GEO-ENVIRONMENTAL CONSULTING ENGINEERS

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01254 377622
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Our Ref: BEK-20780-201019-DA

19 October 2020

FAO Mr Dave Abbott
127 Duke Street
Barrow-in-Furness
Cumbria
LA14 1XA

Flood Risk Statement: Proposed 3no self-contained industrial units Class B1/B2/B8 at Haverigg Industrial Estate, Haverigg, Millom, Cumbria LA18 4NG

BEK Enviro (BEK) have been commissioned by Mr Dave Abbott to provide a Flood Risk Statement for 'Proposed 3no self-contained industrial units Class B1/B2/B8 at Haverigg Industrial Estate, Haverigg, Millom'. The proposed development is classified as industrial development.

The site is located within Flood Zone 3 (area benefitting from flood defences) of the Environment Agency flood map for planning. The proposed development is for the development of 3no self-contained industrial units at an existing Industrial Estate. A copy of current development plans are included in Annex A and below:

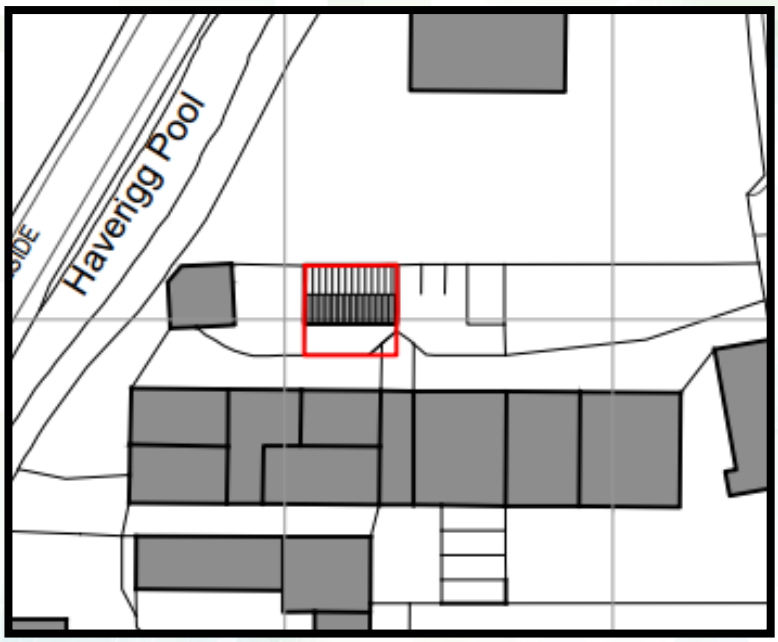

***Figure 1**: Proposed Development Site*

Background

The site is located within Flood Zone 3 (area benefitting from flood defences) of the Environment Agency flood map for planning as shown within the figure below:

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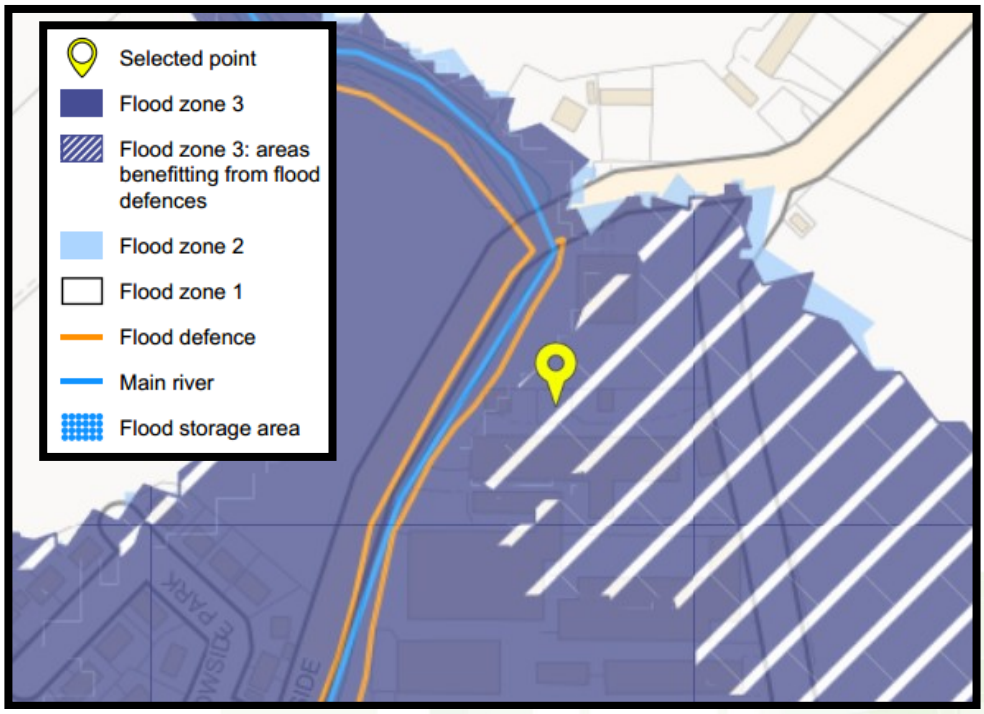

Figure 2: Environment Agency Flood Map for Planning

Flood Risk Statement

Topographical Survey

A topographical survey of the site is not currently available.

Lifetime of Building

The proposed development is commercial/industrial therefore the lifetime of the building is assumed to be 80 years.

Historical Flooding

Environment Agency data states 'We have no records of flooding affecting the site. However, this does not mean flooding has not occurred in the past or that it will not flood in the future.'

As such there are no records of historical flooding at the site.

Fluvial Flooding

Environment Agency modelled flood levels have been obtained from the Environment Agency for a range of return periods including the 1 in 100 year, 1 in 100 year plus climate change and extreme 1 in 1000 year flood event for Haverigg Pool adjacent to the site.

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The data has been obtained from the 2011 Haverigg Study with a modelled node known as 'WICH01_0636i' the closest node to the proposed development.

	Return Period		
	100 year	100 year plus 20% climate change	1 in 1000 year
River Level (mAOD)	5.13	5.16	5.27

Table 1: Flood Level Data for WICH01_0636i

Topographical data for the site is not available however the Environment Agency flood maps show that the site is protected from fluvial flooding during the 1 in 100 year and 1 in 1000 year defended flood events. As shown within the figure below:

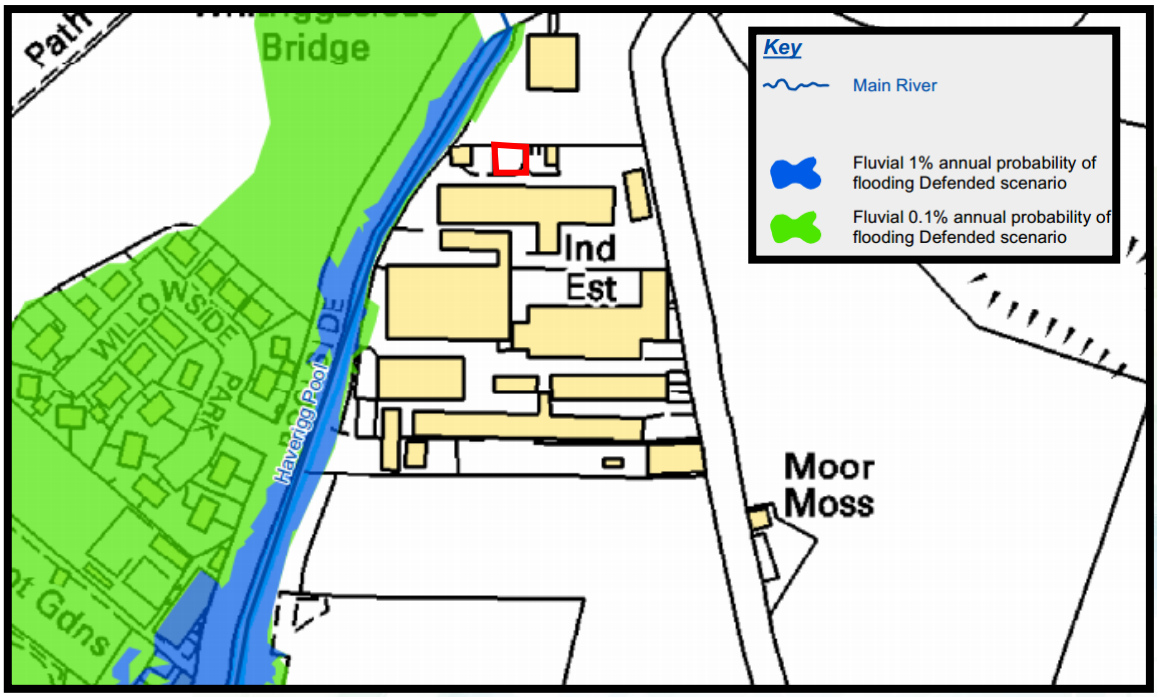

Figure 3: Environment Agency 1 in 100 year Fluvial Flood Map (Defended)

Climate Change Allowances

In accordance with Environment Agency guidelines for 'less vulnerable' developments in the north west basin region within flood zone 3, the 'central' and 'higher central' climate change allowances should be utilised. As such 30% and 35% should be added to the 1 in 100 year modelled flood level to account for climate change over the lifetime of the development.

It is considered unlikely that the 1 in 100 year plus 35% climate change would be greater than the modelled 1 in 1000 year flood level. As such the site is not considered to be at risk from fluvial flooding due to the presence of flood defences adjacent to Haverigg Pool.

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Coastal Flooding

Environment Agency modelled tidal flood level maps have been obtained from the Environment Agency for a range of return periods including the tidal 1 in 200 year (0.5% AEP), 1 in 200 year plus climate change (assumed to be 20%) and extreme 1 in 1000 year flood event defended flood events.

