking of return flows to the sea by the defences.

Flood mitigation measures are not deemed to be appropriate as there will be no change in flood risk arising from the change in use and no physical works are required.

With respect to flood risk planning policy, the application would be considered to be appropriate. The building is already in use for residential purposes and therefore the proposed change in use will not alter the flood risk vulnerability of the premises. The application would not be subject to a sequential or exception test as it is a minor development within the curtilage of an existing dwelling.

APPENDIX A SITE LIDAR LEVELS AND DEVELOPMENT PROPOSALS


ACCESS ONTO
POTTHLOO LANE
OUTLINE OF
PORTHLOO HOUSE
SITE
BOUNDARY



1 Site Location Plan
1 : 1250

2 Site Block Plan - Existing
1 : 500

1-500 Scale Bar
1 : 500

RECEIVED
By Liv Rickman at 12:28 pm, Mar 18, 2024

Rev	Description	Date
1	Client Preliminary Issue	24-02-25
2	Planning Submission	24-02-25
3	Planning Validation	24-03-17

CODE	SUITABILITY DESCRIPTION
STATUS	PURPOSE OF ISSUE

Matthew Wills - RIBA Chartered Architect
3 Coppice Gardens, Lanner Moor, Lanner TR16 6BY
Email: matthewwillsriba@gmail.com
Tel: 07834453618

PROJECT
Porthloo, St Marys, Isles of Scilly

TITLE
Site Location and Block Plan

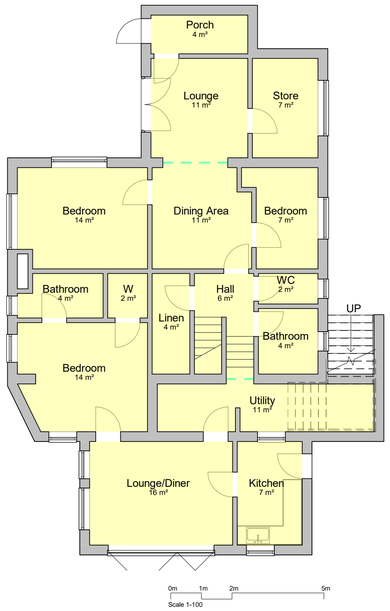
CLIENT
J & L Churchill

DRAWN BY	CHECKED BY	DATE
MCW	MCW	24/02/24

SCALE (@ A1)	PROJECT NUMBER
As indicated	2303

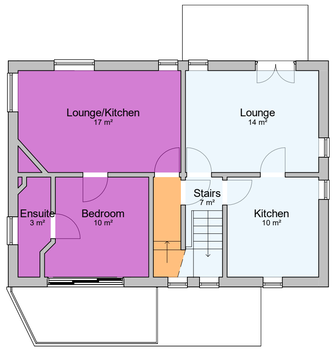
DRAWING NUMBER	REV
2303-MWA-XX-XX-DR-A-1000	3

17/03/2024 10:19:08



1 Level 0 Existing - Area Use
1 : 100

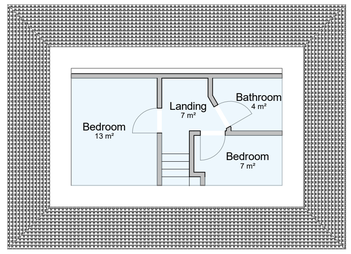
2 Level 1 Existing - Area Use
1 : 100



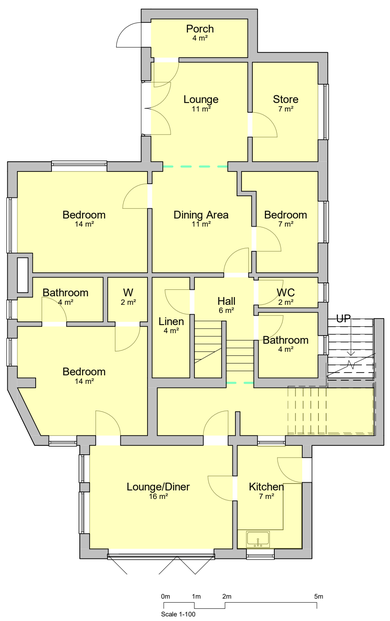
3 Level 2 Existing - Area Use
1 : 100

Level	Residence	Common	Gallery	Holiday Let	Holiday Let	Total
00	123.3m²	-	-	-	-	123.3m²
01	26.3m²	12.6m²	35.1m²	-	-	74.0m²
02	-	3.0m²	-	30.8m²	28.3m²	62.1m²
03	-	-	-	-	22.6m²	22.6m²
Total	149.6m²	15.6m²	35.1m²	30.8m²	50.9m²	282.0m²

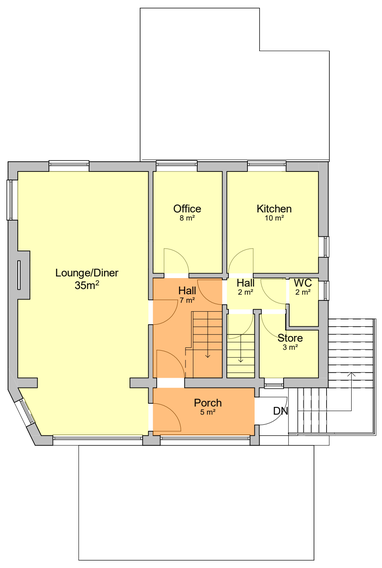
Figures above are NIA (Net Internal Area)



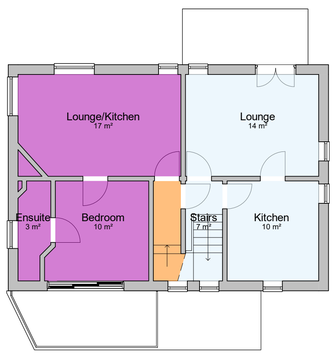
4 Level 3 Existing - Area Use
1 : 100



5 Level 0 Proposed - Area Use
1 : 100



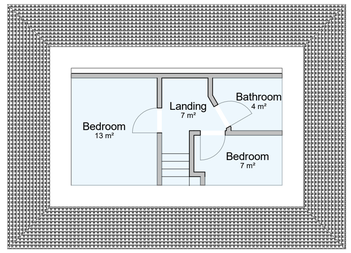
6 Level 1 Proposed - Area Use
1 : 100



7 Level 2 Proposed - Area Use
1 : 100

Level	Residence	Common	Gallery	Holiday Let	Holiday Let	Total
00	123.3m²	-	-	-	-	123.3m²
01	61.4m²	12.6m²	-	-	-	74.0m²
02	-	3.0m²	-	30.8m²	28.3m²	62.1m²
03	-	-	-	-	22.6m²	22.6m²
Total	184.7m²	15.6m²	-	30.8m²	50.9m²	282.0m²

Figures above are NIA (Net Internal Area)



8 Level 3 Proposed - Area Use
1 : 100

RECEIVED
By Liv Rickman at 12:27 pm, Mar 18, 2024

Rev	Description	Date
1	Planning Validation	24-03-17

CODE	SUITABILITY DESCRIPTION
STATUS	PURPOSE OF ISSUE

Matthew Wills - RIBA Chartered Architect
3 Coppice Gardens, Lanner Moor, Lanner TR16 6BY
Email: matthewwillsriba@gmail.com
Tel: 07834453618

PROJECT
Porthloo, St Marys, Isles of Scilly

TITLE
Existing and Proposed Area Use

CLIENT
J & L Churchill

DRAWN BY	CHECKED BY	DATE
Author	Checker	03/17/24

SCALE (@ A1)	PROJECT NUMBER
As indicated	2303

DRAWING NUMBER	REV
2303-MWA-XX-XX-DR-A-1006	1

17/03/2024 10:19:20

APPENDIX B ENVIRONMENT AGENCY INFORMATION

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

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

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

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

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

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

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

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

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

In **Wales,** you should refer to TAN15 for information about what flood consequence assessment is needed for new development in the different flood zones
http://new.wales.gov.uk/splash;jsessionid=8ylGTfGZthmB0t2vhp6hS1GcB1LXvZzB3Ylczf20Xn7LK3zK0nMk!981825250?orig=/topics/planning/policy/tans/tan15/

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

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

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk / Consequence Assessment (FRA / FCA) where one is required, but does not constitute such an assessment on its own.

2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or overland runoff. The information produced by the local planning authority referred to above may assist here.

3. Where a planning application requires a FRA / FCA and this is not submitted or deficient, the Environment Agency may well raise an objection.

4. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your local planning authority.

