

Proposed Granny Flat
Heronsreach
The Green,
Millom,
Cumbria,
LA18 5JA.

Flood Risk Assessment

Ref 4/23/2166/0F1

November 2023

Revision 4

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Contents

Chapters And Appendices

1.0 Introduction

2.0 Scope

3.0 Site Summary

- 3.1 Site Description
- 3.2 Proposed Development
- 3.3 Flood Defence Measures

4.0 National And Local Policy

- 4.1 The National Planning Policy Framework Requirements
- 4.2 EA Standing Advice
- 4.3 SFRA Principles

5.0 Climate Change

- 5.0 Appendix 1

6.0 Flood Depths and Flood Zones

- 6.1 Strategic Flood Risk Assessment (SFRA)
- 6.2 EA Flood Risk Maps
- 6.3 Flood Level Data
- 6.4 Sources Of Flood Risk
- 6.5 Location of Existing Flood Defences
- 6.6 Emergency Planning

7.0 Surface Water Management

- 7.1 Attenuation Requirements

8.0 The Sequential Test

9.0 The Exceptions Test

10.0 Building Design

11.0 Conclusions

1.0 Introduction

This development is for use of and elderly parent of the property's (Heronsreach) owner who is partially sighted and in need of care but wishes to retain his independence. It is proposed to erect a granny flat annexe and an extension to an existing garage within the curtilage of Heronsreach, The Green, LA185JA, being a private dwelling with approx. 1,5 ha paddock adjoining. This Flood Risk Assessment (FRA) is for the proposed site at Heronsreach which is situated in Flood Zone 3.

2.0 Scope

This FRA is prepared for the purposes of providing a generalised indication of the potential flood risk to the site, and to identify whether there are any flooding or surface water management issues relating to the development of the site that may warrant further consideration.

The report is based on information including the Strategic Flood Risk Assessments (SFRA), EA Flood Maps, and consultations with the EA and LPA

3.0 Site Summary

3.1 Site Description

The site is in a rural area at The Green near Millom. It is a bungalow with a smallholding and a detached garage. There has been no development on the site since the existing bungalow was built in the early 1990's.

3.2 Proposed Development

The proposed granny flat will have a footprint of 64.12m² and the proposed garage extension 24.1m² which all adjoins the existing detached garage.

The accompanying block plan shows the ground levels and floor levels of the existing and proposed buildings, along with the base of Black Beck.

The ground falls away generally from the beck edge southward and eastward towards the tidal plane. The proposed granny flat floor level will be no lower than the existing dwelling. This allows for the drainage to the septic tank, cover to same and a minimum 150mm to damp proof course.

All the building construction is to be cavity wall concrete block work.

The area between the annexe and the septic tank is to be raised locally to cover drainage and provide an access path to the annexe at a higher level.

All other ground around the existing bungalow etc falls south and eastward to a lower flood plain.

3.2 Flood Defence Measures

Measures already in place to limit flood water entering the site are as follows;

- A stone and cement wall which edges Black Beck, which follows the beck level at 1.6m high above the beck bottom, to the south side abutting the existing earth and stone bank flood defence.
- An access bridge of galvanised universal beam and concrete construction, with its deck level at 1.9m above beck bottom. The previously mentioned wall stepping up to that level.
- A stone and cement wall starting on the west side of the bridge at 200mm higher than the the deck and continuing around the bungalow west boundary which steps down in height of approx. 1m above field level. This section of the wall diverts flood water from the recent known overspill point to the lower ground without entering the site of the dwelling.

- The ground on the site is free draining and permeable as shown from the percolation tests carried out for the septic tank drainage field and rainwater soakaways, therefore the impact from the rainwater will be minimal.
- There are no plans to form concrete hard standings etc

The garages will always be susceptible to flooding, being 710mm lower at it recommended flood boards used to defend this event and vehicles removed to safer ground and all oils, paints, pesticides and other contaminants stored above bench height.

Electrical works, sockets and switches in the granny flat to be located between 450mm and 1200mm above floor level as per the building regulation requirements and all electrical switches in the garage to located 1200mm high and wired top down.

There is no planned limit to the lifespan of use as a granny flat and will always be tied to the main dwelling in family use.

4.0 National and Local Policy

4.1 Planning Practice Guidance

This development was prepared with advice from the Cumbria Development Design Guide, with flooding advice from pages 71 to 74.

4.2 EA Standing Advice

Environment Agency Flood Risk Standing Advice is designed to help;

- Find out whether an application is a lower risk
- Decide when to consult the EA
- Determine what the consultation should contain
- Understand how to make a decision on a lower risk site
- Know what information is required to make a flood risk

4.3 SFRA Principles

The Copeland Flood Risk Assessment (SFRA) has been carried out to meet the following key objectives:

- Collate all known sources of flooding – including tidal, river, surface water (local drainage), sewers and groundwater, that may affect existing and/or future development within the Borough, and information available on where coastal erosion may increase flood risk
- Identify areas that have a ‘low’, ‘medium’ and ‘high’ probability of flooding -in accordance with Planning Policy Statement 25 (PPS25).
- Recommend appropriate land uses within flood affected areas – in accordance with the PPS25 Sequential Test that will not unduly place people or property at risk of flooding.
- Recommend possible flood mitigation solutions – that may be integrated into the design (by the developer) in areas where flood risk has been identified as a potential Copeland Borough Council STRATEGIC FLOOD RISK ASSESSMENT (SFRA) August 2007 iii constraint to future development, to minimise the risk to property and life should a flood occur (in accordance with the PPS25 Exception Test).

5.0 Climate Change

See Appendix 1 for Modelled node locations data

6.0 Flood Depths and Flood Zones

6.1 Strategic Flood Risk Assessment (SFRA)

Zone 3b (Functional Floodplain) - Areas subject to flooding up to (and including) once in every 20 years on average have been identified as Zone 3b Functional Floodplain. These areas are subject to relatively frequent flooding, which may include fast flowing and/or deep water. Whilst it may be impractical to refuse all future regeneration within some of these areas (especially those which are already developed), careful consideration must be given to future sustainability, planning policies have been developed accordingly.

Several areas are at risk of flooding at across the Borough. The risk of flooding posed to properties arises from a number of sources including river and coastal flooding, sewer flooding and localised run-off. A planning solution to flood risk management should be sought wherever possible, steering vulnerable development away from areas affected by flooding in accordance with the PPS25 Sequential Test. Specific planning recommendations have been provided for all urban centres within the Borough

6.2 EA Flood Risk Maps

See Appendix 1

6.3 Flood Level Data

See Appendix 1

6.4 Sources Of Flood Risk

See Appendix 1

6.5 Location of Existing Flood Defences

See Appendix 1

6.6 Emergency Planning

Emergency planning is a critical element of any sustainable flood risk management solution. Liaison with both the Environment Agency and emergency services is imperative. The Environment Agency monitor river levels within the main rivers affecting the Borough and based upon weather predictions provided by The Met Office, make an assessment of the anticipated maximum water level that is likely to be reached within the proceeding hours (and/or days).