The Environment Agency tidal flooding modelling indicates that the site would not experience flooding during the 1 in 200 year tidal flood event as shown within the figure below:

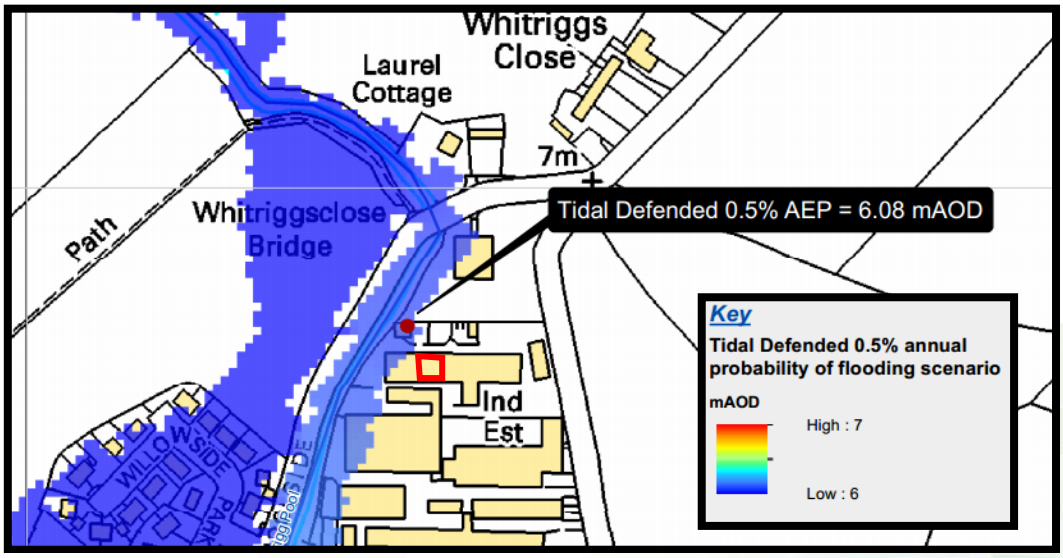

Figure 4: Environment Agency Tidal 1 in 200 year Flood Map (Defended)

With the addition of climate change allowances (assumed to be 20%) the site is shown to be located within the extent of flooding with flooding to a level of 6.32 mAOD. It is noted that the current climate change allowances of 20% are outdated and as such additional climate change allowances are discussed later within this statement.

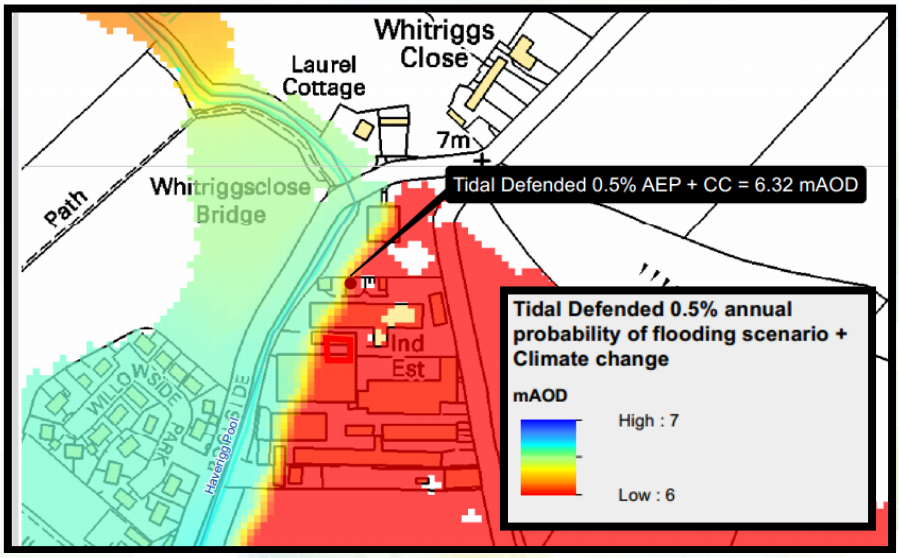

Figure 4: Environment Agency Tidal 1 in 200 year Flood Map plus climate change (Defended)

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The Environment Agency tidal flooding modelling indicates that the site would not experience flooding during the extreme 1 in 1000 year tidal flood event as shown within the figure below:

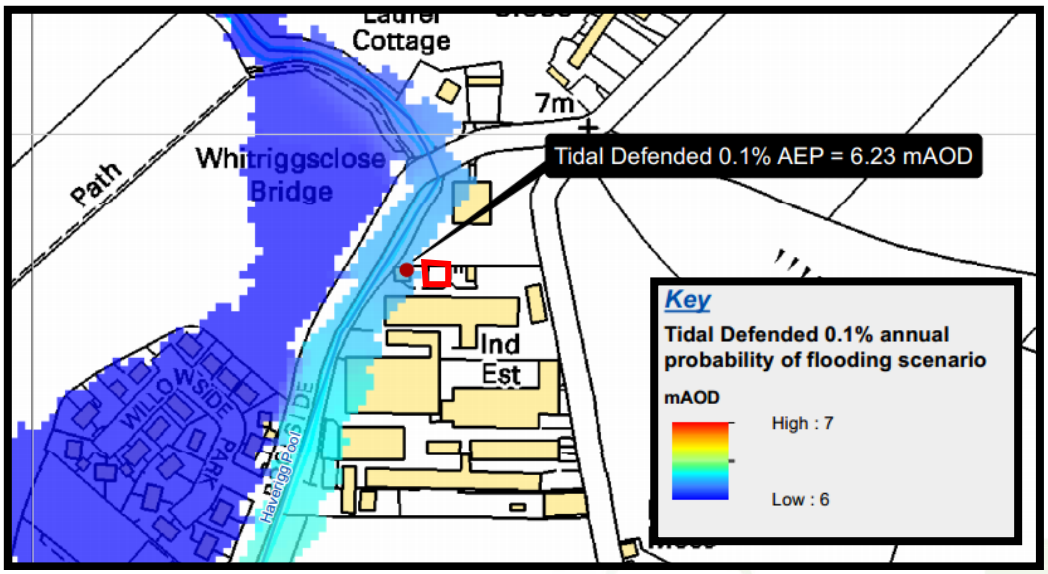

Figure 5: Environment Agency Tidal 1 in 1000 year Flood Map (Defended)

Climate Change Allowances

In accordance with Environment Agency guidelines higher central and upper end allowances should be utilised to assess the range of impact associated with climate change and tidal flooding.

As such the below table indicates the climate change allowances for the north west area for higher central and upper end allowances.

Area	Allowance	2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	Cumulative Rise (2020 to 2100) (m)
North West	Higher Central	4.5	7.3	10	11.2	0.64
	Upper End	5.7	9.9	14.2	16.3	0.89

Table 2: Sea Level Climate Change Allowances

As such 0.64 m and 0.89 m should be added to the tidal flood level for the 1 in 200 year flood event to account for climate change over the lifetime of the development for the higher central and upper end allowances respectively.

The 1 in 200 tidal flood event for the site according the Environment Agency data is 6.08 mAOD therefore the predicted climate change flood levels are 6.72 m AOD for the higher central allowances and 6.97 m AOD for the upper end allowances.

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A topographical survey of the site is not available however a review of the Environment Agency tidal flood maps indicates that the site does not flood during the 1 in 1000 year tidal flood level of 6.23 mAOD (Figure 4) but floods during the 1 in 200 year plus climate change flood level of 6.32 mAOD (Figure 3). As such the site level is assumed to be between 6.23 mAOD and 6.32 mAOD i.e. 6.28 mAOD.

	Return Period				
	200 year	200 year plus higher central allowances	200 year plus upper end allowances	200 year plus climate change (EA information)	1 in 1000 year
Flood Level (mAOD)	6.08	6.72	6.97	6.32	6.23
Assumed Finished Floor Level (mAOD)	6.28	6.28	6.28	6.28	6.28
Elevation of estimated FFL above/below modelled levels (m)	+ 0.20	- 0.44	- 0.69	- 0.04	+ 0.05

Table 3: Elevation of assumed FFL compared to modelled tidal flood levels

As such the site would be expected to experience flooding during the tidal 1 in 200 plus climate change allowances to a maximum depth of 0.69 m. Therefore flood resilience/resistance design should be incorporated into the new build.

Flood Resistance/Resilient Design

In accordance with Environment Agency guidance flood resistant/resilience should be incorporated to a level 600 mm above the modelled flood level i.e. to a level of 6.97 + 0.6 m = 7.57 mAOD. It is noted that this is approximately 1.29 m above the assumed finished floor level of the proposed development. Such measures are put forward in accordance with 'Development and Flood Risk Guidance for the Construction Industry' CIRIA C624, London 2004.

The table below provides a range of typical flood proofing measures which may, where appropriate be incorporated into the proposed building. Full details of manufacturers and suppliers of flood protection equipment may be obtained from the Flood Protection Association (website: www.thefpa.org.uk).

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Feature	Considerations to Improve Flood Proofing
External Walls	Careful consideration of materials; use low permeability materials to limit water penetration if dry proofing required. Avoid using timber frame and cavity walls. Consider applying a water resistant coating. Provide fitting for flood boards or other temporary barriers across openings in the wall.
Internal Walls	Avoid use of gypsum plaster and plasterboards; use more flood resistant linings (e.g. hydraulic lime, ceramic tiles). Avoid use of stud partition walls.
Floors	Avoid use of chipboard floors. Use concrete floors with integrated and continuous damp proof membrane and damp proof course. Solid concrete floors are preferable; if a suspended floor is to be used, provide facility for drainage of sub-floor void. Use solid insulation materials.
Fitting, Fixtures and Services	If possible, locate all fittings, fixtures and services above design flood level. Avoid chipboard and MDF. Consider use of removable plastic fittings. Use solid doors treated with waterproof coatings. Avoid using double-glazed window units that may fill with flood water. Use solid wood staircases. Avoid fitted carpets. Locate electrical, gas and telephone equipment and systems above flood level. Fit anti-flooding devices to drainage systems.

Table 4: Typical Flood Protection Measures

Safe Access and Egress

It is noted that the site would not be expected to flood during the 1 in 100 year plus climate change and 1in 1000 year fluvial flood events. Furthermore the site would not flood during the modelled 1 in 200 year and 1 in 1000 year tidal flood events but would be anticipated to flood during the 1 in 200 year plus climate change tidal event. Site owners should sign up to the Environment Agency Floodline service and evacuate the building following a flood alert/warning from the Environment Agency.

The Environment Agency 'Guide to preparing your business for flooding' included in Annex C of this report includes a template for a Business Flood Plan to ensure the occupants of the site are suitably prepared in the event flooding.

Flood Storage Volume

As the site is at risk of tidal flooding and not fluvial flooding it is not considered that any compensatory flood storage will be required.

Conclusions

The proposed commercial/industrial development is located within flood zone 3 (areas benefitting from flood defences). Environment Agency modelled data indicates that the site would remain free of flooding during the 1 in 100 year, 1 in 100 year plus climate change allowances and 1 in 1000 year fluvial flood events.

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The site would not be anticipated to flood during the 1 in 200 year and 1 in 1000 year tidal flood events. However with the addition of climate change allowance the site would be anticipated to flood.