DCIS Climate Change Allowances – Strategic and Development Planning

FIRST

Please check the latest Climate Change allowance :-

Flood risk assessments: climate change allowances - GOV.UK (www.gov.uk)

We expect you to use the scenario values as shown on the adjacent table for the different types of development. You may provide different scenario (i.e. High Cen for SLR) as additional assessment but we will use these values/allowances for our assessments of FRA/Designs

*CFB = Coastal Flood Boundary – available at data.gov.uk

Valid June 2023 – FCRM

Development Vulnerability NPPG	Rainfall 1% Storms		River Less than 5km2		Fluvial	Sea Level Rise (SLR) Upper End
	Exe & East Devon	All others	Urban	Rural	Use 2080s values for all	Added to CFB* 2017 data
Commercial 75yr lifetime	45%	50%	50%	? - tbc	Central Allowance- See map next page	1.003m (2098 value)
Residential 100yr lifetime	45%	50%	50%	? - tbc	Central Allowance - see map next page	1.445m (2122 value)
Essential Infrastructure	45%	50%	50%	? - tbc	Higher Central - See map next page	Please confirm with EA office

SPDC@environment-agency.gov.uk or SW_Exeter-PSO@environment-agency.gov.uk

Environment Agency

FIRST

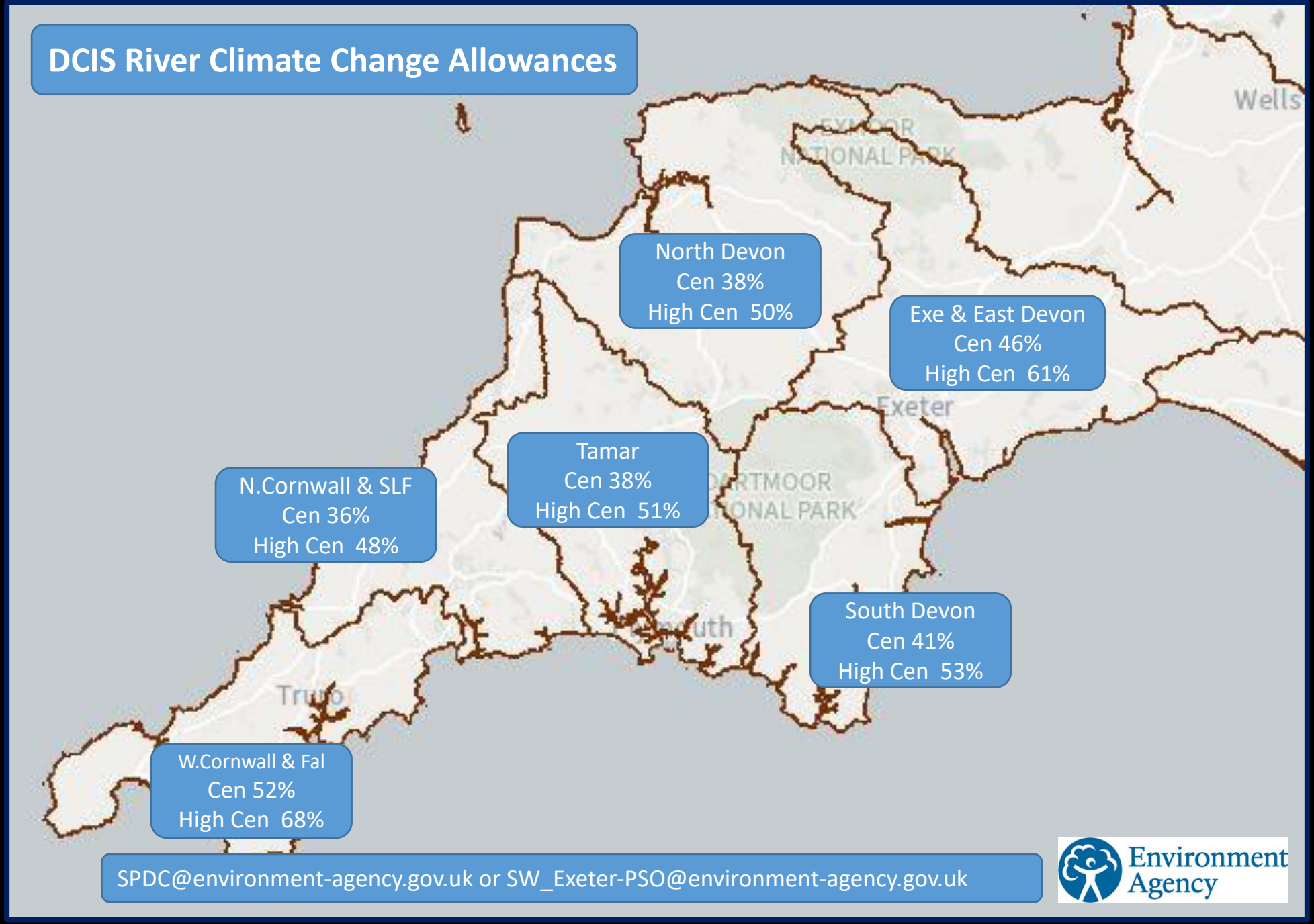
Please check the latest Climate Change allowance :-

[Flood risk assessments: climate change allowances - GOV.UK (www.gov.uk)]

- Wave Actions (Coastal & Estuary) will also have to be considered
- Freeboard will need to be added to set minimum floor or defence levels
- +40%CC Modelled scenarios, may still be used for some catchments (>5% diff from new values).

Valid June 2023 - FCRM

DCIS River Climate Change Allowances



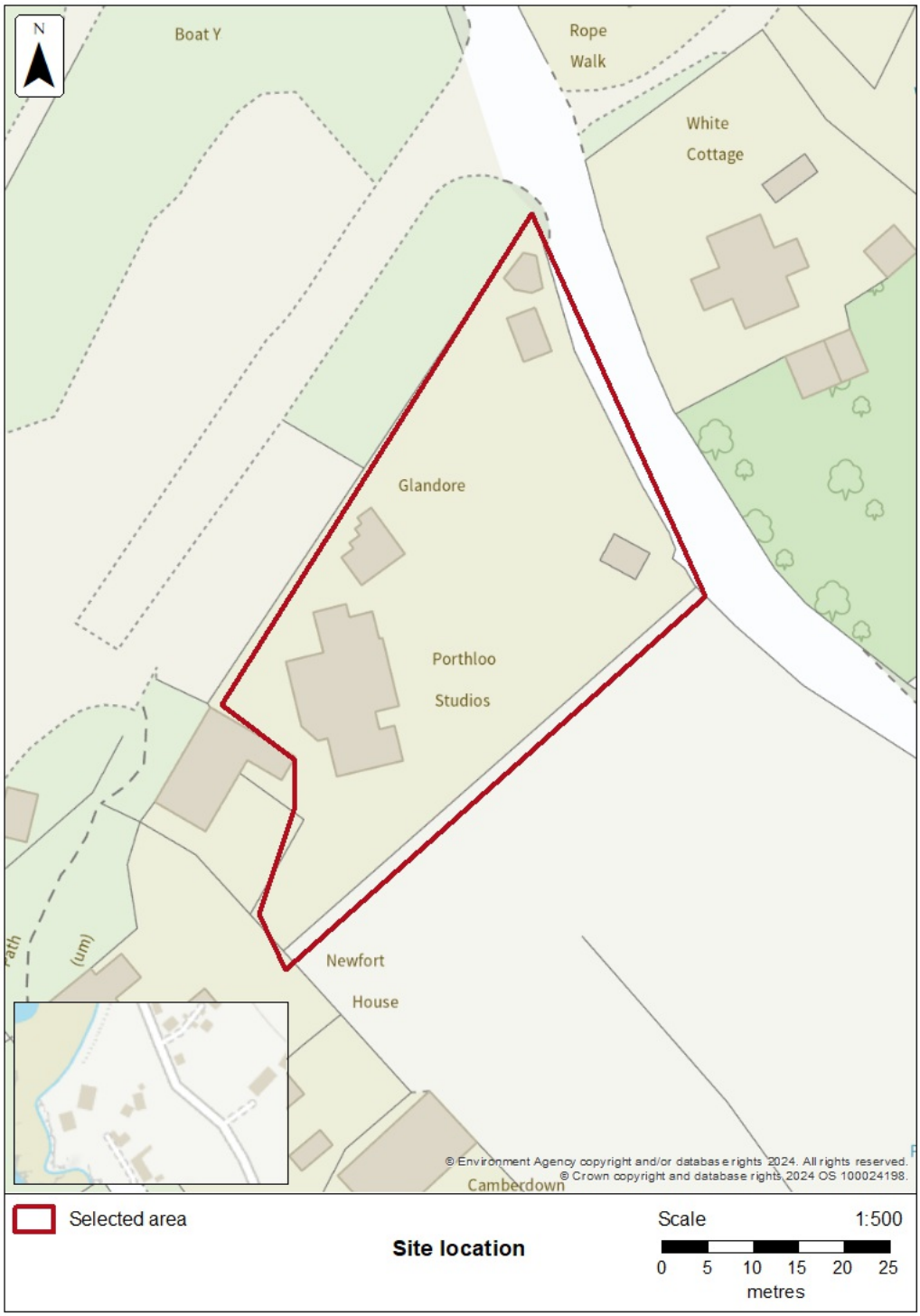
SPDC@environment-agency.gov.uk or SW_Exeter-PSO@environment-agency.gov.uk

Environment Agency

Flood risk assessment data

Location of site: 90931 / 11200 (shown as easting and northing coordinates)
Document created on: 23 May 2024
This information was previously known as a product 4.
Customer reference number: 9KG2UPXRNEJ2

Map showing the location that flood risk assessment data has been requested for.



Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

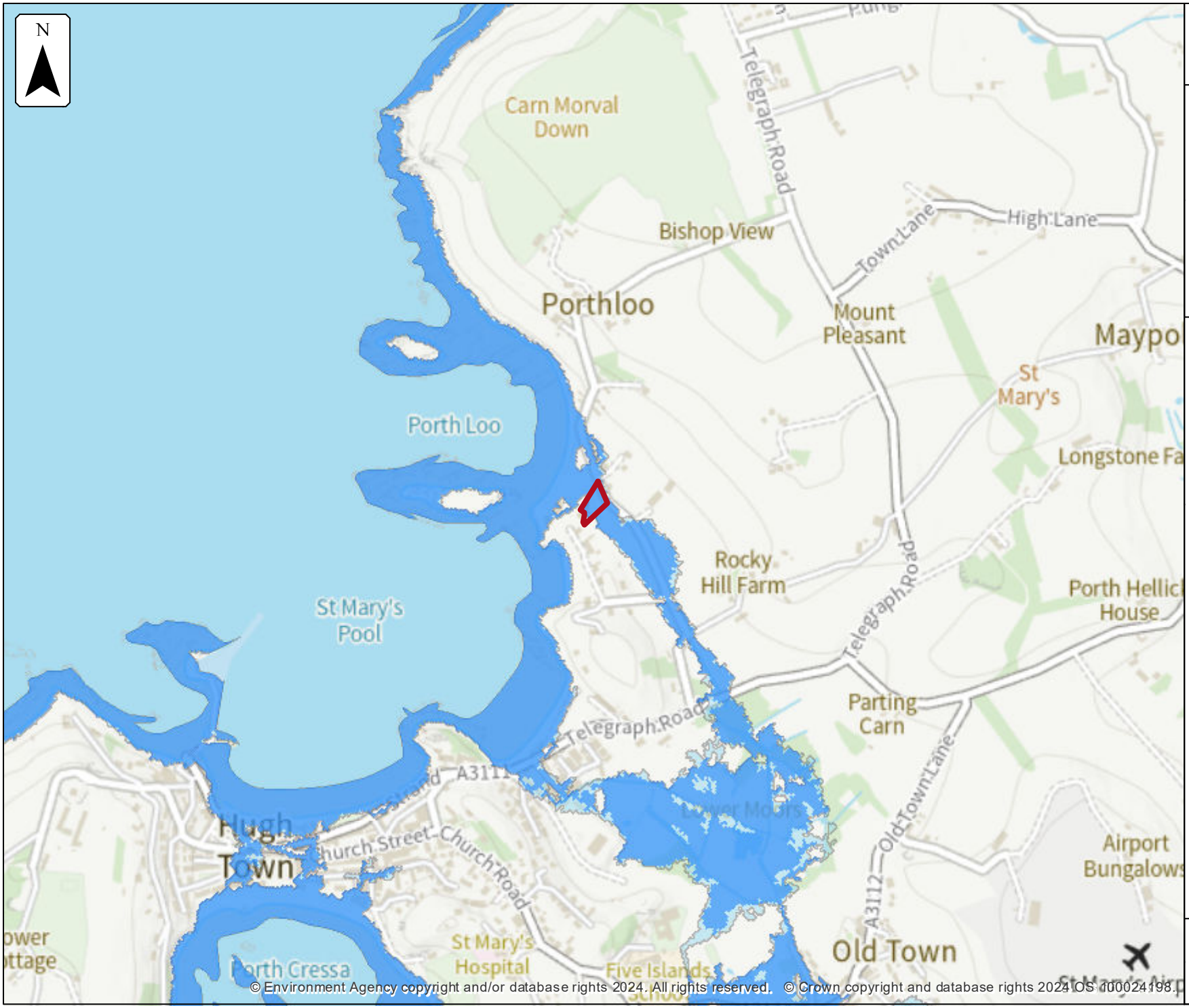
Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change

The flood zones are not currently being updated. The last update was in November 2023. Some of the flood zones may have changed, however all source data is included in the models below.



Environment Agency

Flood map for planning

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

- Selected area
- Flood zone 3
- Flood zone 2

0 100 200 300 400 500
metres

Historic Information

The map below is an indicative outline of areas that have previously flooded.

Historic outlines may not be visible where they overlap. You can download the outlines separately via the link below.

Download recorded flood outlines in GIS format

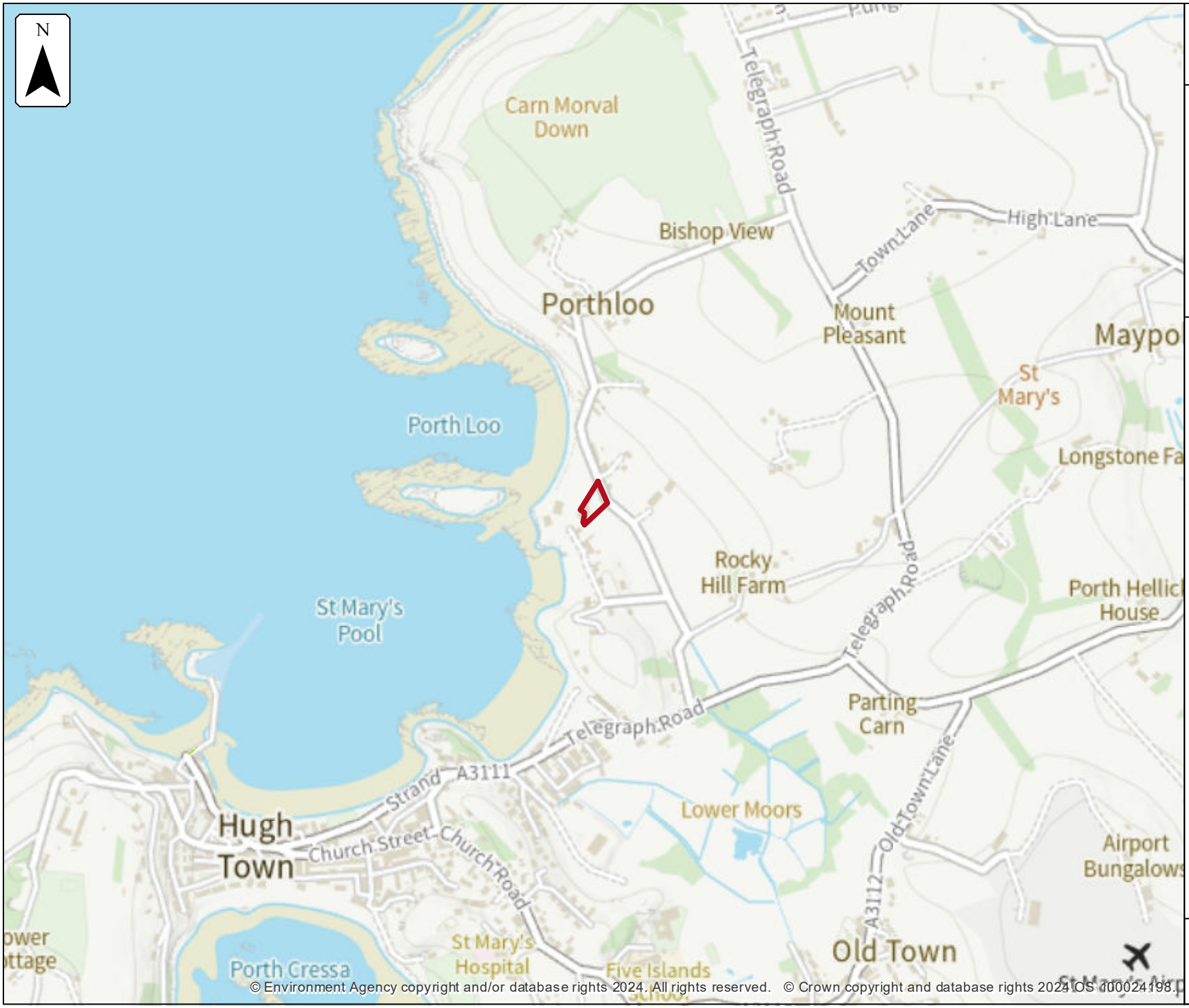
Our historic flood event outlines:

- are an indication of the geographical extent of an observed flood event. We map flooding to land, not individual properties.
- not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.
- are based on a combination of anecdotal evidence, Environment Agency staff observations and survey.
- do not provide a definitive record of flooding.

It is possible that there will be an absence of data in places where we have not been able to record the extent of flooding. It is also possible for errors to occur in the digitisation of historic records of flooding.

Remember that: other flooding may have occurred that we do not have records for

Please note that 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.



Environment Agency

Historic flood map

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

Selected area

Main river

Date of flood event

November, 2020

0 100 200 300 400 500
metres

Records of flooding in the Porthloo area.

Date	Location	Detail	Cause	Estimated Number of Properties Flooded	Flood Source
03/01/2018	IoS - St Mary's	Overtopping and debris onto road	Overtopping	0	Coastal
03/01/2014	IoS: St Mary's	Flooding in Porthloo due to wave overtopping in stormy conditions	Storm conditions		Coastal
18/10/2012	IoS: St Mary's - Porthloo Green	Flooding occurred up to a few inches from house doors, but no props flooded. Pumps required to remove water from area. No RFOs and exact extent unknown.	Storm causing heavy rain	0	Surface Water Runoff
01/01/1987	IoS: St Mary's - Porthloo slipway and Boathouse	Debris leaving outline of waves / sea inundation due to storm waves driving up slipway and track.	Waves driving up slipway and track		Coastal

This list contains all the records of flooding we hold, in a 1km radius of the specified location. Although this information is compiled to the best of our knowledge, the absence of flooding does not mean that an area has not flooded in the past, nor guarantee it will not flood in the future. Our records are updated as more information comes to light, and as flood incidents occur.