Where these predicted water levels are expected to result in the inundation of populated areas the Environment Agency will issue a series of flood warnings within defined flood warning areas, encouraging residents to take action to avoid damage to property in the first instance. As water levels rise and begin to pose a risk to life and/or livelihood, it is the responsibility of the Council to coordinate the evacuation of residents.

This evacuation will be supported and facilitated by the emergency services. It is essential that a robust plan is in place that clearly sets out (as a minimum):

- Roles and responsibilities; Restricted to those urban areas situated within Environment Agency flood warning zones Copeland Borough Council STRATEGIC FLOOD RISK ASSESSMENT (SFRA) August 2007

- paths of communication; evacuation routes; community centres to house evacuated residents; contingency plans in case of loss of power and/or communication. Cumbria County Council, who is the body responsible for the Emergency Planning during major events, has a long established Multi-Agency Flooding Response Plan. This plan covers the co-ordination of an emergency i.e. receptor centres, welfare, etc. These plans are exercised regularly and have stood the test of real events. Emergency planning in Copeland is complicated by the rural (and hence dispersed) nature of the population. Apart from the Key Service Centres, the Borough comprises relatively small villages and settlements spread out over a wide area. During a Borough-wide flood event, the council and other Emergency Services could find it difficult to provide assistance to large portions of the population. Warning times are short, travel distances are long and rural roads may be cut off or damaged by flooding. In order to manage a flood related emergency event as effectively as possible, pre-planning is essential.

The Council should:

- Identify villages or village clusters most at risk (isolation, population, vulnerability)
- Install a local emergency response capability/plan for those centres which are unlikely to be reached by council staff or emergency services.
- Develop a post-event plan to manage the aftereffects of the flood.

At County level, the Emergency Planning section has acknowledged that in certain areas the emergency response may be limited and that it is unfeasible to provide emergency cover for all of the small villages and settlements. Consequently, they are now in the process of implementing community resilience measures that will come into effect during an emergency event, which would include flooding. One measure, for example, involves a nominated person knocking on the door of known vulnerable people in the area on a receipt of a flood warning. ‘Dry’ access (i.e. above flood level) should be sought wherever possible as part of future planning applications to ensure that all residents can be safely evacuated in times of flood. As part of their long term strategy for road maintenance and improvement, the County Council progressively should seek opportunities to raise critical evacuation routes above the greater of the 1% AEP + 20% flow (i.e. climate change) flood level if feasible. As an absolute minimum, ‘safe’ access must be assured during the 1% AEP (100 year) fluvial flood level, defined with due consideration to the emerging Defra research presented in “Flood Risk to People”. It is highlighted that road raising must not have a detrimental impact upon flow routes and/or the effectiveness of floodplain storage. Residents in areas affected by flooding on a more frequent basis (e.g. in the 5% (20 year) event) are likely to be the most vulnerable as water levels rise. These areas will flood more frequently than other areas of the Borough, and are likely to be the first cut off from safe evacuation routes. Another problem for Copeland Borough Council is that it is responsible for emergency planning in the Lake District National Park, however spatial planning within the National Park is carried out by the Lake District National Park Authority. The impact of this is that, during a flood event, the effectiveness of Copeland Borough Council to evacuate people to safe places is influenced by the decisions of another authority. There is a clear need for both parties to work together so that the planning decisions made do not adversely affect the ability of Copeland Borough Council to provide an adequate emergency response

7.0 Surface Water Management

7.1 Attenuation requirements

Surface water run off shall be collected in soakaway crates located at each corner of the building.

8.0 The Sequential Test

The Sequential Test PPS25 advocates a sequential approach that will guide the planning decision making process (i.e. the allocation of sites). In simple terms, this requires planners to seek to allocate sites for future development within areas of lowest flood risk in the initial instance. Only if it can be demonstrated that there are no suitable sites within these areas should alternative sites (i.e. within areas that may potentially be at risk of flooding) be contemplated. This is referred to as the Sequential Test. As an integral part of the sequential approach, PPS25 stipulates permissible development types. This considers both the degree of flood risk posed to the site, and the likely vulnerability of the proposed development to damage (and indeed the risk to the lives of the site tenants) should a flood occur. This development is an extension of a property and not a large development.

9.0 The Exceptions Test

Many towns within England are situated adjacent to rivers, and are at risk of flooding. The future sustainability of these communities relies heavily upon their ability to grow and prosper. PPS25 recognises that, in some areas, including Copeland, restricting residential development from areas designated as Zone 3a High Probability may heavily compromise the viability of existing communities. For this reason, PPS25 provides an Exception Test. Where a local planning authority has identified that there is a strong planning based argument for a development to proceed that does not meet the requirements of the Sequential Test, it will be necessary for the Council to demonstrate that the Exception Test can be satisfied.

For the Exception Test to be passed it must be demonstrated that:

- The development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared. If the DPD has reached the 'submission' stage, the benefits of the development should contribute to the Core Strategy's Sustainability Appraisal
- The development should be on developable, previously developed land or if it is not on previously developed land, that there are no reasonable alternative sites on previously developed land
- A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and where possible, will reduce flood risk overall."

10.0 Conclusion

The extension will be above any flood from the data and modelling supplied. Any flood water dissipates to the surrounding fields and is not trapped and held to raise its level.

This extension brings minimal impact to the environment and its purpose is to care for the elderly at home and not in social care.

Appendix 1

Flood risk assessment data



Location of site: 318392 / 484171 (shown as easting and northing coordinates)

Document created on: 19 September 2023

This information was previously known as a product 4.

Customer reference number: AYXUJE6EGXNP

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



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

how to find information about surface water and other sources of flooding

information on the models used

definitions for the terminology used throughout

flood map for planning (rivers and the sea)

flood defences and attributes

information to help you assess if there is a reduced flood risk from rivers and the sea because of defences

modelled data

climate change modelled data

information about strategic flood risk assessments

information about this data

information about flood risk activity permits

help and advice

Not included in this document

This document does not include a Flood Defence Breach Hazard Map.

If your location has a reduced flood risk from rivers and sea because of defences, you need to request a Flood Defence Breach Hazard Map and information about the level of flood protection offered at your location from the Cumbria and Lancashire Environment Agency team at inforequests.cmlnc@environment-agency.gov.uk. This information will only be available if modelling has been carried out for breach scenarios.

Include a site location map in your request.

Information that's unavailable

This document **does not** contain:

historic flooding

We do not have historic flooding data for this location.

Please note that:

flooding may have occurred that we do not have records for

flooding can come from a range of different sources

we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:
surface water
ordinary watercourses
reservoirs

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Black Beck 2006

Scenario(s): Defences removed fluvial, defences removed climate change fluvial

Date: 8 May 2006

Model name: Black Beck 2008

Scenario(s): No defences exist fluvial

Date: 4 February 2009

Model name: Duddon Sands_Tidal 2012

Scenario(s): Defended tidal, defences removed tidal, defended climate change tidal, defences removed climate change tidal

Date: 1 July 2013

These models contain the most relevant data for your area of interest.

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 occurring 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. See Appendix 2 & 3 for AOD.