As such it is proposed that suitable mitigation measures are incorporated into the new build to a level of 600 mm above the predicted tidal flood level with climate change allowances over the lifetime of the development (i.e. to an approximate level of 7.57 mAOD). Site owners should sign up tor receive Environment Agency Flood Alerts/Warnings and prepare a Business Flood Plan.

Yours sincerely

[redacted]

DAVID EMMOTT
BSc (Hons) MSc MIEnvSci

Annex A – Proposed Development Plans
Annex B –Environment Agency Modelled Flood Information
Annex C - Environment Agency 'Guide to preparing your business for flooding'

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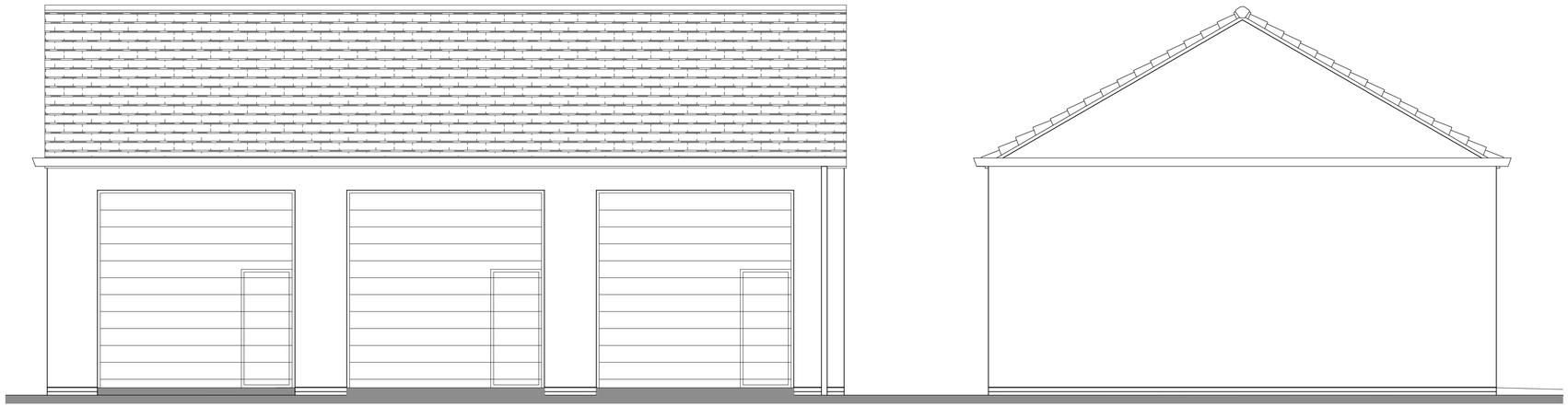
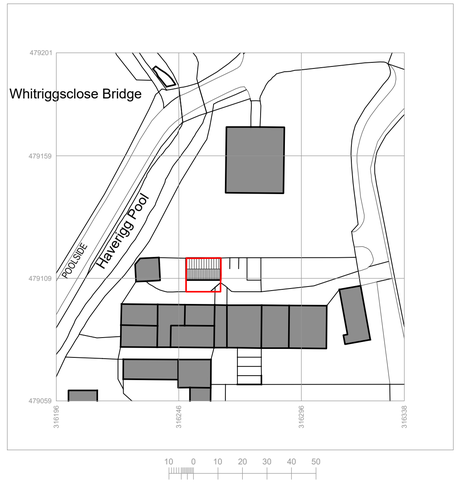
ANNEX A

Proposed Development Plans

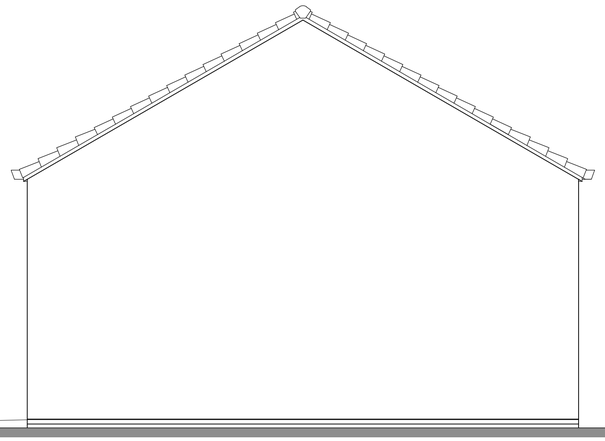


Proposed south elevation

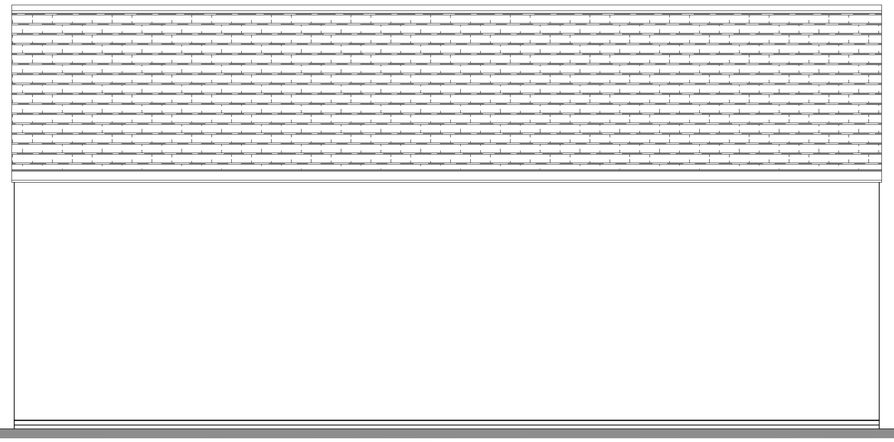
Proposed west elevation



Site location plan 1:1250 scale

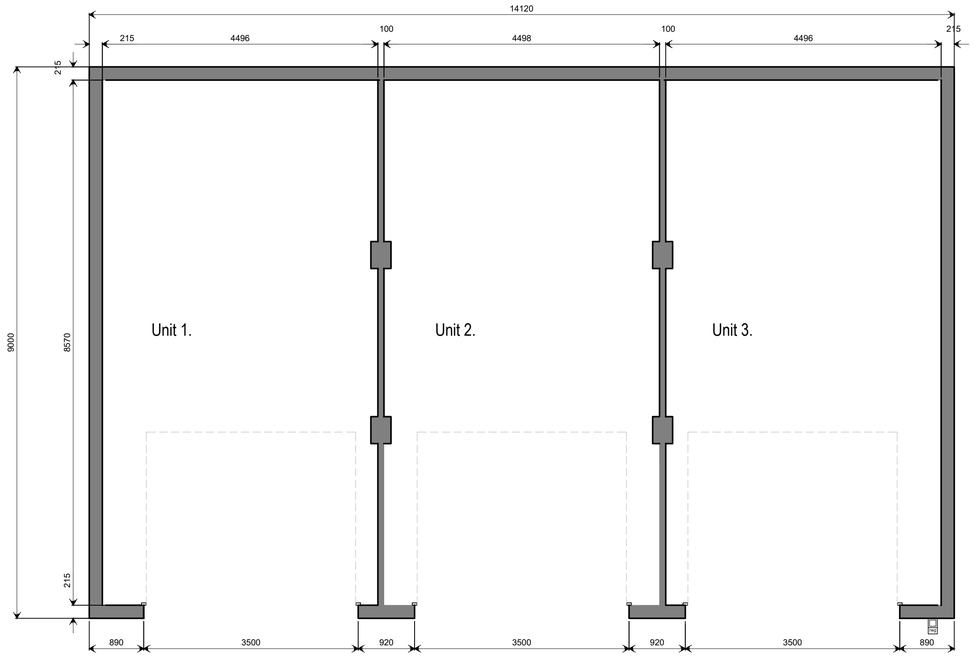


Proposed east elevation

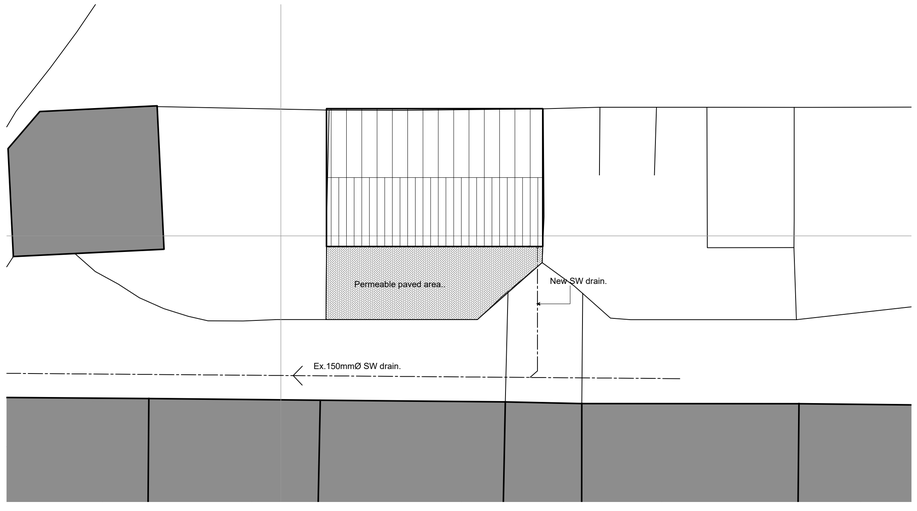


Proposed north elevation

Materials:-
Roof.Russell 'Galloway' Slate Grey concrete interlocking roof tiles.
White uPVC fascia and barge.Dry verge system.
Walls.Rendered blockwork (White) with black facing brick splash course.
Doors.Sectional Aluminium doors with wicket personnel door (Dark Grey).
Roof drainage.Dark grey deep flow profiled aluminium gutters and downspout.
Paviours.Brindle concrete permeable paviours laid in herringbone pattern.



Proposed floor plan



Site layout plan 1:200 scale

PRELIMINARY

Proposed 3.No.self contained industrial units Class B1/B2/B8
at Haverigg Industrial Estate,Haverigg,Millom.Cumbria.LA18 4NG.
For Mr.G.Nicholas.

Scales 1:50,1:200,1:1250.
August 2020.