Correct as of 23 / 05 / 2024

Modelled data

About the models used

Model name: Isles of Scilly Coastal Model

Date: 2019

This model contains the most relevant data for your area of interest.

You will need to consider the latest flood risk assessment climate change allowances and factor in the new allowances to demonstrate the development will be safe from flooding.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1%chance of occuring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Isles of Scilly Coastal Model (2019)

We have provided data from the Isles of Scilly Coastal Model, 2019. Please consider the following information when using this model data:

- This is coastal model, and does not consider the risk of flooding from other source, including fluvial or surface water flooding.

- We have supplied the results and data from both the defended (flood defences included) and undefended (flood defences removed) scenarios. You will need to review the data provided, and select the scenario which provides the maximum flood extent and level (or the worst case) for the site. The most appropriate scenario will depend on the location of the specific site in question.

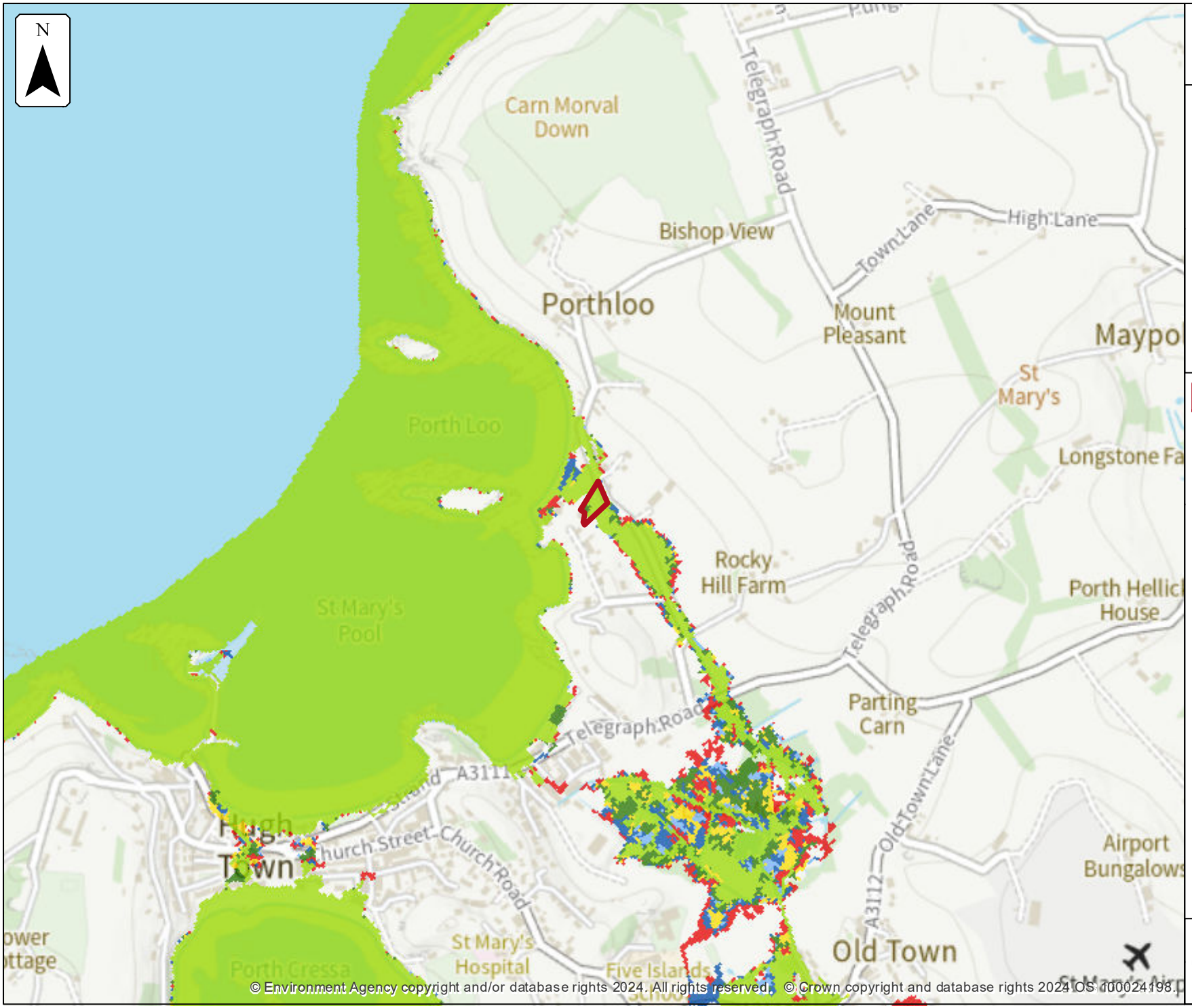
- Climate change: Model scenarios were completed with increases to the still water levels, wind speeds and wave heights to represent the impacts of climate change. This model was produced following the guidance that was available at the time of the model build (UKCP09). For Flood Risk Assessments, this should be updated using the latest guidance available. For more information and advice, please see: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

- The maps and digital data supplied should be considered only a summary of the conclusions of the study. It may be necessary to collect more detailed topographic information for particular sites where development is proposed and undertake a more detailed site-specific hydrological and hydraulic analysis for the location using guidance from the National Planning Policy Framework (NPPF)

- In this commission the focus has been on flooding from the sea rather than from fluvial sources. It is important that consideration is given to fluvial flooding for any development sites if appropriate. The impact of combined fluvial and tidal events should be examined to understand the impact that this has upon flood depth extent and the duration of inundation

- Any assessment of Flood Risk undertaken must be appropriate for the decisions that need to be based upon it, consider the risks and also take into account any limitations of the data used.

- Please be aware that the Environment Agency does not guarantee that this data is suitable for your purposes.



Environment Agency

Defended modelled tidal extent

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

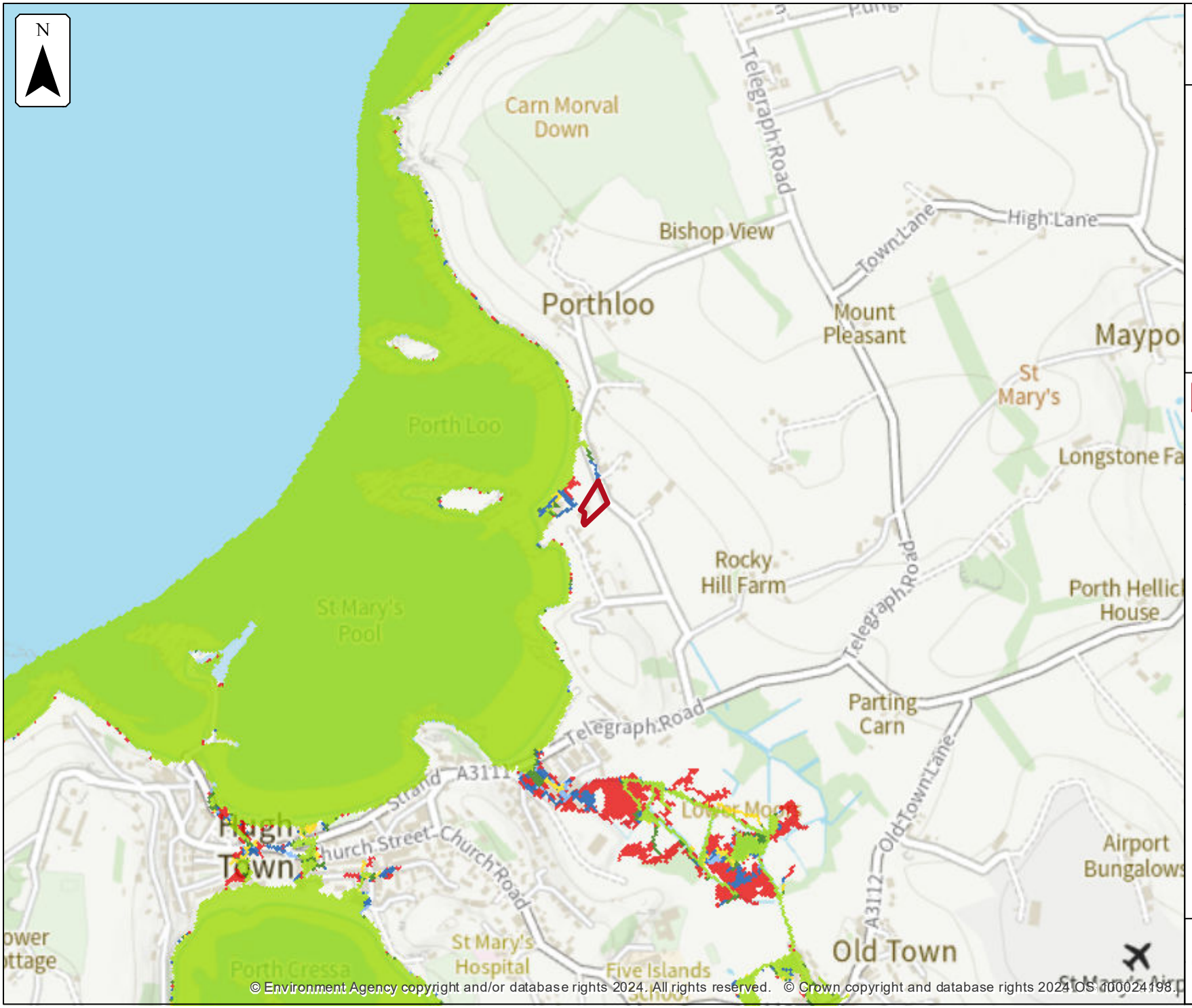
Selected area

Modelled flood extent

- 5% AEP
- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defences removed modelled tidal extent