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

This data is updated on a quarterly basis as better data becomes available



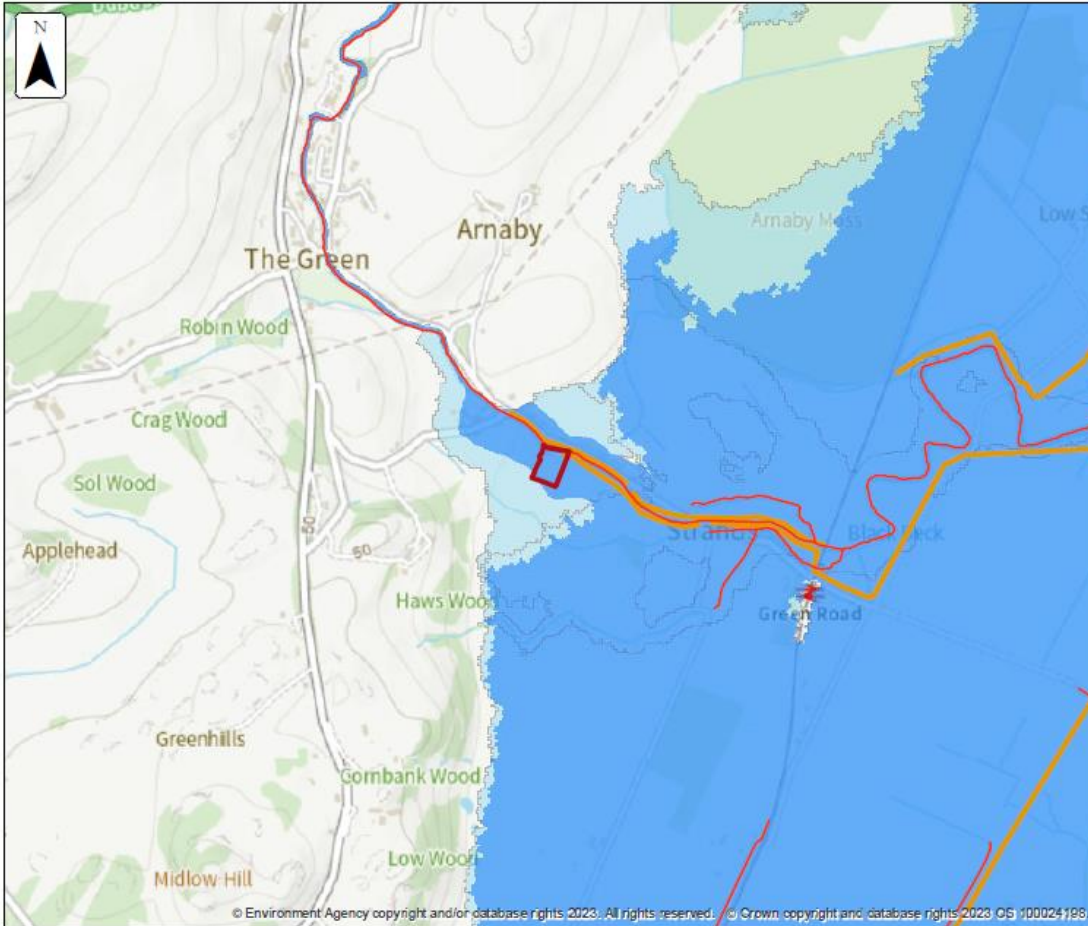
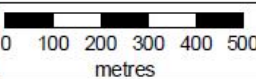
Flood map for planning

Location (easting/northing)
318392/484171

Scale
1:10,000

Created
19 Sep 2023

-  Selected area
-  Main river
-  Flood defence
-  Flood zone 3
-  Flood zone 2



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Flood defences and attributes

The flood defences map shows the location of the flood defences present.

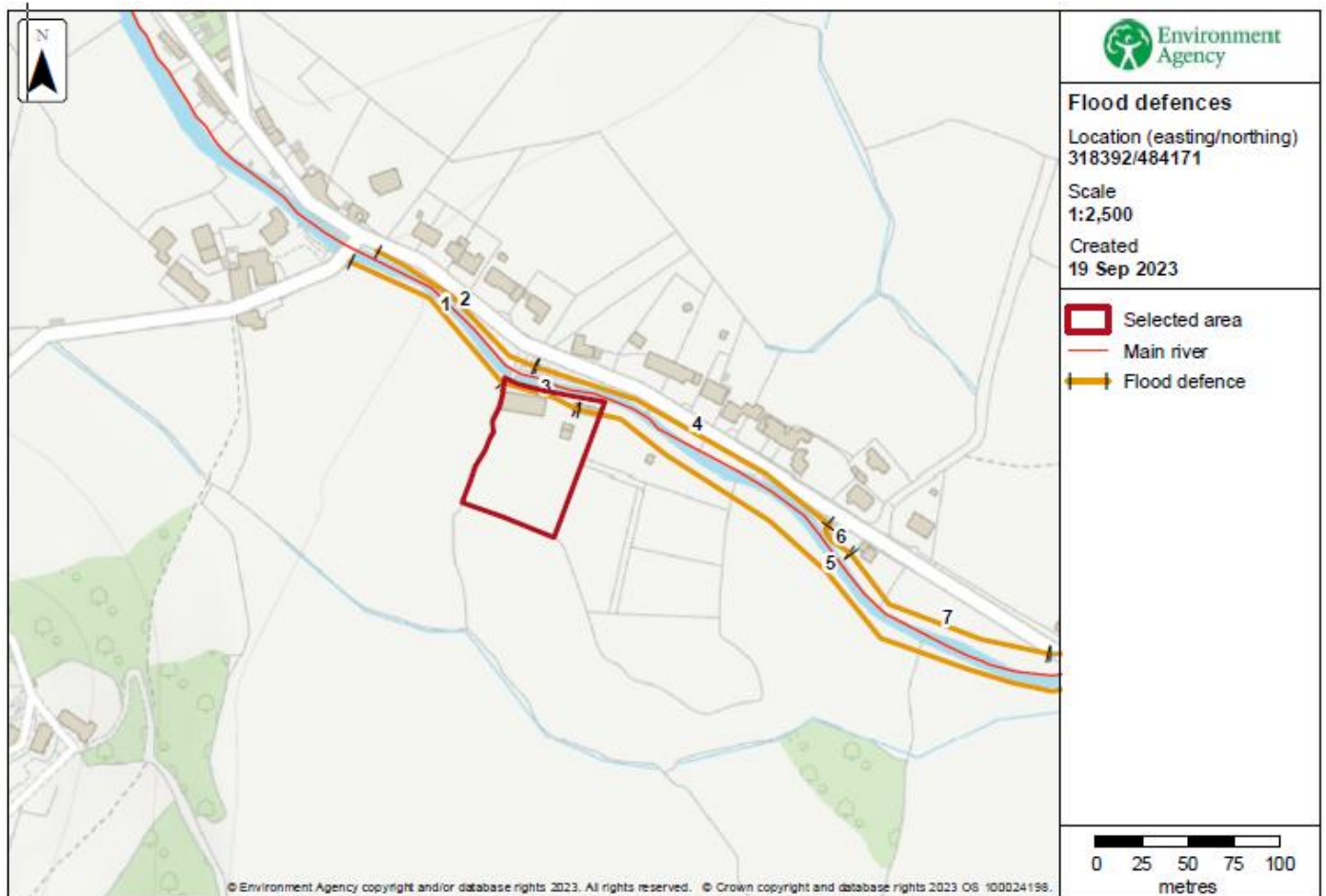
The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is In mAOD which is the metres above the mean sea level. (See Appendix 2 & 3)

It's important to remember that flood defence data may not be updated on a regular basis.