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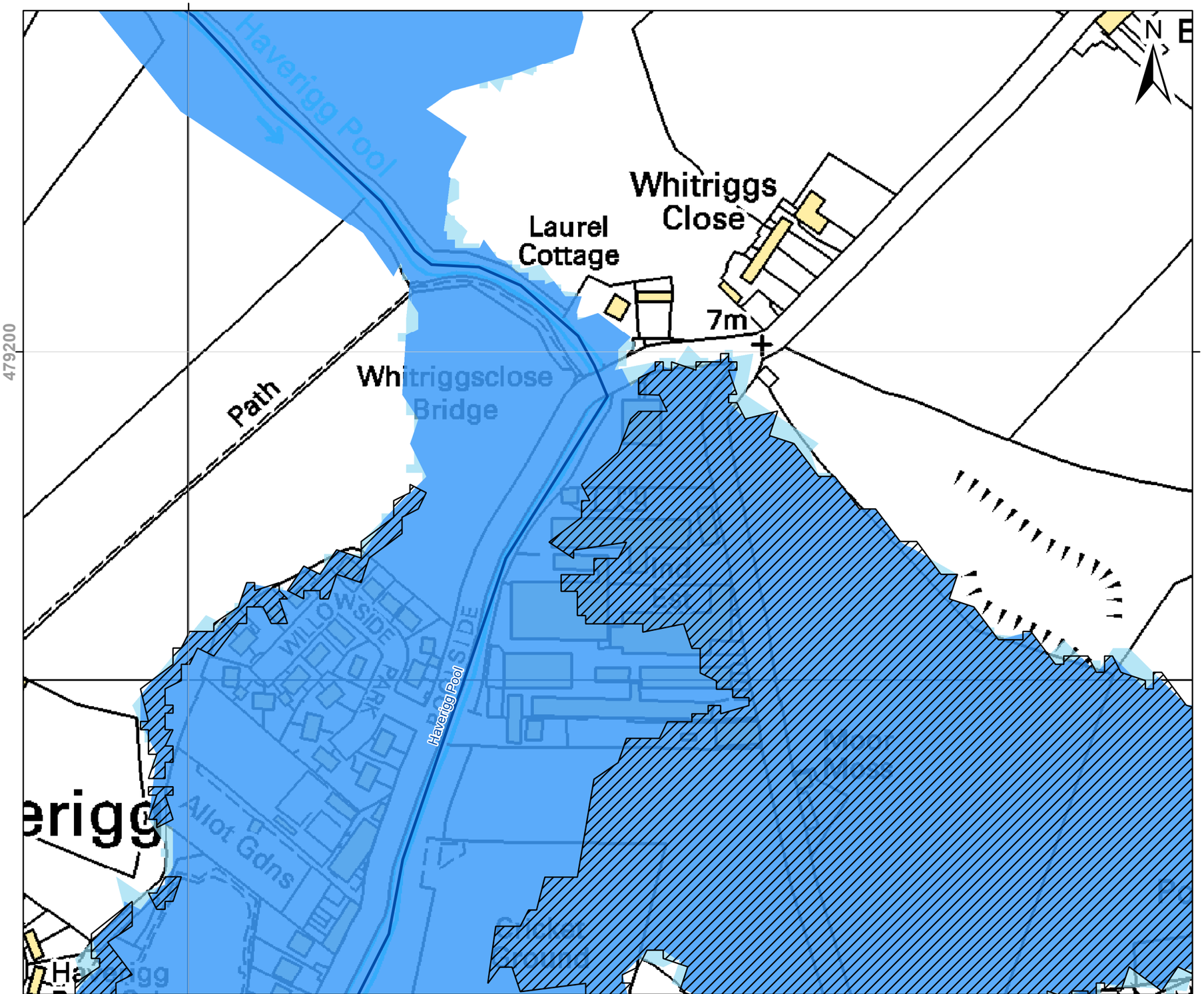
ANNEX B

Environment Agency Modelled Data



Flood Zones Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

Produced: 01 October 2020
Our Ref: CL184179
NGR: 316257,479110

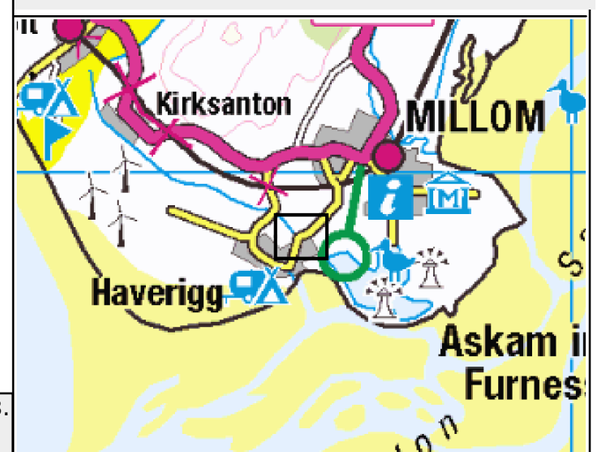
Key

- Main River
- Areas Benefitting from Defences
- Flood Zone 3
- Flood Zone 2

Flood Zone 3 shows the area that could be affected by flooding:
- from the sea with a 0.5% or greater chance of happening each year
- or from a river with a 1.0% or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to 0.1% chance of occurring each year.

ABDs (Areas Benefiting from Defences) show the area benefiting from defences during a 0.5% tidal, or 1.0% fluvial flood event.



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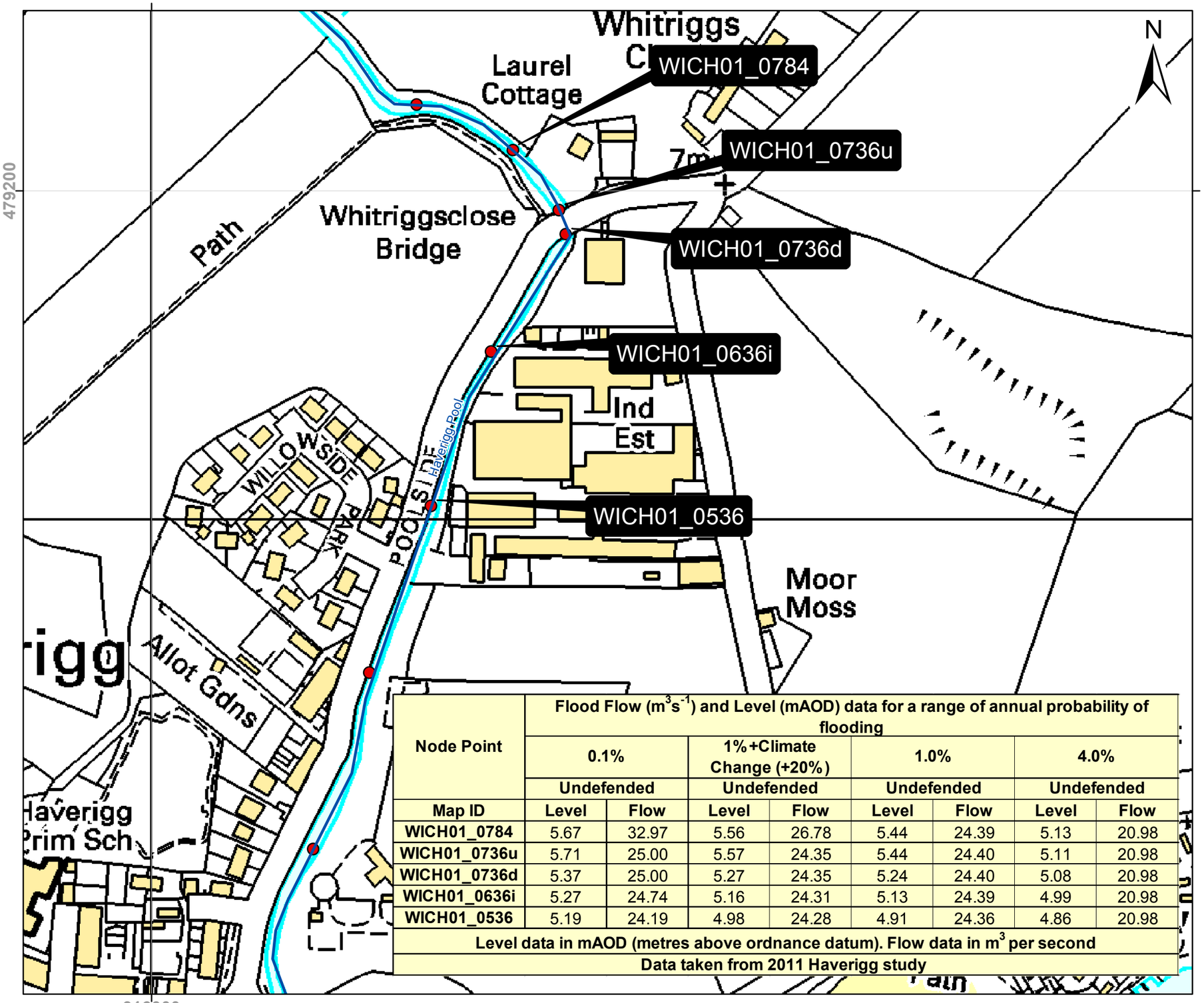

Node Point	Flood Flow (m^3s^{-1}) and Level (mAOD) data for a range of annual probability of flooding							
	0.1%		1%+Climate Change (+20%)		1.0%		4.0%	
	Undefended		Undefended		Undefended		Undefended	
Map ID	Level	Flow	Level	Flow	Level	Flow	Level	Flow
WICH01_0784	5.67	32.97	5.56	26.78	5.44	24.39	5.13	20.98
WICH01_0736u	5.71	25.00	5.57	24.35	5.44	24.40	5.11	20.98
WICH01_0736d	5.37	25.00	5.27	24.35	5.24	24.40	5.08	20.98
WICH01_0636i	5.27	24.74	5.16	24.31	5.13	24.39	4.99	20.98
WICH01_0536	5.19	24.19	4.98	24.28	4.91	24.36	4.86	20.98

Level data in mAOD (metres above ordnance datum). Flow data in m^3 per second

Data taken from 2011 Haverigg study

Environment Agency

Fluvial levels Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

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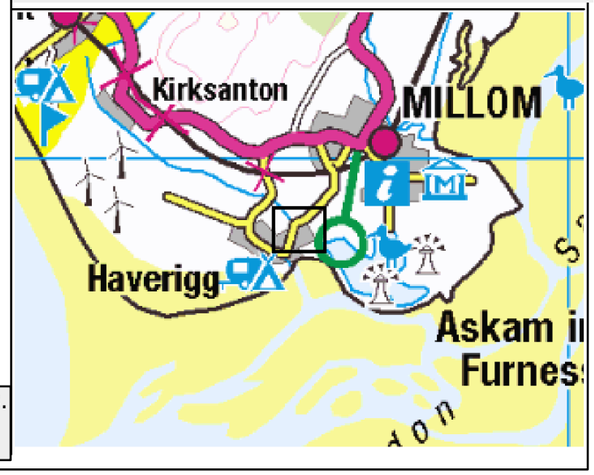