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

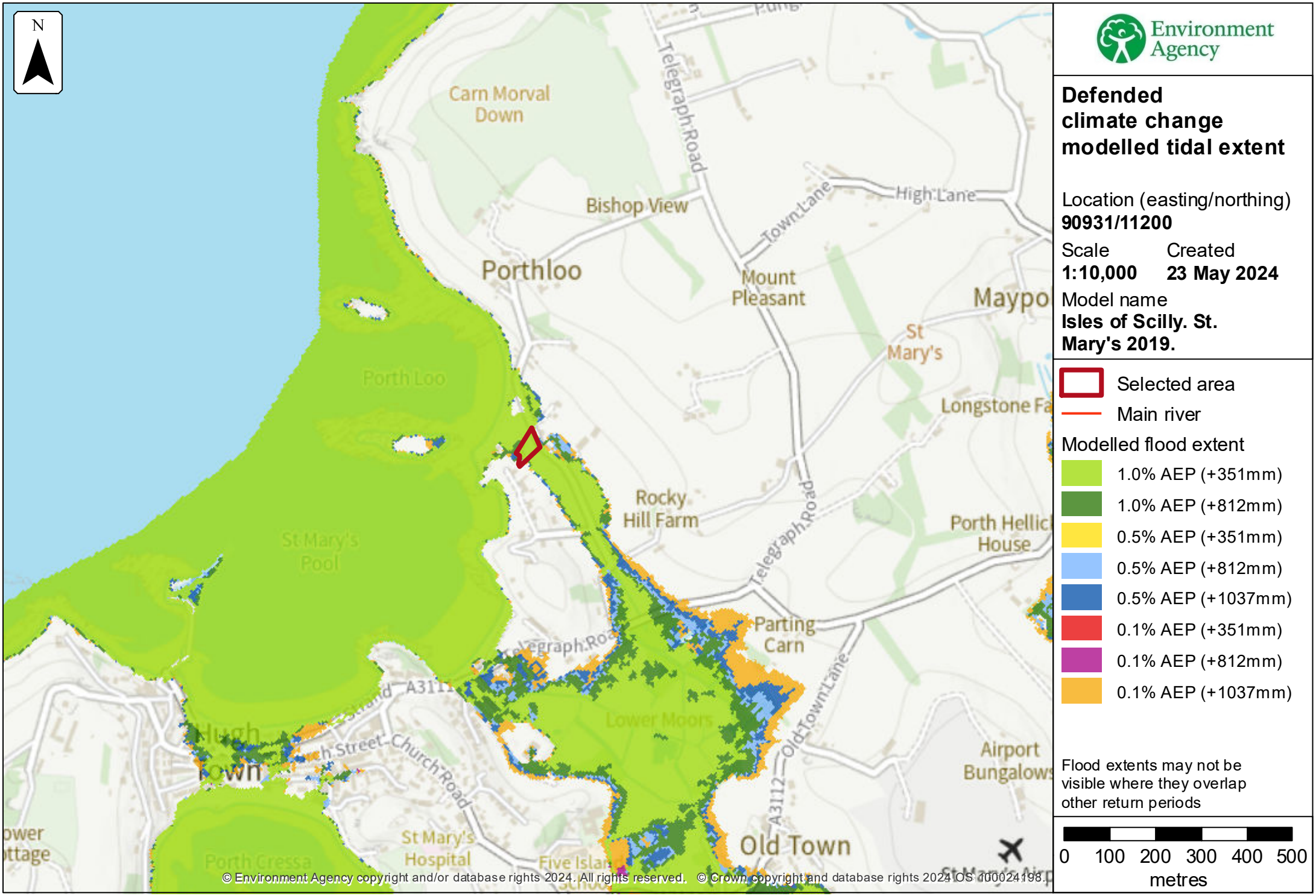
Selected area

Modelled flood extent

- 5% AEP
- 2% AEP
- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defended climate change modelled tidal extent

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

Selected area

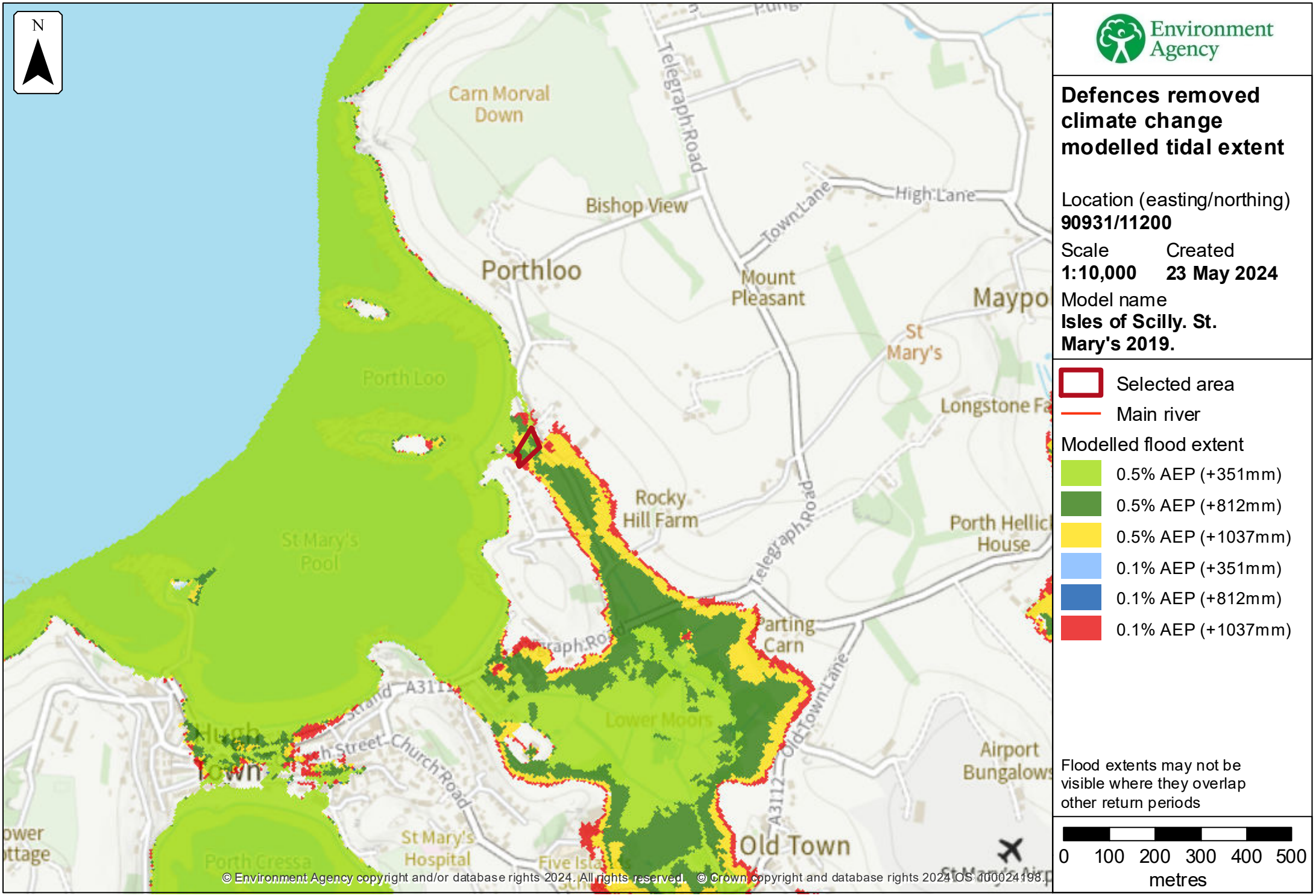
Main river

Modelled flood extent

- 1.0% AEP (+351mm)
- 1.0% AEP (+812mm)
- 0.5% AEP (+351mm)
- 0.5% AEP (+812mm)
- 0.5% AEP (+1037mm)
- 0.1% AEP (+351mm)
- 0.1% AEP (+812mm)
- 0.1% AEP (+1037mm)

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defences removed climate change modelled tidal extent