The information here is based on the best available data.

Use this information:

- To help you assess if there is a reduced flood risk for this location because of defences
- With any information in the modelled data section to find out the impact of defences on flood risk



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	103591	Embankment	100	Fair	8.68	9.66	8.68
2	136436	Embankment	100	Good	10.10	10.10	10.10
3	136437	Wall	100	Fair	10.60	10.60	10.60
4	136435	Wall	100	Fair	8.67	9.02	8.67
5	34761	Embankment	100	Fair	6.69	8.01	6.69
6	137805	Wall	100	Fair	8.45	8.45	8.45
7	89617	Embankment	100	Fair	7.04	9.05	7.04

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- Outline maps showing the area at risk from flooding in different modelled scenarios
- Modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- Map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

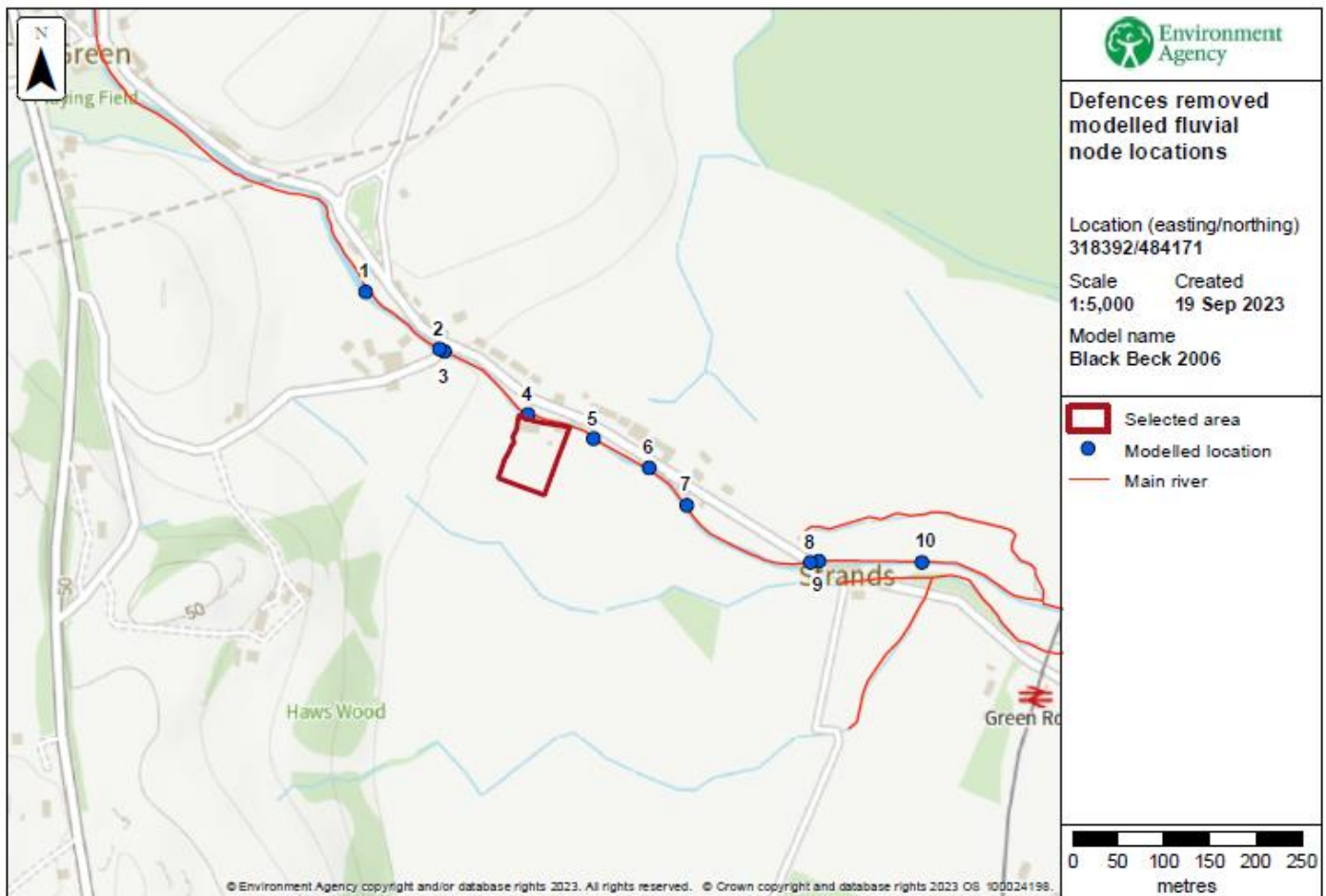
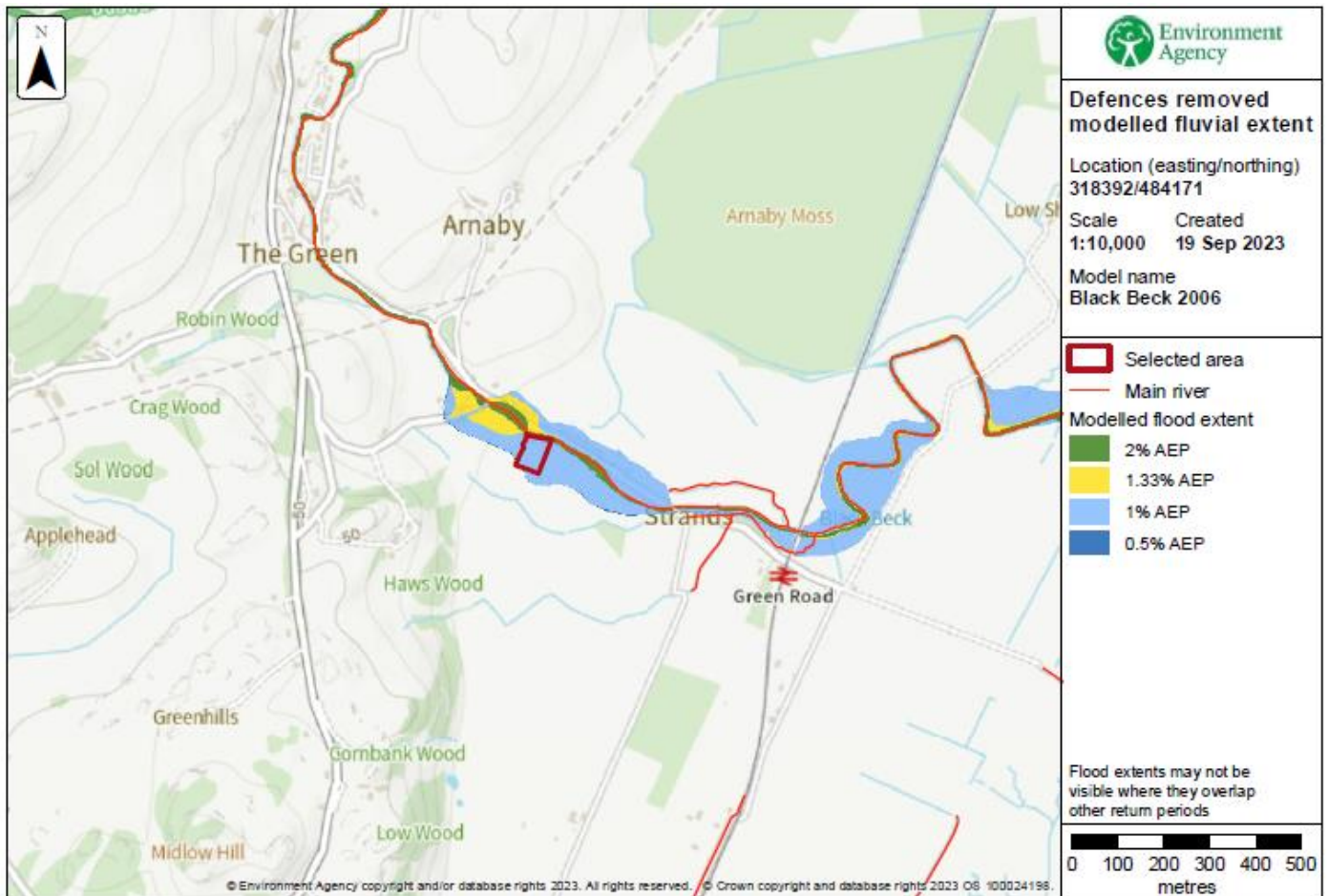
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- Defended modelled tidal: risk of flooding from the sea where there are flood defences
- Defences removed modelled tidal: risk of flooding from the sea where flood defences have been removed
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change
- Defended climate change modelled tidal: risk of flooding from the sea where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled tidal: risk of flooding from the sea where flood defences have been removed, including estimated impact of climate change