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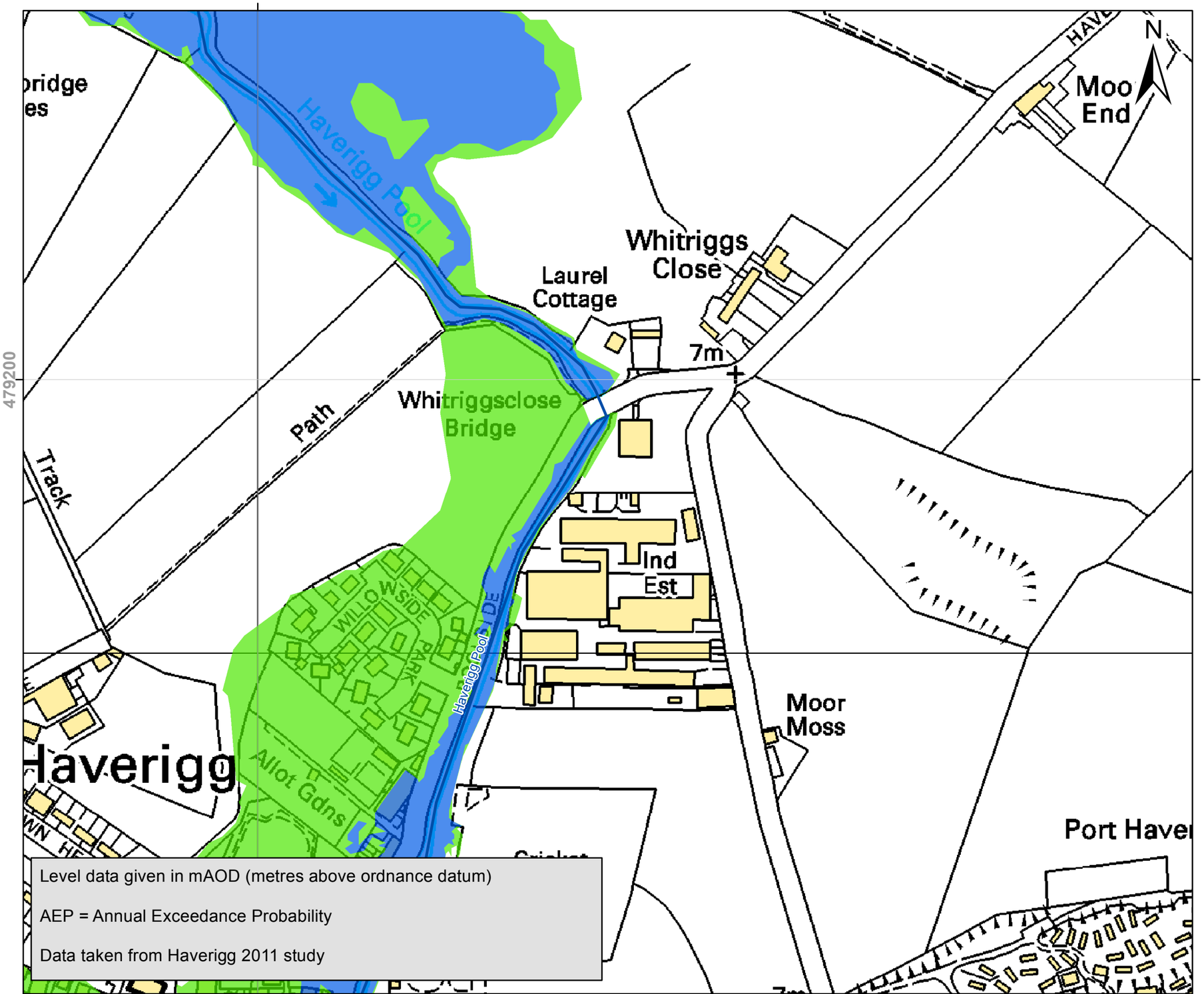

Level data given in mAOD (metres above ordnance datum)

AEP = Annual Exceedance Probability

Data taken from Haverigg 2011 study

Fluvial Flood Outline Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

Produced: 01 October 2020
Our Ref: CL184179
NGR: 316257,479110

Key

Main River

Fluvial 1% annual probability of flooding Defended scenario

Fluvial 0.1% annual probability of flooding Defended scenario

Flood Zone 3 shows the area that could be affected by flooding:
- from the sea with a 0.5% or greater chance of happening each year
- or from a river with a 1.0% or greater chance of happening each year.

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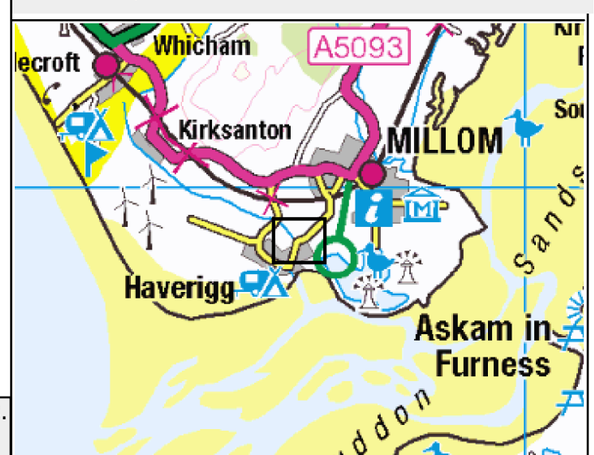

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Fluvial Flood Outline Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

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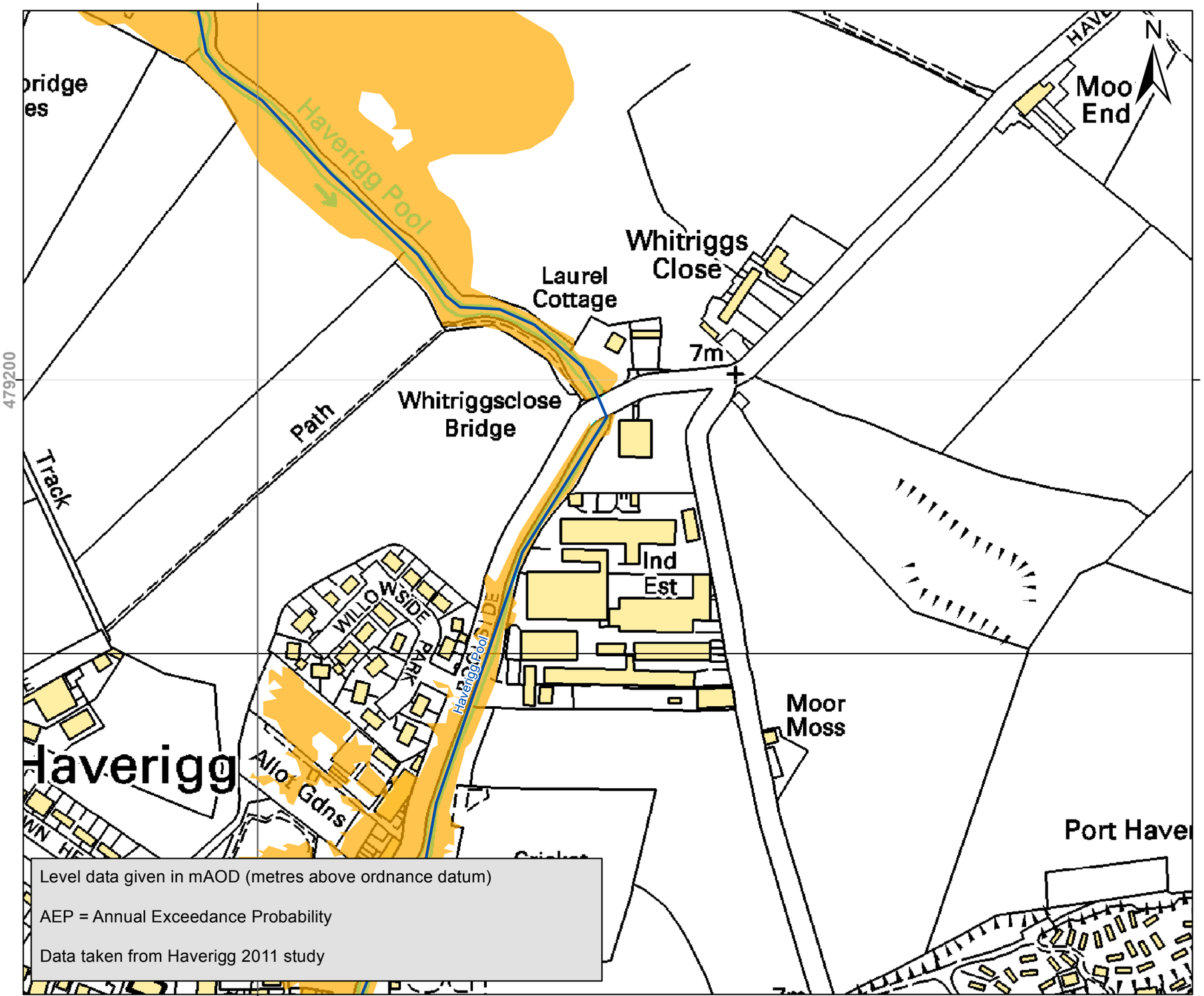

Level data given in mAOD (metres above ordnance datum)

AEP = Annual Exceedance Probability

Data taken from Haverigg 2011 study

Key

Main River

Fluvial 1% Defended Scenario annual probability of flooding + Climate change

Flood Zone 3 shows the area that could be affected by flooding:
- from the sea with a 0.5% or greater chance of happening each year
- or from a river with a 1.0% or greater chance of happening each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to 0.1% chance of occurring each year.