Location (easting/northing)
90931/11200

Scale
1:10,000

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

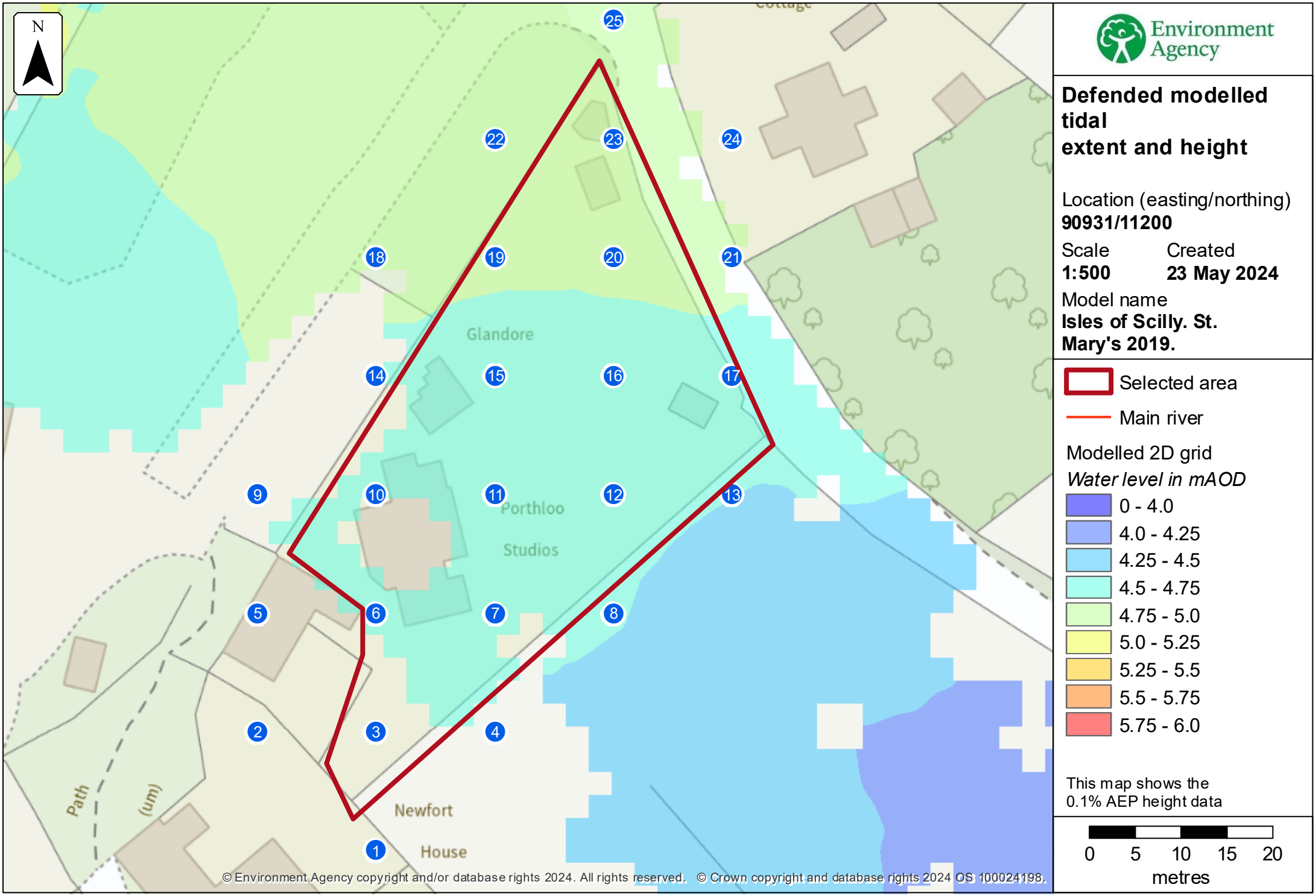
- Selected area
- Main river

Modelled flood extent

- 0.5% AEP (+351mm)
- 0.5% AEP (+812mm)
- 0.5% AEP (+1037mm)
- 0.1% AEP (+351mm)
- 0.1% AEP (+812mm)
- 0.1% AEP (+1037mm)

Flood extents may not be visible where they overlap other return periods

0 100 200 300 400 500
metres



Environment Agency

Defended modelled tidal extent and height

Location (easting/northing)
90931/11200

Scale
1:500

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 4.0
- 4.0 - 4.25
- 4.25 - 4.5
- 4.5 - 4.75
- 4.75 - 5.0
- 5.0 - 5.25
- 5.25 - 5.5
- 5.5 - 5.75
- 5.75 - 6.0

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

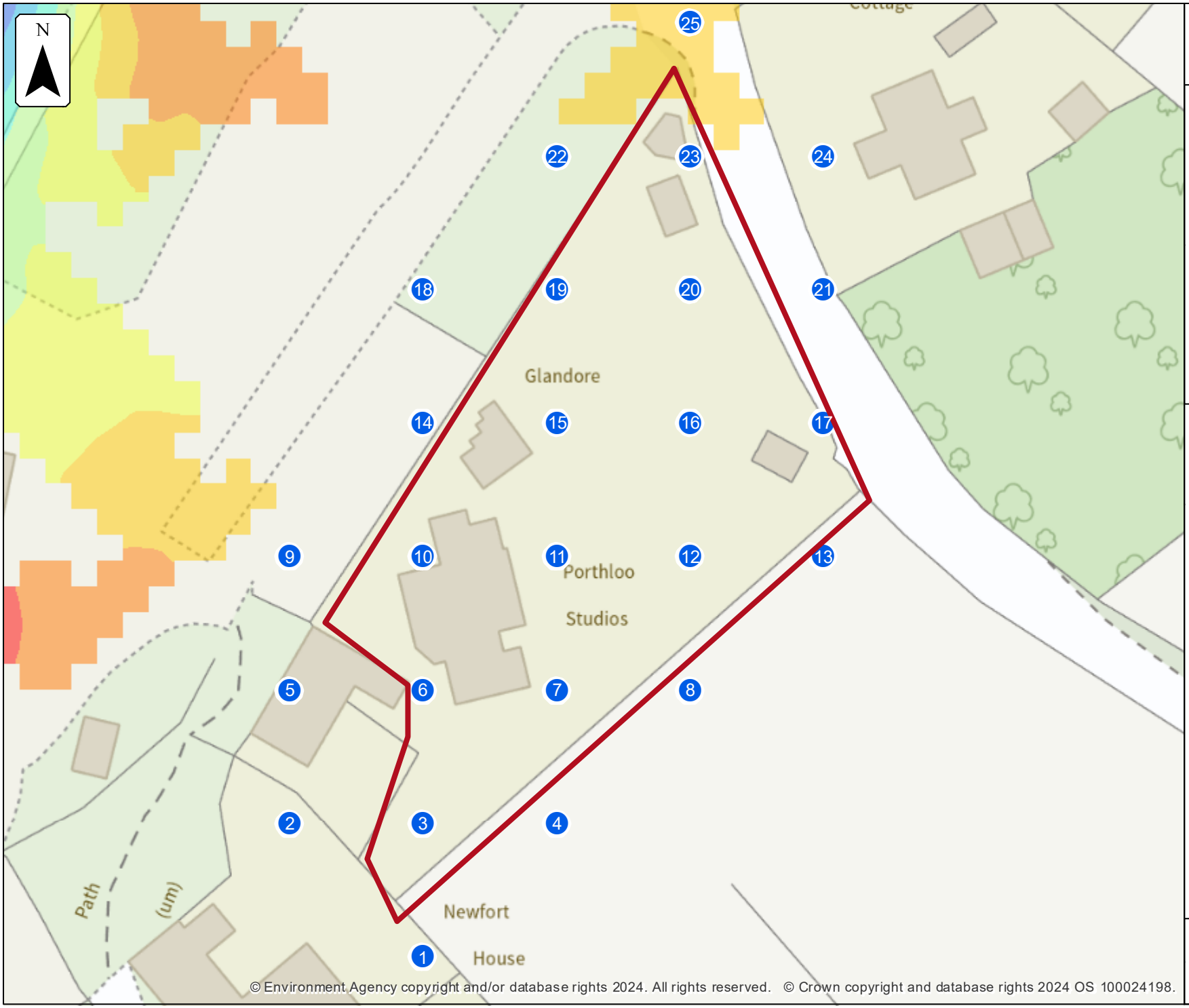
Sample point data

Defended

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	90914	11156	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	90901	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	90914	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	90927	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	90901	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	90914	11182	NoData	NoData	0.02	4.58	0.02	4.59	0.03	4.60	0.05	4.62	0.08	4.65
7	90927	11182	0.09	4.57	0.11	4.58	0.12	4.59	0.12	4.60	0.14	4.62	0.18	4.65
8	90940	11182	0.03	4.48	0.03	4.48	0.04	4.48	0.04	4.49	0.05	4.49	0.06	4.51
9	90901	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	90914	11195	NoData	NoData	0.12	4.58	0.13	4.59	0.13	4.60	0.14	4.62	0.17	4.65
11	90927	11195	0.20	4.57	0.22	4.59	0.23	4.60	0.23	4.61	0.25	4.62	0.30	4.67
12	90940	11195	0.12	4.56	0.14	4.57	0.14	4.58	0.15	4.59	0.16	4.60	0.20	4.64
13	90953	11195	0.07	4.44	0.09	4.46	0.09	4.46	0.09	4.47	0.10	4.47	0.14	4.51
14	90914	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	90927	11208	0.12	4.59	0.15	4.61	0.16	4.62	0.16	4.63	0.18	4.65	0.23	4.70
16	90940	11208	0.12	4.58	0.15	4.61	0.15	4.62	0.16	4.62	0.18	4.64	0.23	4.69

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	90953	11208	0.05	4.60	0.07	4.62	0.08	4.63	0.08	4.63	0.09	4.64	0.12	4.67
18	90914	11221	0.01	4.77	0.03	4.79	0.03	4.80	0.04	4.80	0.05	4.81	0.08	4.84
19	90927	11221	0.08	4.70	0.10	4.72	0.10	4.73	0.11	4.73	0.12	4.75	0.16	4.79
20	90940	11221	0.09	4.73	0.10	4.75	0.11	4.75	0.11	4.75	0.13	4.77	0.16	4.80
21	90953	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	90927	11234	0.11	4.80	0.13	4.82	0.14	4.83	0.14	4.83	0.16	4.85	0.19	4.88
23	90940	11234	0.11	4.80	0.13	4.83	0.14	4.83	0.15	4.84	0.16	4.85	0.20	4.89
24	90953	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	90940	11247	0.16	4.83	0.19	4.86	0.20	4.87	0.20	4.87	0.22	4.89	0.26	4.93

Data in this table comes from the Isles of Scilly. St. Mary's 2019. model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.