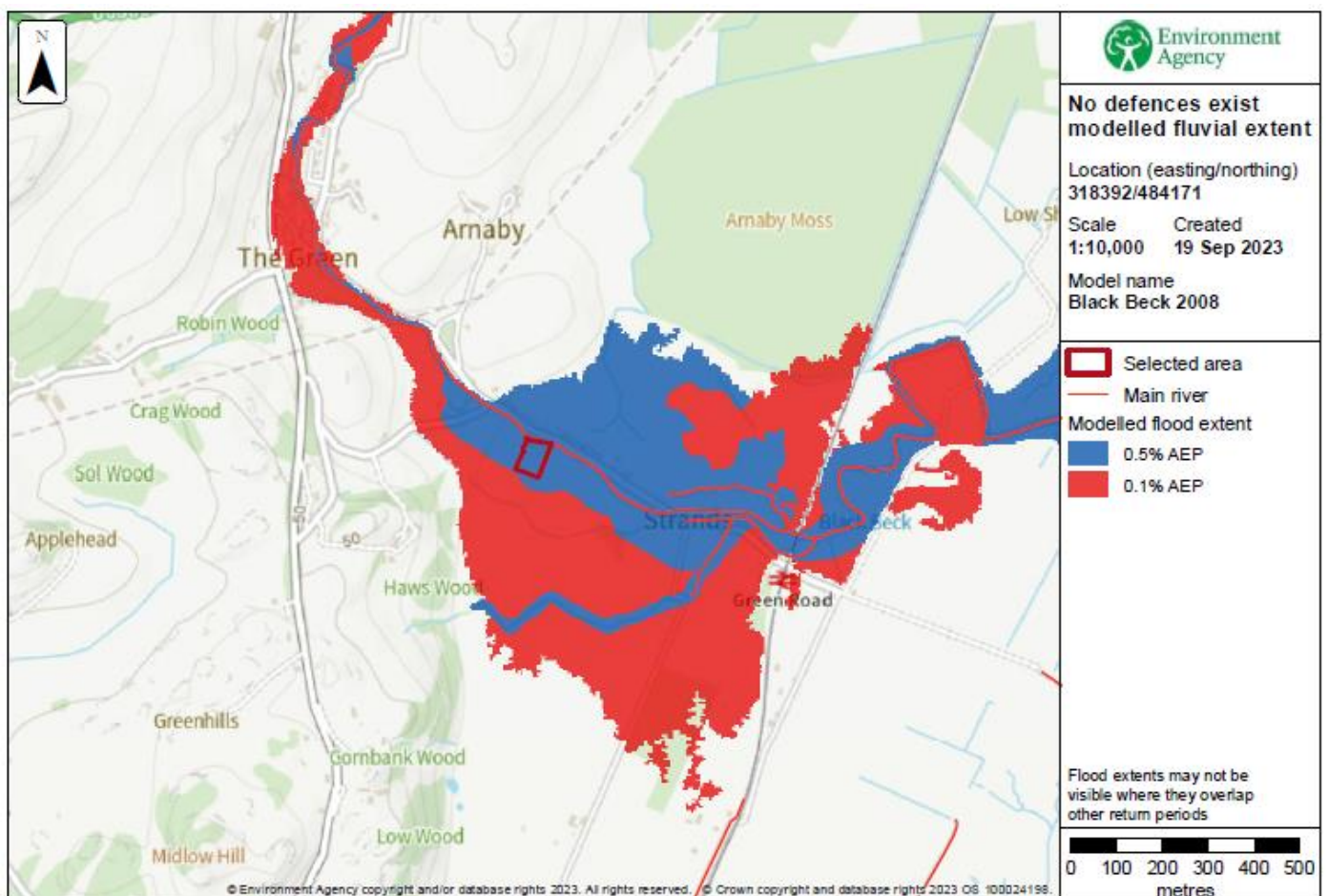


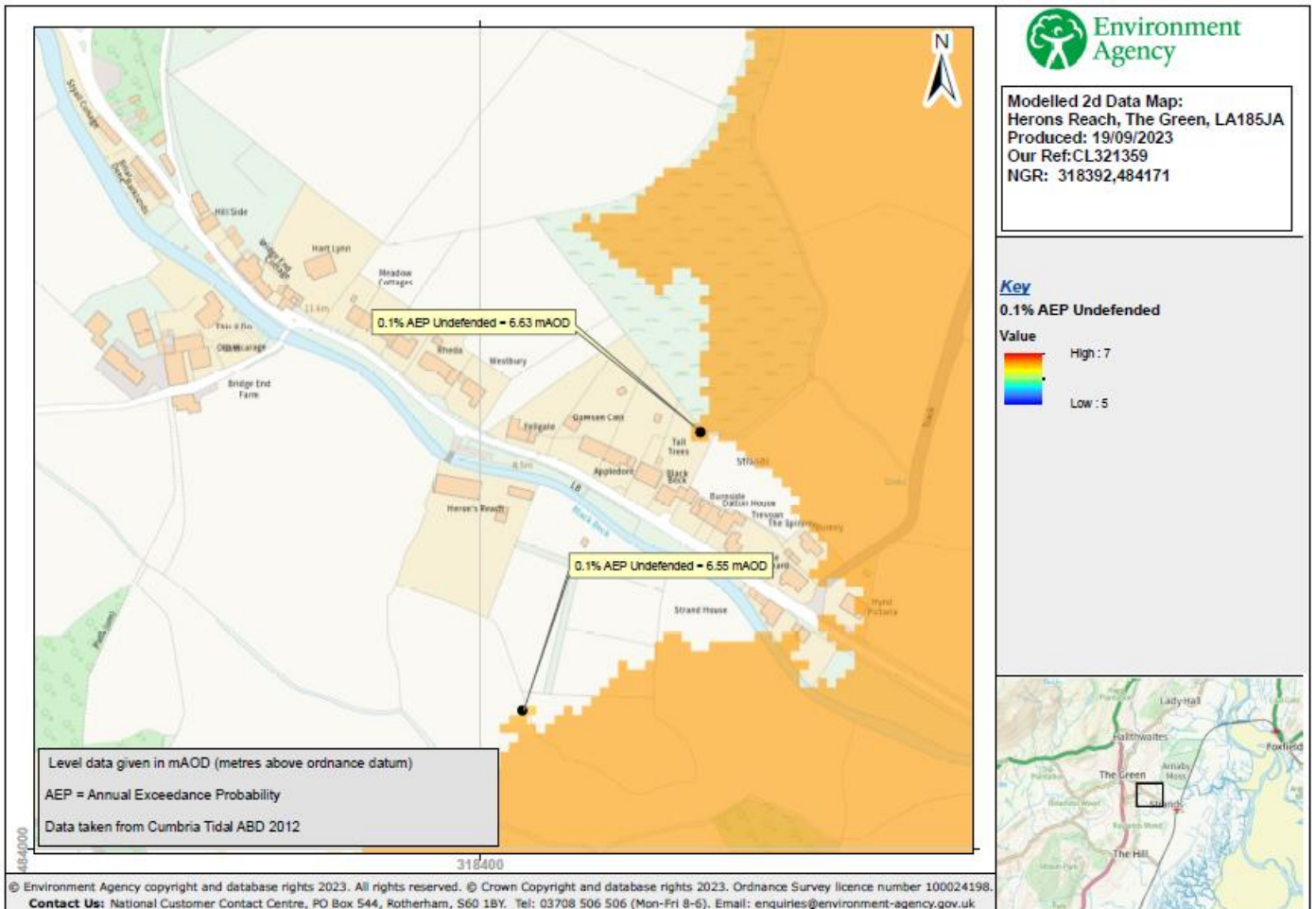
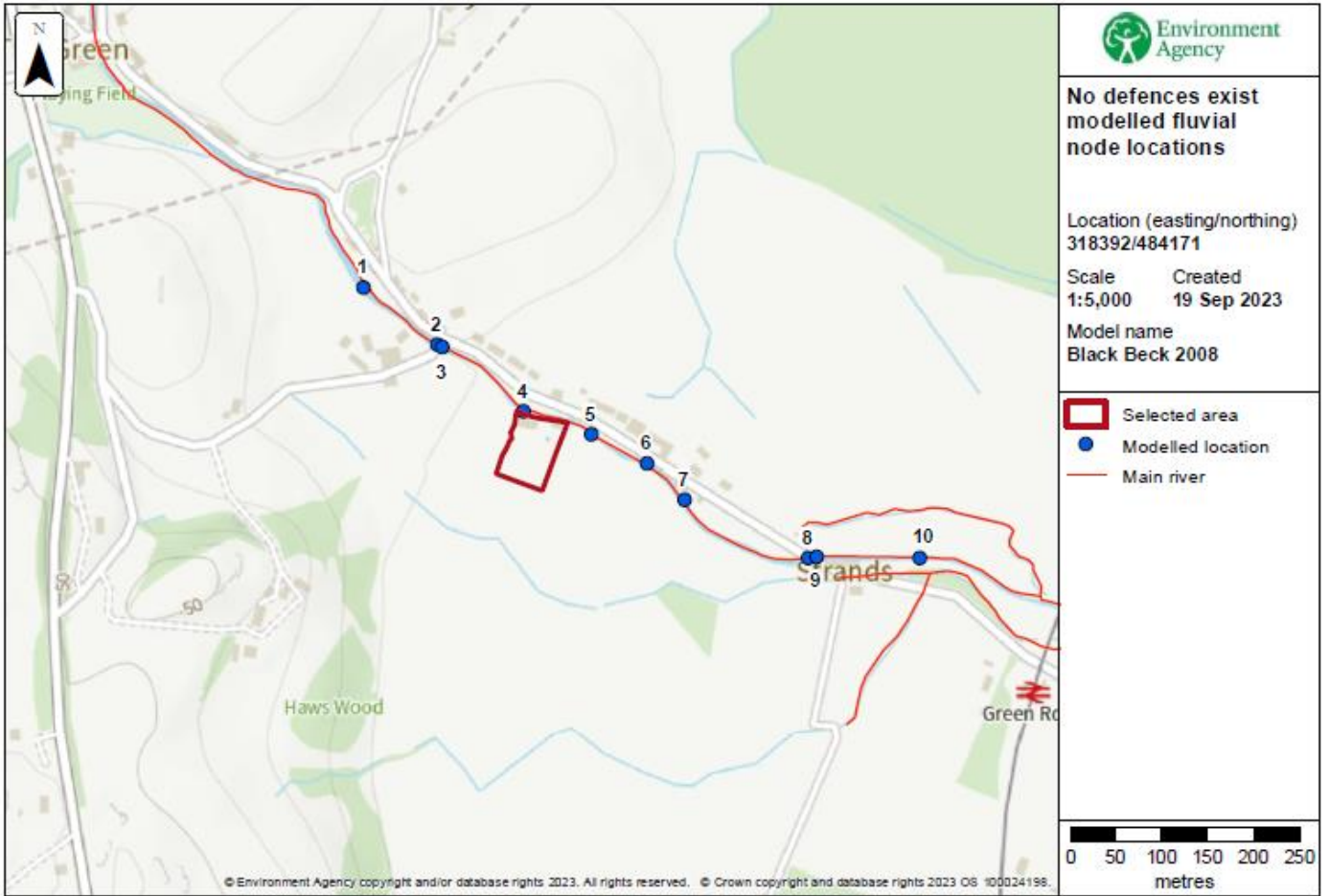
Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+20%)	
				Level	Flow
1	65957	318210	484348	12.29	27.93
2	249311	318291	484285	11.51	27.98
3	208993	318296	484282	11.15	27.98
4	348042	318387	484214	10.09	27.98
5	343004	318459	484188	8.39	24.46
6	228764	318520	484155	7.64	10.93
7	331184	318560	484115	7.13	7.12
8	272726	318696	484053	5.91	5.55
9	80803	318705	484054	5.84	5.55
10	168183	318817	484053	4.96	5.55

Data in this table comes from the Black Beck 2006 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