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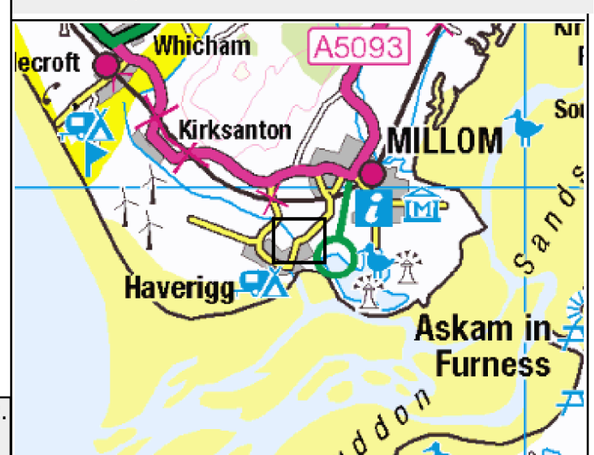

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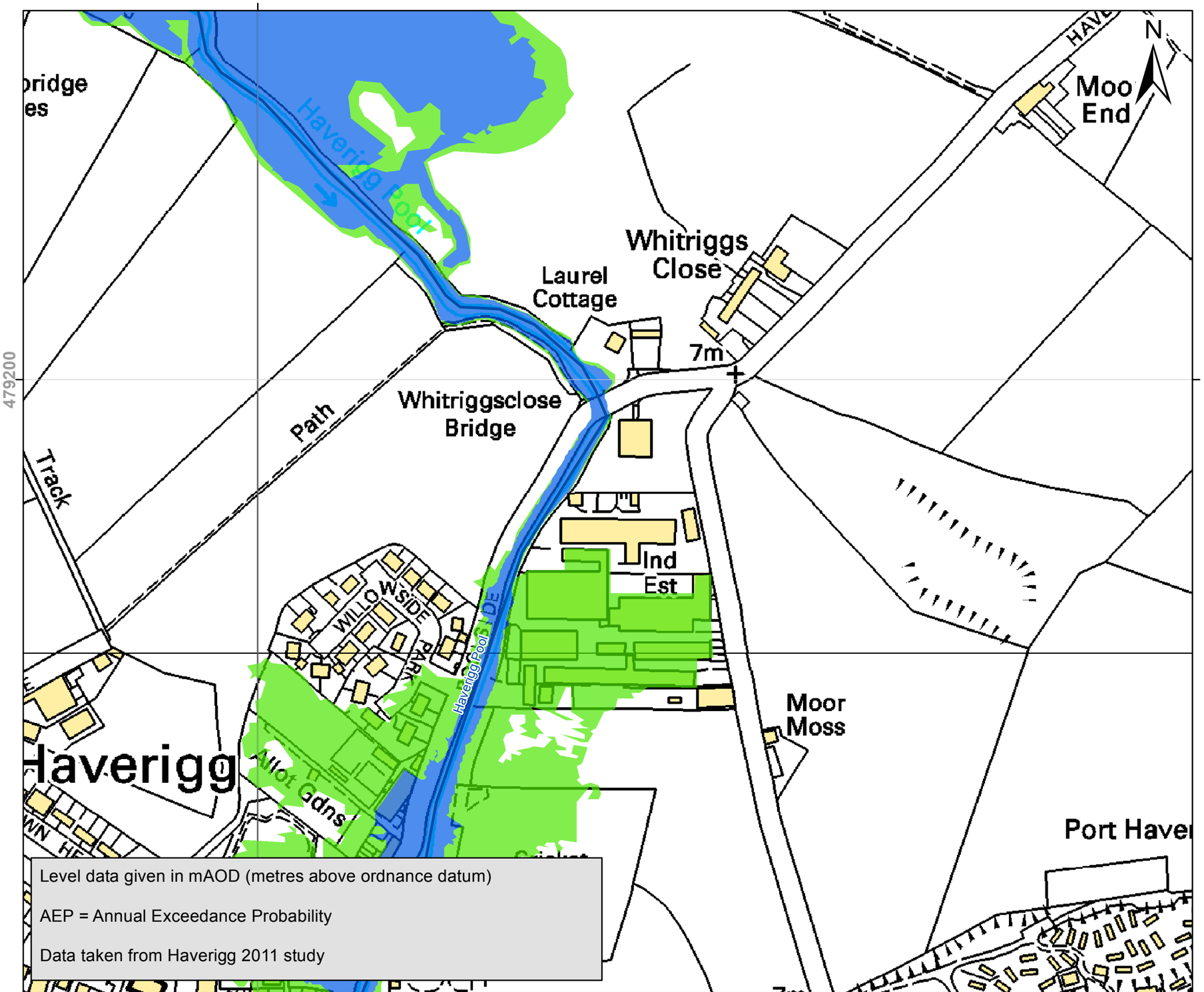

Level data given in mAOD (metres above ordnance datum)

AEP = Annual Exceedance Probability

Data taken from Haverigg 2011 study

Environment Agency

Fluvial Flood Outline Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

Produced: 01 October 2020
Our Ref: CL184179
NGR: 316257,479110

Key

Main River

Fluvial 1% Undefended annual probability of flooding

Fluvial 0.1% Undefended annual probability of flooding

Flood Zone 3 shows the area that could be affected by flooding:
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- or from a river with a 1.0% or greater chance of happening each year.

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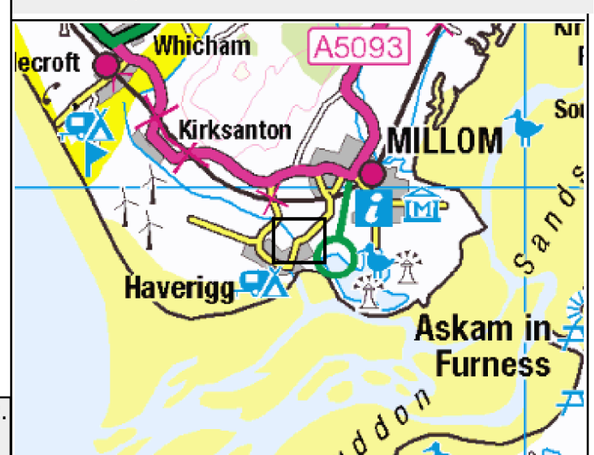
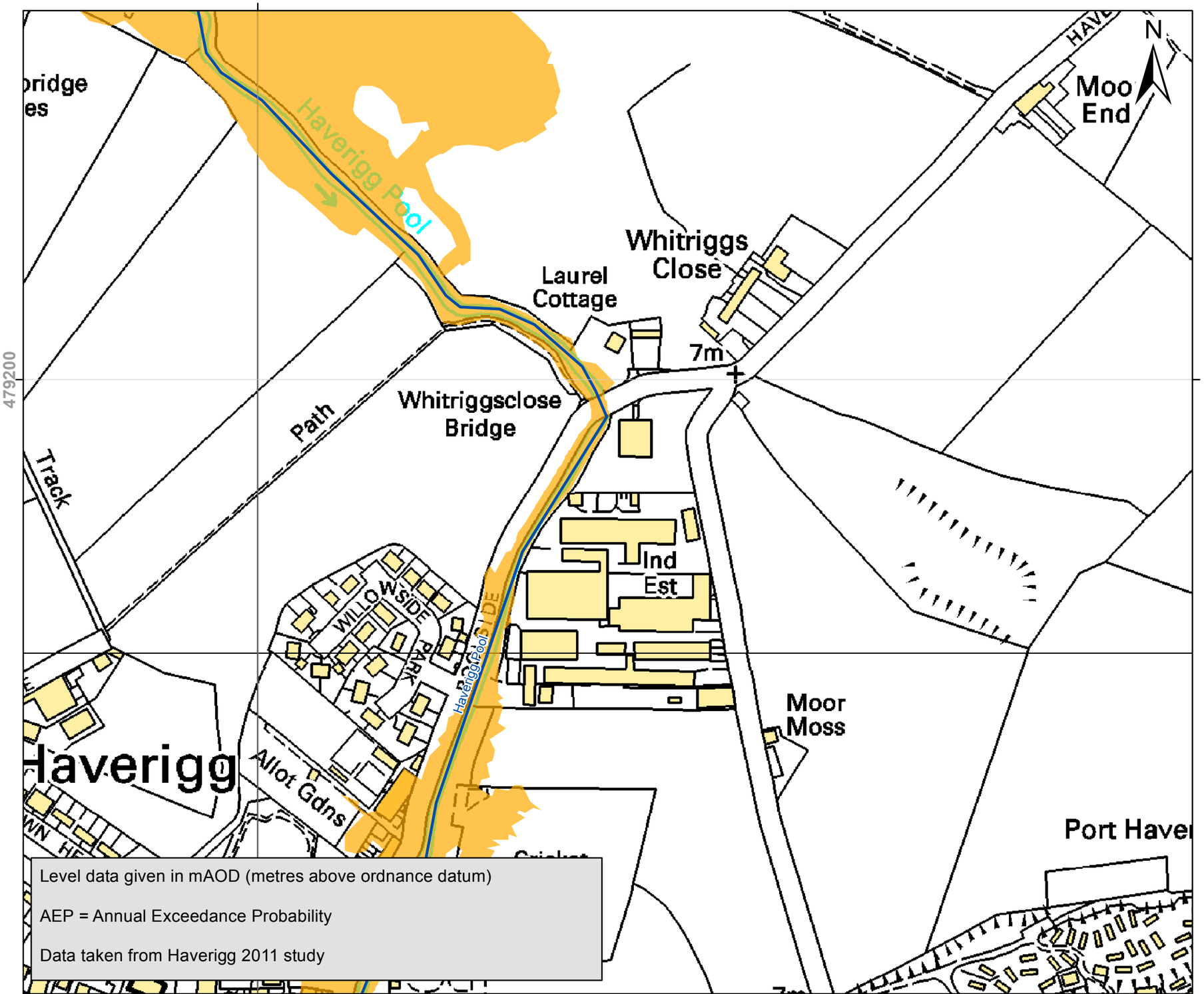


Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Fluvial Flood Outline Map: Haverigg Industrial Estate, Millom Cumbria, LA18 4NG

Produced: 01 October 2020
Our Ref: CL184179
NGR: 316257,479110



Level data given in mAOD (metres above ordnance datum)

AEP = Annual Exceedance Probability

Data taken from Haverigg 2011 study

Key

Main River

Fluvial 1% Undefended annual probability of flooding + climate change

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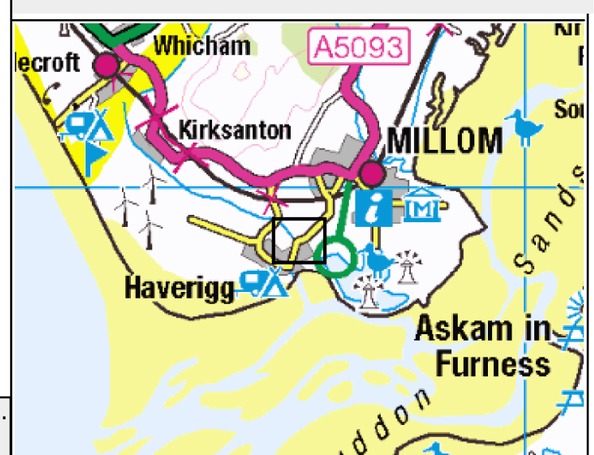