Environment Agency

Defences removed modelled tidal extent and height

Location (easting/northing)
90931/11200

Scale
1:500

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 4.0
- 4.0 - 4.125
- 4.125 - 4.25
- 4.25 - 4.375
- 4.375 - 4.5
- 4.5 - 4.625
- 4.625 - 4.75
- 4.75 - 4.875
- 4.875 - 5.0

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

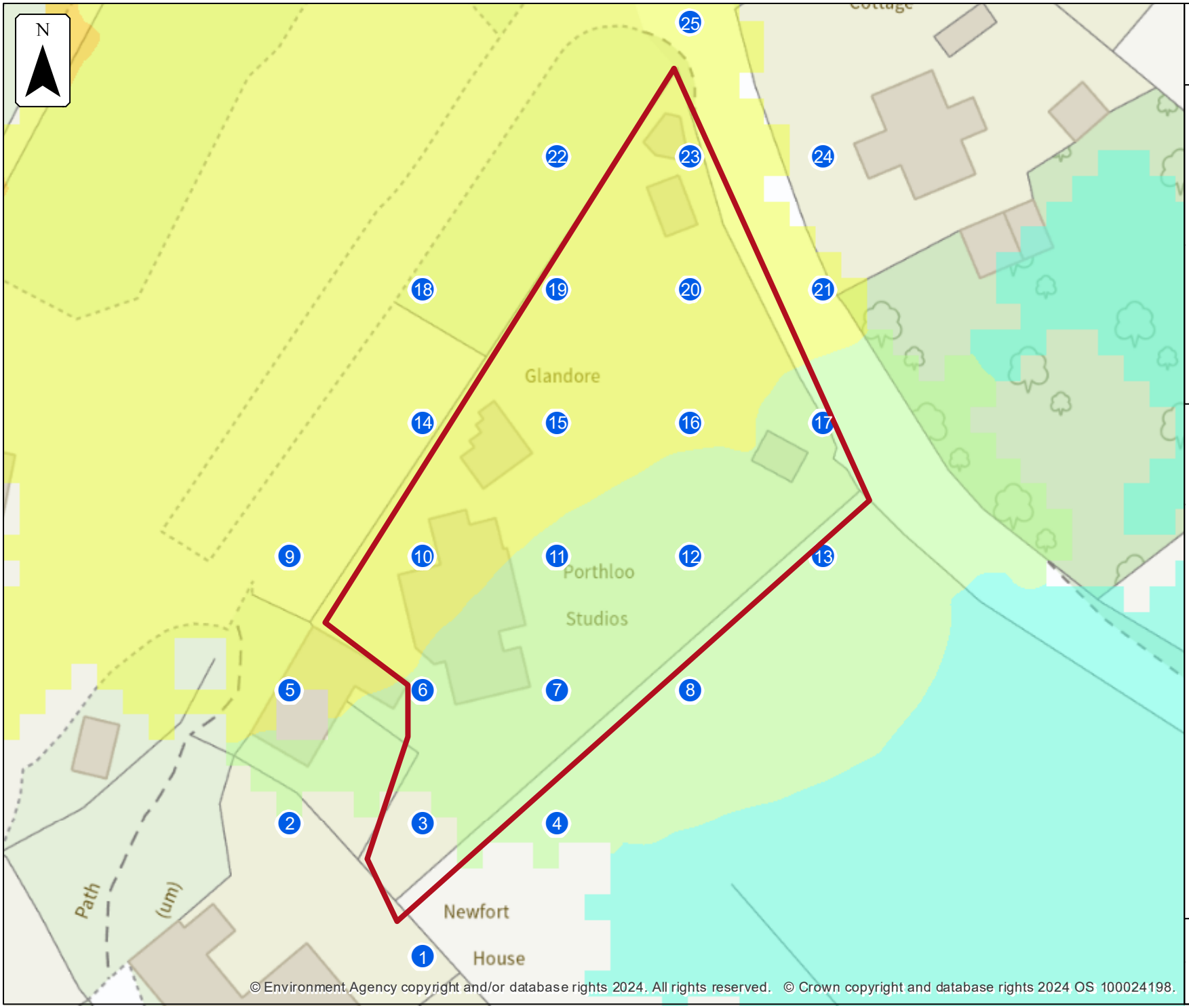
Sample point data

Defences removed

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	90914	11156	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	90901	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	90914	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	90927	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	90901	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	90914	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	90927	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
8	90940	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
9	90901	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	90914	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	90927	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
12	90940	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
13	90953	11195	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
14	90914	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	90927	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
16	90940	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	90953	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	90914	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
19	90927	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
20	90940	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	90953	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	90927	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
23	90940	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	90953	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	90940	11247	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.01	4.68

Data in this table comes from the Isles of Scilly. St. Mary's 2019. model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.



Environment Agency

Defended climate change modelled tidal extent and height

Location (easting/northing)
90931/11200

Scale
1:500

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 4.0
- 4.0 - 4.25
- 4.25 - 4.5
- 4.5 - 4.75
- 4.75 - 5.0
- 5.0 - 5.25
- 5.25 - 5.5
- 5.5 - 5.75
- 5.75 - 6.0