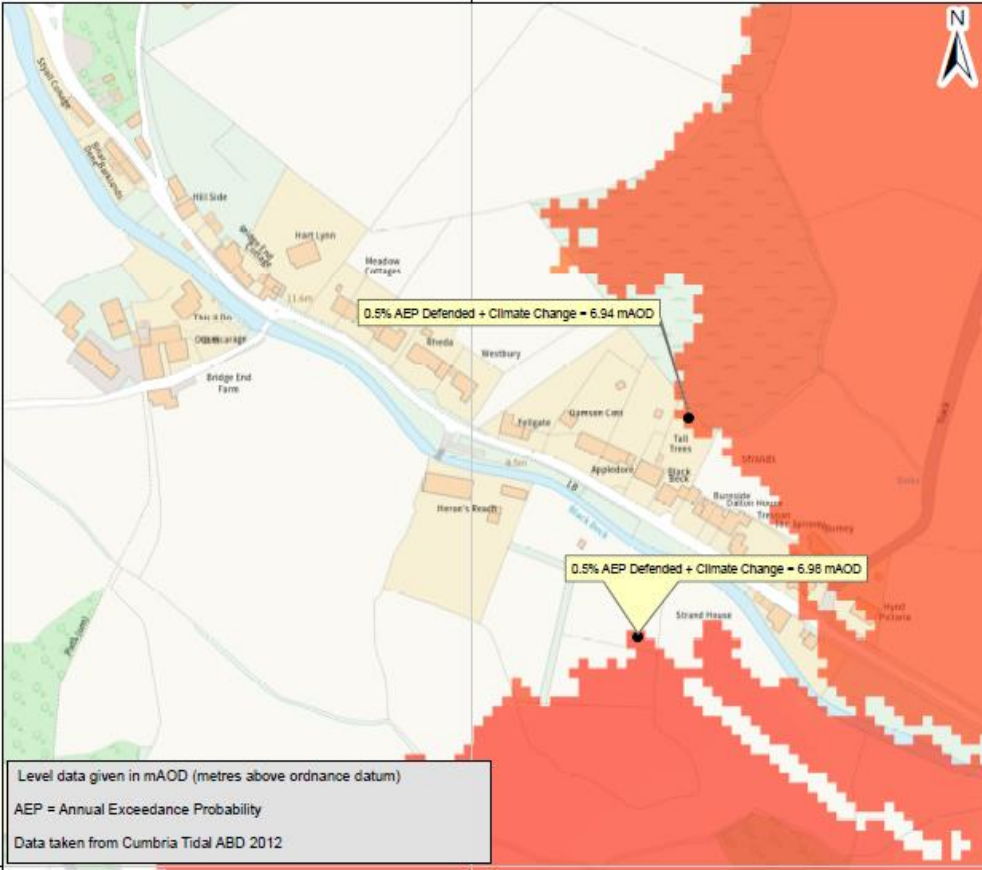


Modelled 2d Data Map:
 Herons Reach, The Green, LA185JA
 Produced: 19/09/2023
 Our Ref: CL321359
 NGR: 318392,484171

Key

0.5% AEP Defended + Climate Change
 (600mm SLR)

Value



Level data given in mAO D (metres above ordnance datum)
 AEP = Annual Exceedance Probability
 Data taken from Cumbria Tidal ABD 2012

484000

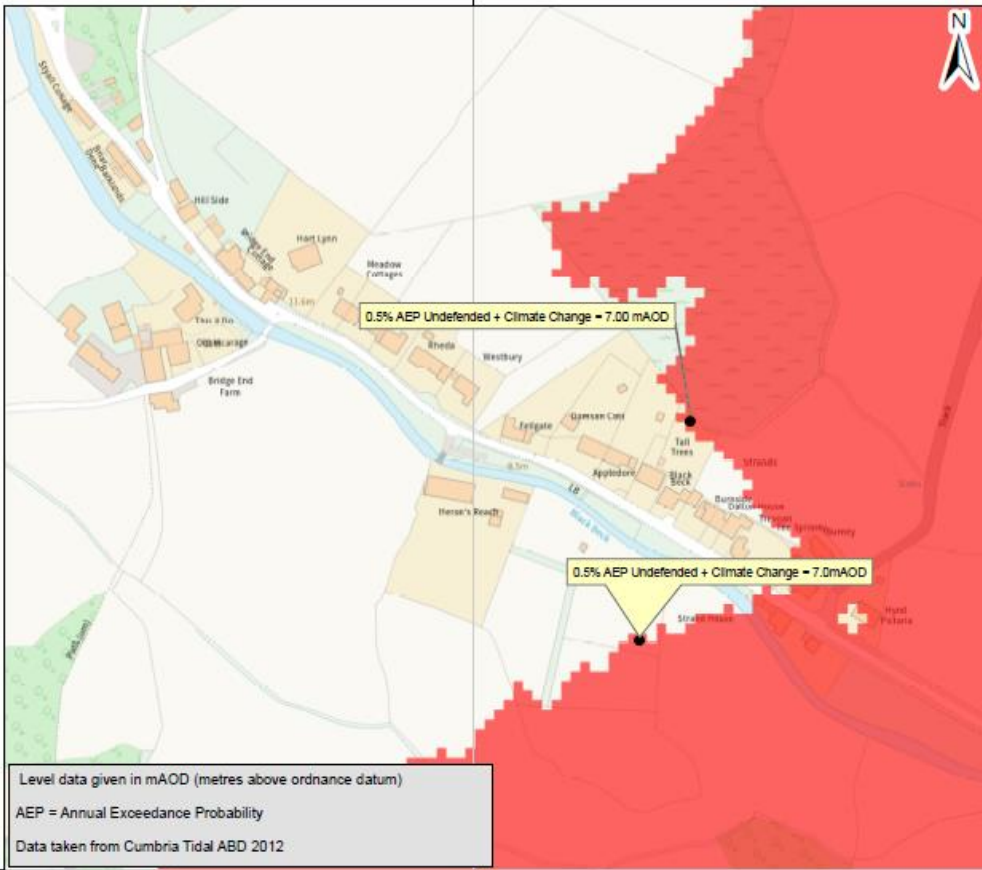
318400

Modelled 2d Data Map:
 Herons Reach, The Green, LA185JA
 Produced: 19/09/2023
 Our Ref: CL321359
 NGR: 318392,484171

Key

0.5% AEP Undefended + Climate Change
 (600mm SLR)