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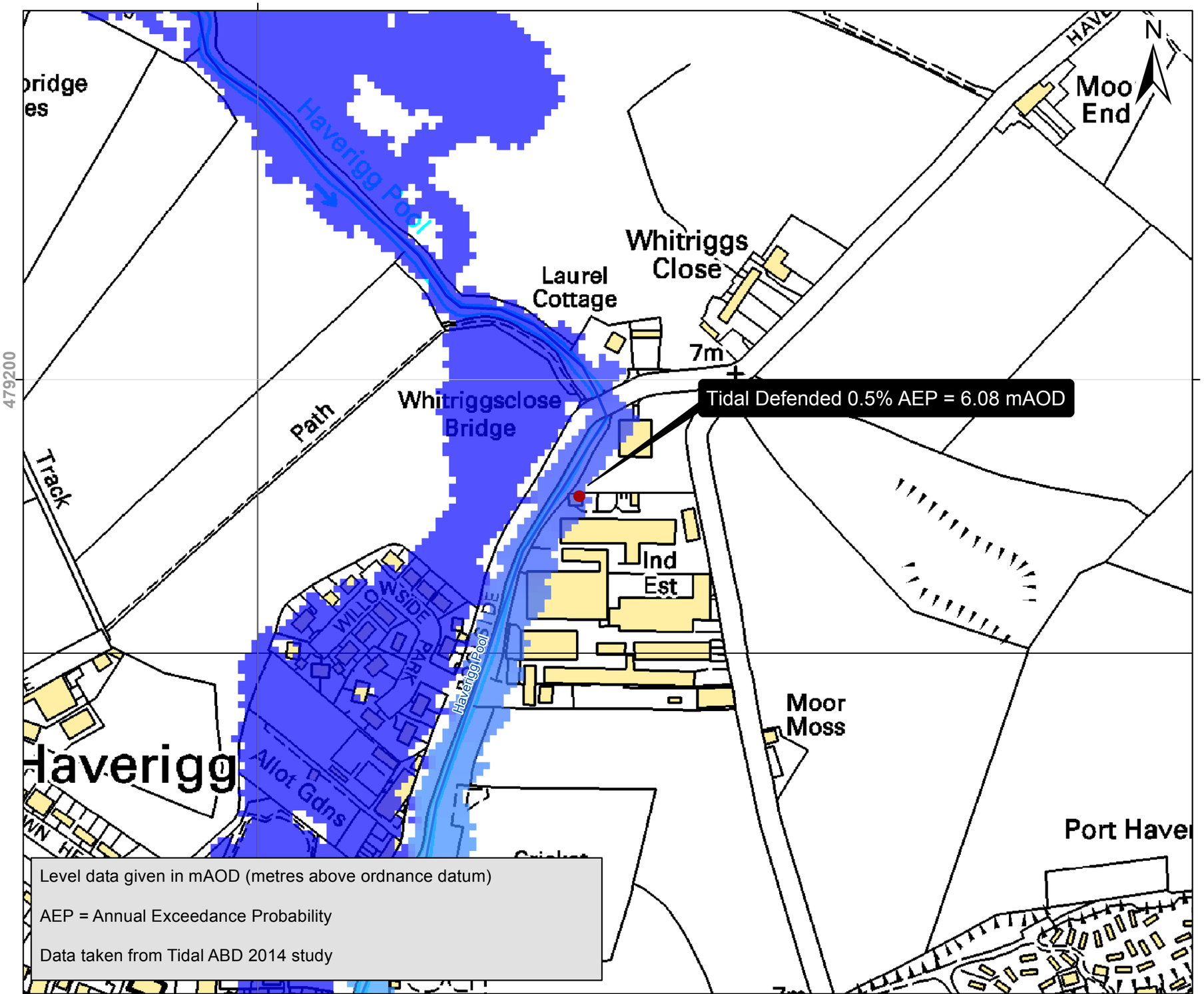

Level data given in mAOD (metres above ordnance datum)

AEP = Annual Exceedance Probability

Data taken from Tidal ABD 2014 study

Key

Tidal Defended 0.5% annual probability of flooding scenario

mAOD

High : 7

Low : 6

Main River

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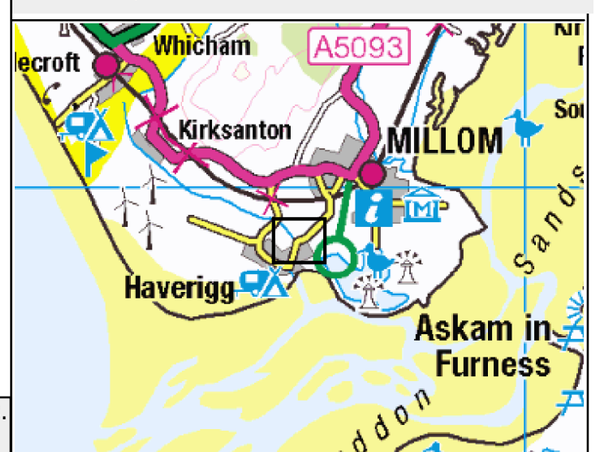

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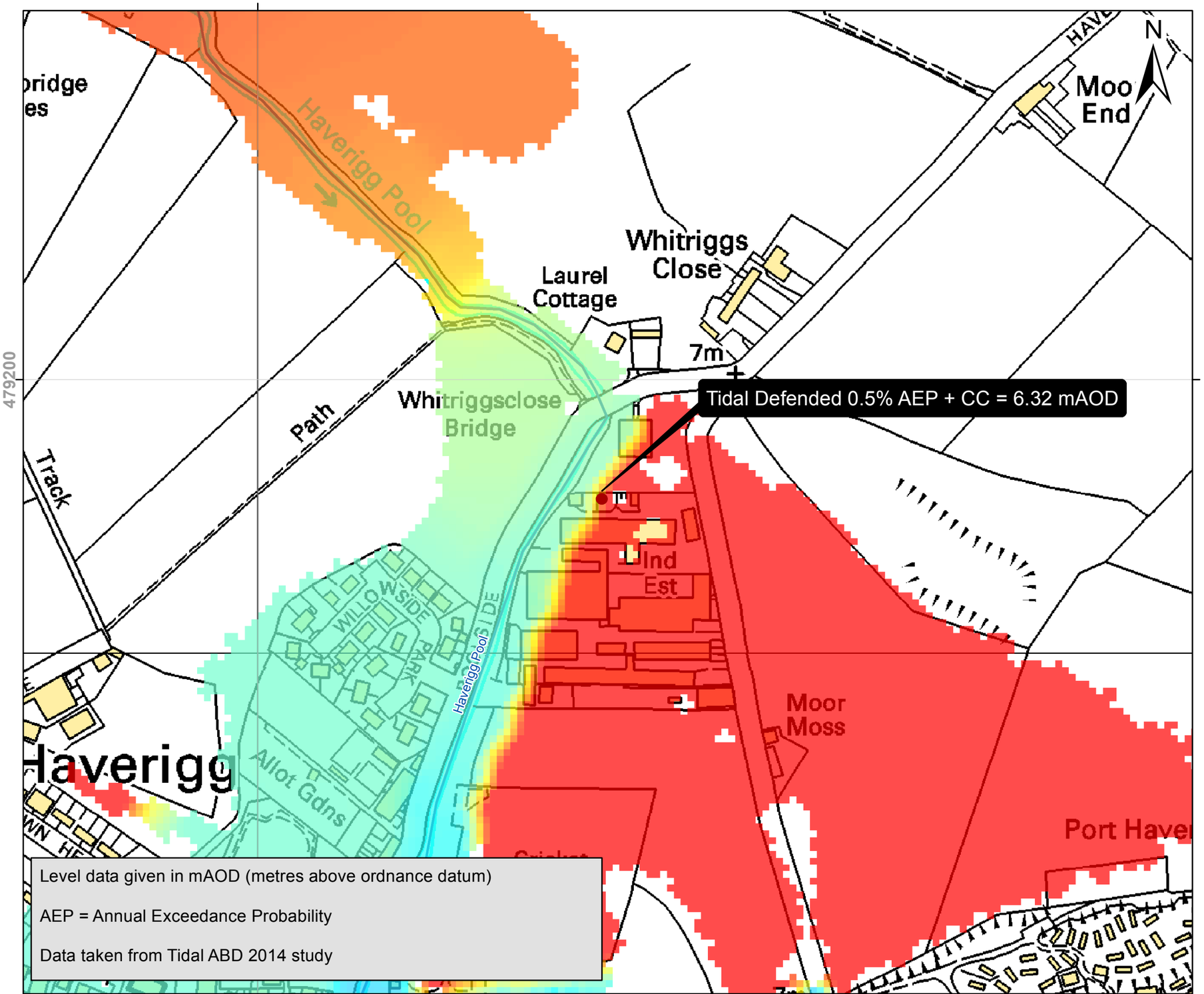

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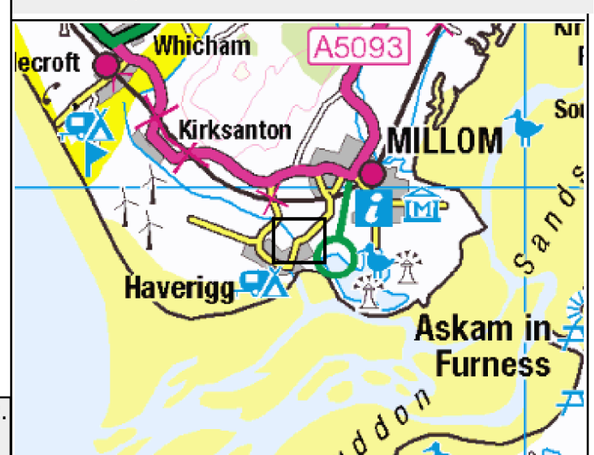