This map shows the 0.1% AEP +1037mm height data

0 5 10 15 20
metres

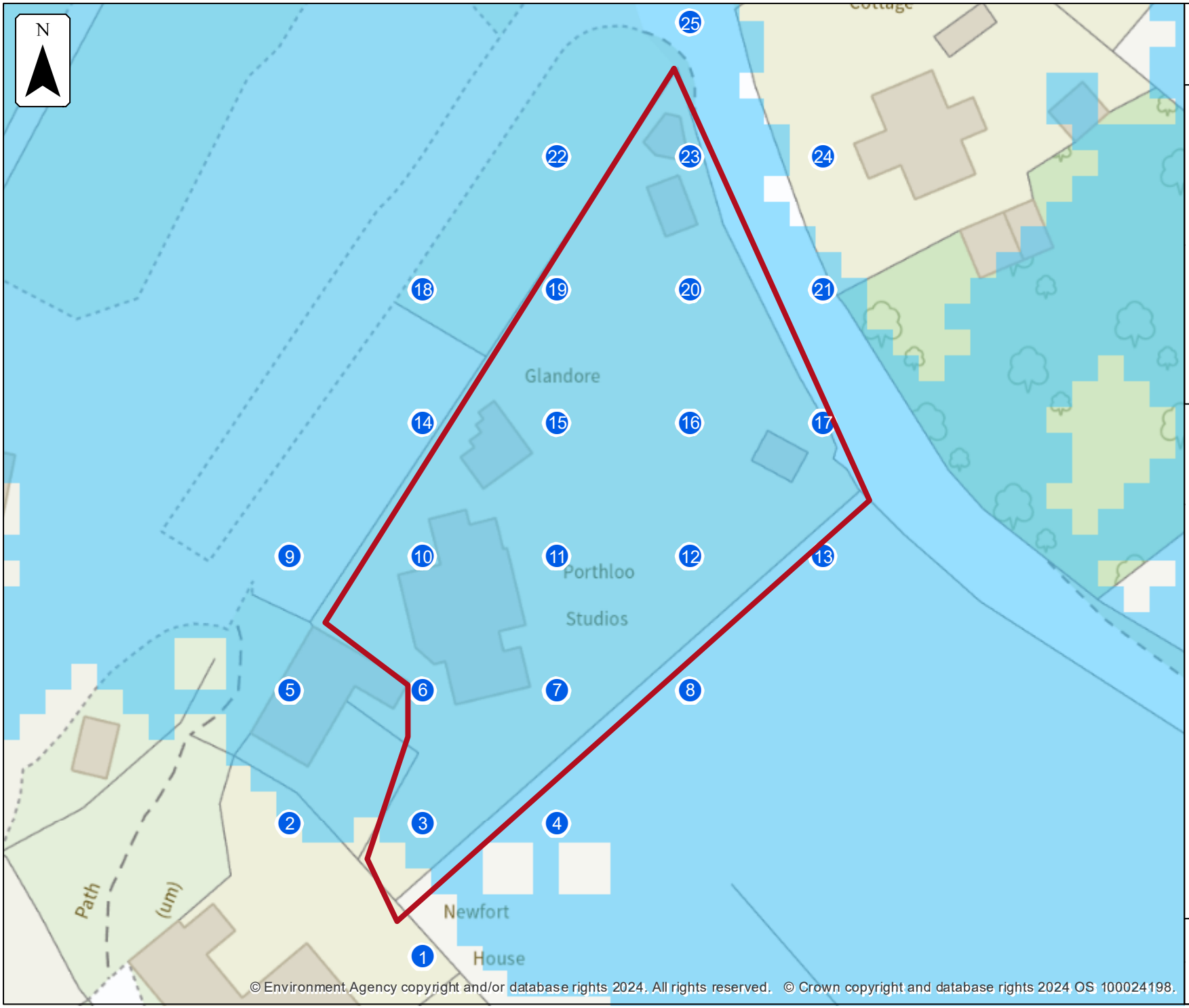
Sample point data

Defended climate change

Label	Easting	Northing	1% AEP (+351mm)		1% AEP (+812mm)		0.5% AEP (+351mm)		0.5% AEP (+812mm)		0.5% AEP (+1037mm)		0.1% AEP (+351mm)		0.1% AEP (+812mm)		0.1% AEP (+1037mm)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	90914	11156	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	90901	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	90914	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	90927	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.08	4.94
5	90901	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	90914	11182	0.10	4.67	0.21	4.78	0.12	4.69	0.24	4.81	0.31	4.88	0.15	4.72	0.29	4.86	0.40	4.97
7	90927	11182	0.19	4.67	0.28	4.76	0.21	4.69	0.31	4.78	0.37	4.84	0.24	4.71	0.35	4.82	0.46	4.94
8	90940	11182	0.07	4.52	0.13	4.57	0.08	4.53	0.15	4.59	0.21	4.66	0.10	4.54	0.19	4.63	0.34	4.79
9	90901	11195	NoData	NoData	0.09	4.83	NoData	NoData	0.12	4.86	0.22	4.96	0.03	4.77	0.18	4.92	0.35	5.10
10	90914	11195	0.18	4.67	0.30	4.81	0.19	4.70	0.33	4.85	0.43	4.94	0.22	4.73	0.40	4.91	0.57	5.08
11	90927	11195	0.32	4.69	0.42	4.79	0.34	4.71	0.44	4.81	0.51	4.88	0.36	4.74	0.49	4.86	0.61	4.99
12	90940	11195	0.22	4.65	0.30	4.74	0.23	4.67	0.32	4.76	0.38	4.82	0.26	4.70	0.36	4.80	0.48	4.92
13	90953	11195	0.16	4.53	0.26	4.64	0.18	4.55	0.29	4.66	0.35	4.72	0.21	4.59	0.33	4.70	0.46	4.83
14	90914	11208	NoData	NoData	NoData	NoData	NoData	NoData	0.11	4.89	0.17	4.95	NoData	NoData	0.15	4.92	0.29	5.07
15	90927	11208	0.25	4.72	0.36	4.83	0.27	4.74	0.39	4.86	0.47	4.94	0.30	4.77	0.44	4.91	0.58	5.05
16	90940	11208	0.25	4.71	0.35	4.81	0.27	4.73	0.38	4.84	0.45	4.91	0.30	4.76	0.43	4.89	0.55	5.01
17	90953	11208	0.13	4.68	0.21	4.76	0.15	4.70	0.23	4.78	0.29	4.84	0.17	4.72	0.27	4.82	0.38	4.93
18	90914	11221	0.09	4.85	0.17	4.93	0.10	4.86	0.19	4.95	0.26	5.02	0.13	4.89	0.24	5.00	0.36	5.13
19	90927	11221	0.18	4.80	0.28	4.90	0.20	4.82	0.31	4.93	0.37	4.99	0.23	4.85	0.35	4.97	0.47	5.09
20	90940	11221	0.17	4.81	0.27	4.91	0.19	4.83	0.29	4.93	0.35	4.99	0.22	4.86	0.33	4.98	0.43	5.07

Label	Easting	Northing	1% AEP (+351mm)		1% AEP (+812mm)		0.5% AEP (+351mm)		0.5% AEP (+812mm)		0.5% AEP (+1037mm)		0.1% AEP (+351mm)		0.1% AEP (+812mm)		0.1% AEP (+1037mm)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
21	90953	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.06	5.03	NoData	NoData	0.05	5.02	0.09	5.09
22	90927	11234	0.21	4.90	0.30	5.00	0.23	4.92	0.33	5.02	0.39	5.08	0.26	4.95	0.37	5.06	0.47	5.16
23	90940	11234	0.21	4.91	0.31	5.00	0.23	4.92	0.34	5.03	0.39	5.08	0.26	4.96	0.38	5.07	0.46	5.15
24	90953	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	90940	11247	0.28	4.95	0.39	5.06	0.30	4.97	0.42	5.09	0.48	5.15	0.34	5.01	0.46	5.13	0.55	5.22

Data in this table comes from the Isles of Scilly. St. Mary's 2019. model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.



Environment Agency

Defences removed climate change modelled tidal extent and height

Location (easting/northing)
90931/11200

Scale
1:500

Created
23 May 2024

Model name
Isles of Scilly. St. Mary's 2019.

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 5.0
- 5.0 - 5.125
- 5.125 - 5.25
- 5.25 - 5.375
- 5.375 - 5.5
- 5.5 - 5.625
- 5.625 - 5.75
- 5.75 - 5.875
- 5.875 - 6.0

This map shows the 0.1% AEP +1037mm height data

0 5 10 15 20
metres

Sample point data

Defences removed climate change

Label	Easting	Northing	0.5% AEP (+351mm)		0.5% AEP (+812mm)		0.5% AEP (+1037mm)		0.1% AEP (+351mm)		0.1% AEP (+812mm)		0.1% AEP (+1037mm)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	90914	11156	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	90901	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	90914	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.16	5.14
4	90927	11169	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.28	5.14
5	90901	11182	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.12	5.14
6	90914	11182	NoData	NoData	0.01	4.56	0.13	4.70	NoData	NoData	0.02	4.58	0.57	5.14
7	90927	11182	NoData	NoData	0.02	4.49	0.23	4.70	NoData	NoData	0.02	4.50	0.66	5.14
8	90940	11182	NoData	NoData	NoData	NoData	0.26	4.70	NoData	NoData	NoData	NoData	0.69	5.14
9	90901	11195	NoData	NoData	0.02	4.77	0.09	4.83	0.00	4.74	0.04	4.78	0.39	5.14
10	90914	11195	NoData	NoData	0.12	4.59	0.22	4.74	0.01	4.40	0.14	4.62	0.62	5.14
11	90927	11195	0.01	4.38	0.10	4.47	0.33	4.70	0.07	4.44	0.11	4.48	0.77	5.14
12	90940	11195	NoData	NoData	0.03	4.47	0.26	4.70	NoData	NoData	0.04	4.48	0.70	5.14
13	90953	11195	NoData	NoData	0.01	4.37	0.33	4.70	NoData	NoData	0.04	4.41	0.77	5.14
14	90914	11208	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.36	5.14
15	90927	11208	0.01	4.48	0.01	4.48	0.23	4.70	0.01	4.48	0.02	4.49	0.67	5.14
16	90940	11208	NoData	NoData	0.03	4.49	0.24	4.70	0.02	4.48	0.03	4.49	0.68	5.14

Label	Easting	Northing	0.5% AEP (+351mm)		0.5% AEP (+812mm)		0.5% AEP (+1037mm)		0.1% AEP (+351mm)		0.1% AEP (+812mm)		0.1% AEP (+1037mm)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	90953	11208	NoData	NoData	0.00	4.49	0.15	4.70	0.00	4.48	0.01	4.49	0.59	5.14
18	90914	11221	NoData	NoData	NoData	NoData	0.08	4.84	NoData	NoData	0.00	4.76	0.37	5.14
19	90927	11221	0.01	4.63	0.01	4.63	0.08	4.70	0.01	4.63	0.02	4.64	0.51	5.14
20	90940	11221	NoData	NoData	NoData	NoData	0.06	4.70	NoData	NoData	0.02	4.66	0.50	5.14
21	90953	11221	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.13	5.14
22	90927	11234	0.01	4.70	0.01	4.70	0.08	4.77	0.00	4.70	0.02	4.71	0.45	5.14
23	90940	11234	0.01	4.70	0.01	4.70	0.06	4.75	0.01	4.70	0.02	4.71	0.45	5.14
24	90953	11234	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	90940	11247	0.04	4.71	0.04	4.71	0.10	4.76	0.04	4.71	0.05	4.71	0.47	5.14

Data in this table comes from the Isles of Scilly. St. Mary's 2019. model.
Height values are shown in mAOD, and depth values are shown in metres.
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Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

Find out more about flood risk activity permits

Help and advice

Contact the Devon Cornwall and the Isles of Scilly Environment Agency team at dcisenquiries@environment-agency.gov.uk for:

- more information about getting a product 5, 6, 7 or 8
- general help and advice about the site you're requesting data for

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