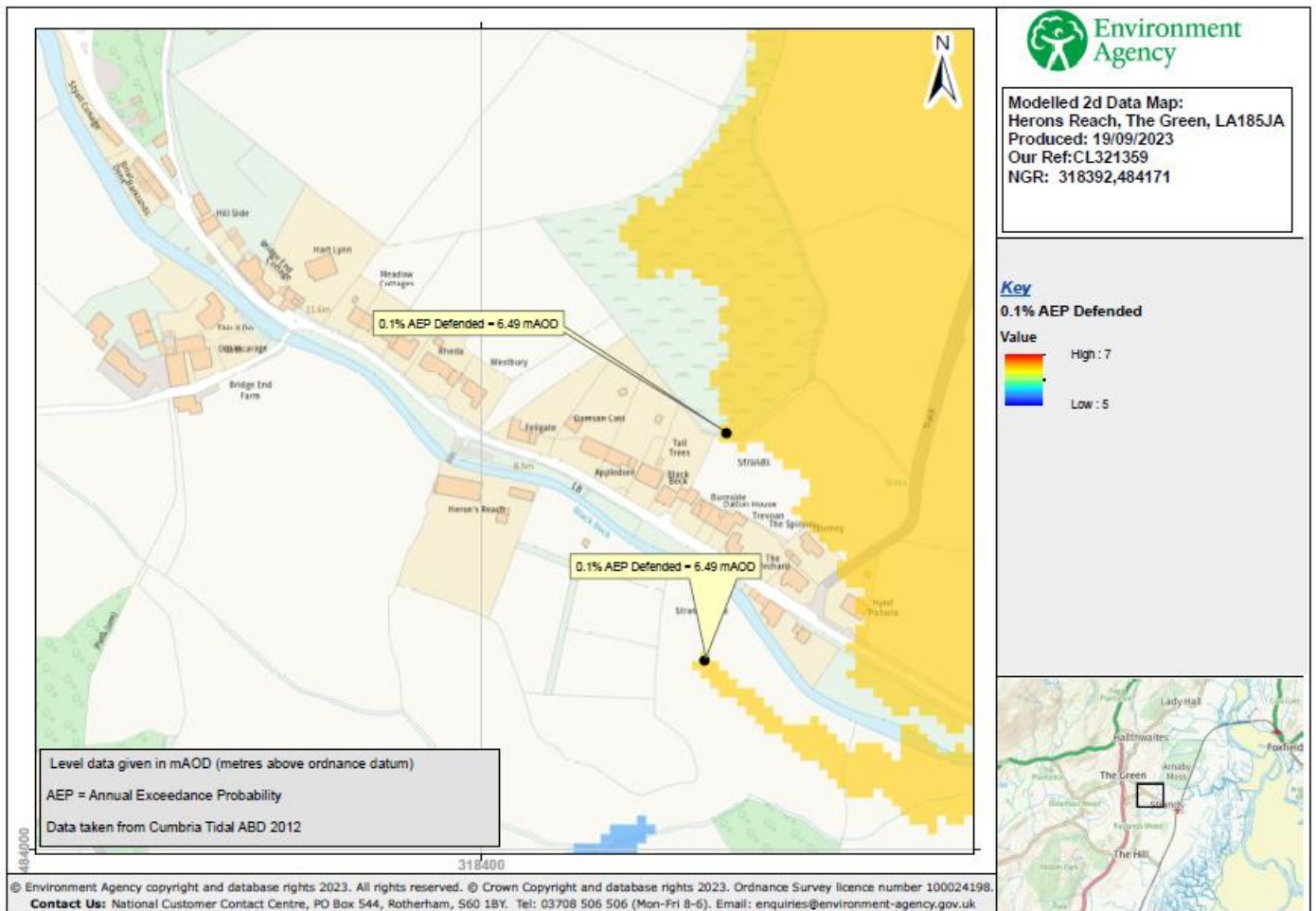
Value



Level data given in mAO D (metres above ordnance datum)
 AEP = Annual Exceedance Probability
 Data taken from Cumbria Tidal ABD 2012

484000

318400



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](#)

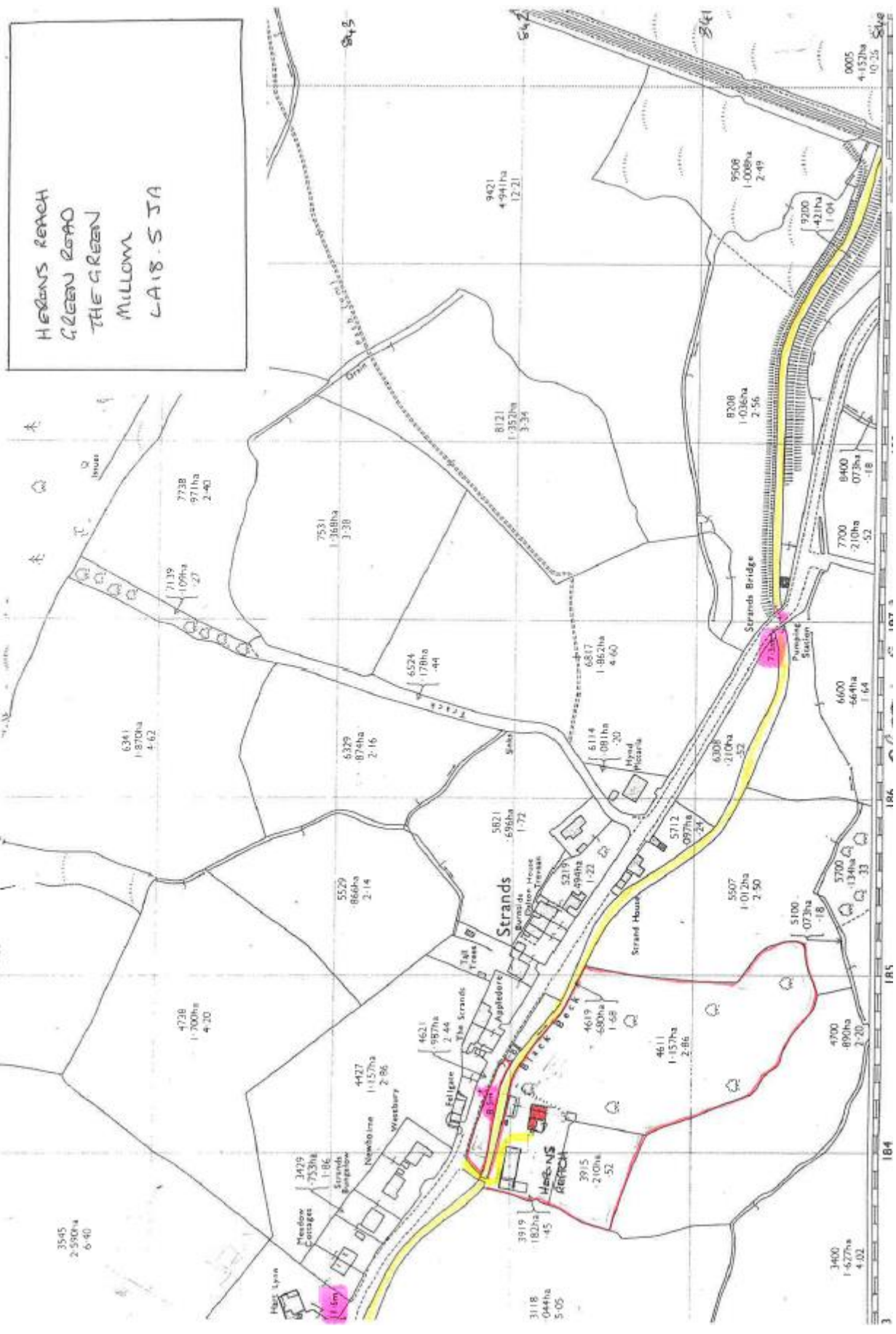
Help and advice

Contact the Cumbria and Lancashire Environment Agency team at inforequests.cmlnc@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

APPENDIX 3



-1500 Black Beck

0.45/0.15 H/QH WALL FOLLOWING BECK BOTTOM LEVEL AT 1.6m