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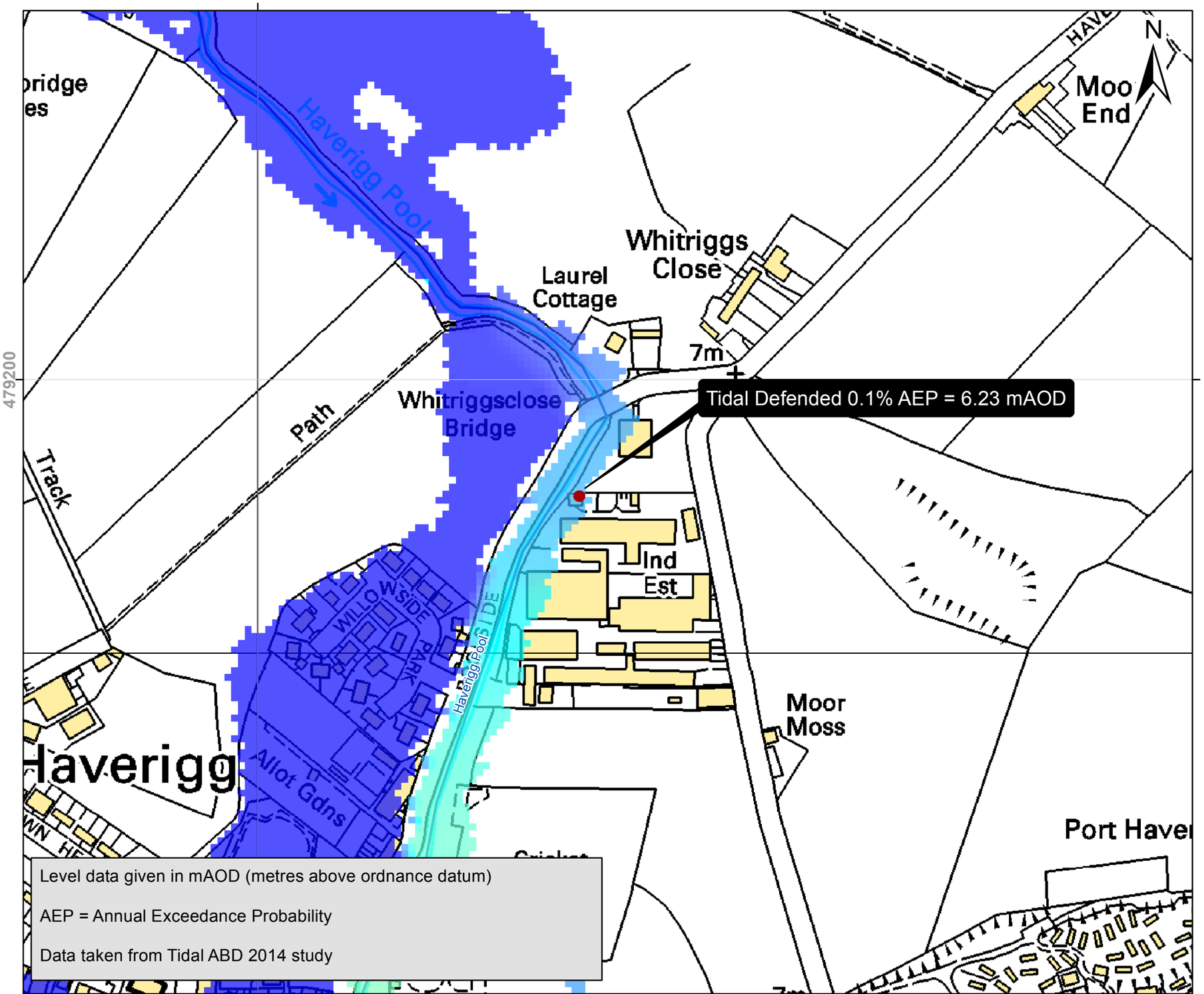

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Tidal Defended 0.1% annual probability of flooding scenario

mAOD

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Low : 6

Main River

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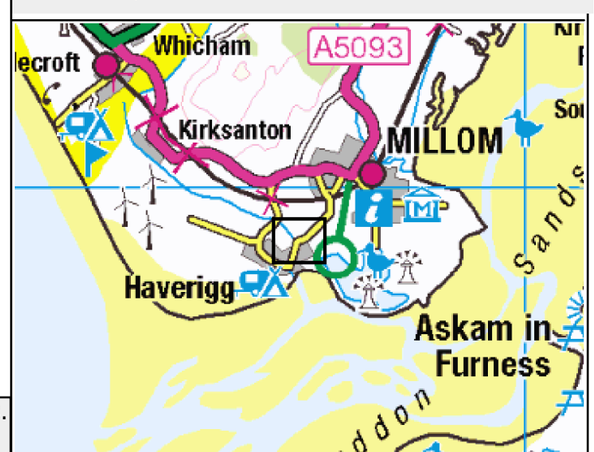

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Haverigg Pool
Whitriggs Close
Laurel Cottage
Moo End
7m
Tidal Undefended 0.5% AEP = 6.14 mAOD
Whitriggsclose Bridge
Path
Track
Ind Est
Moor Moss
Haverigg
Allot Gdns
Port Haver
479200
316000

Level data given in mAOD (metres above ordnance datum)

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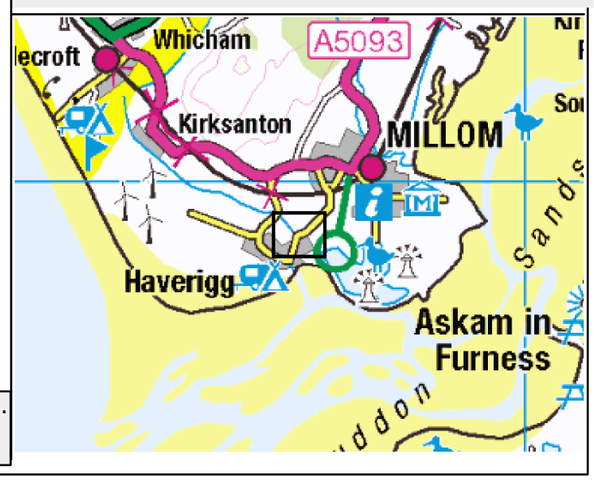

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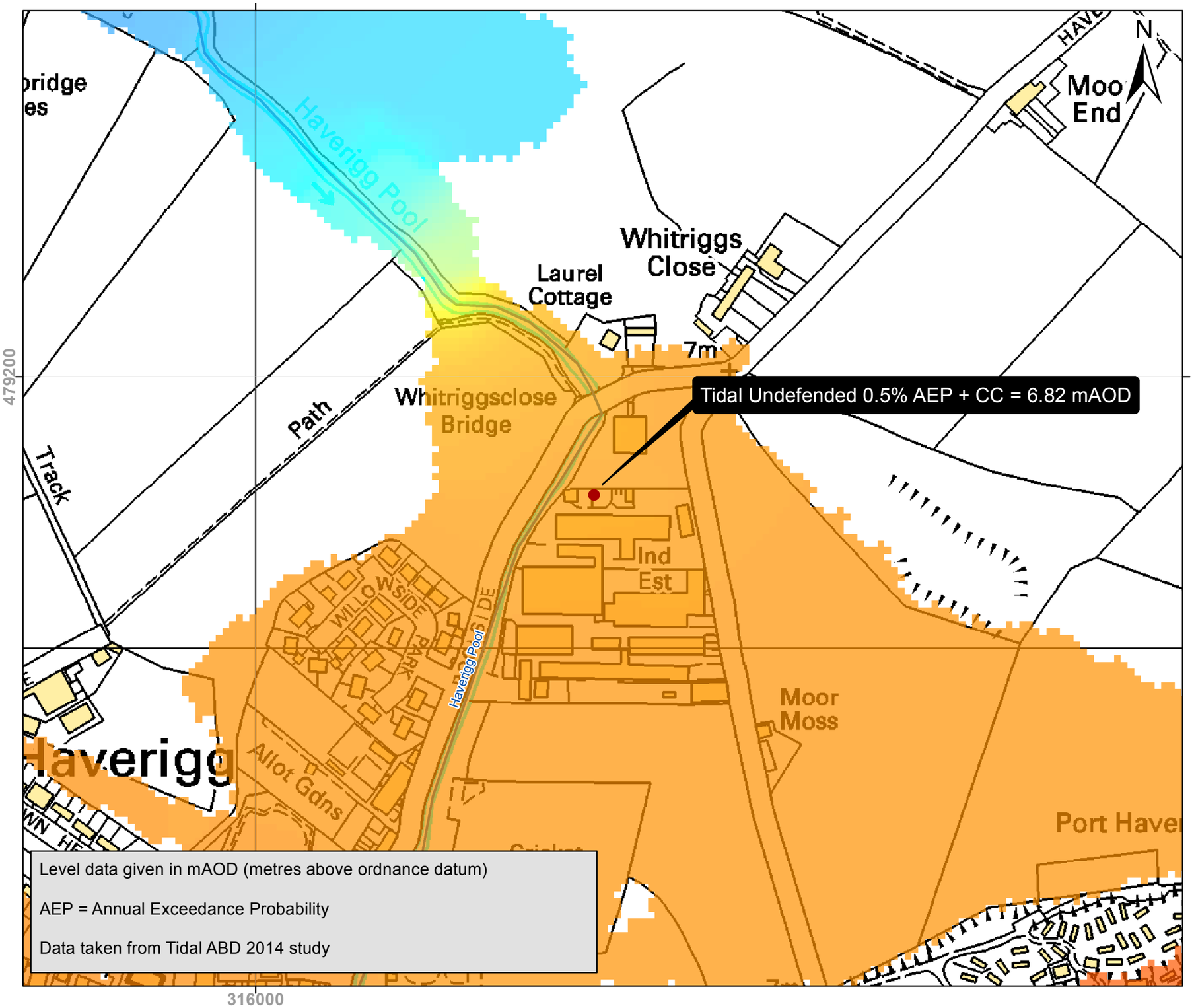

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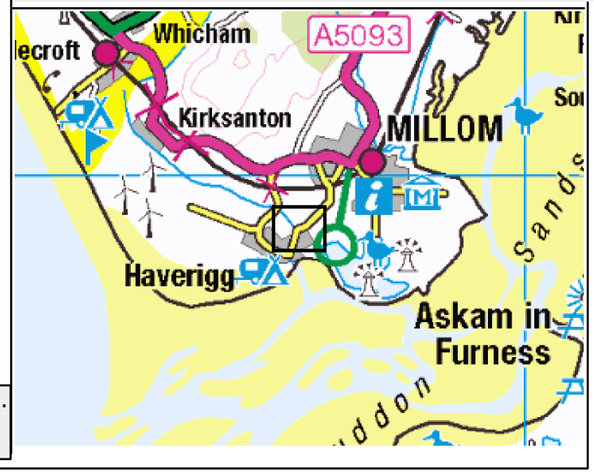

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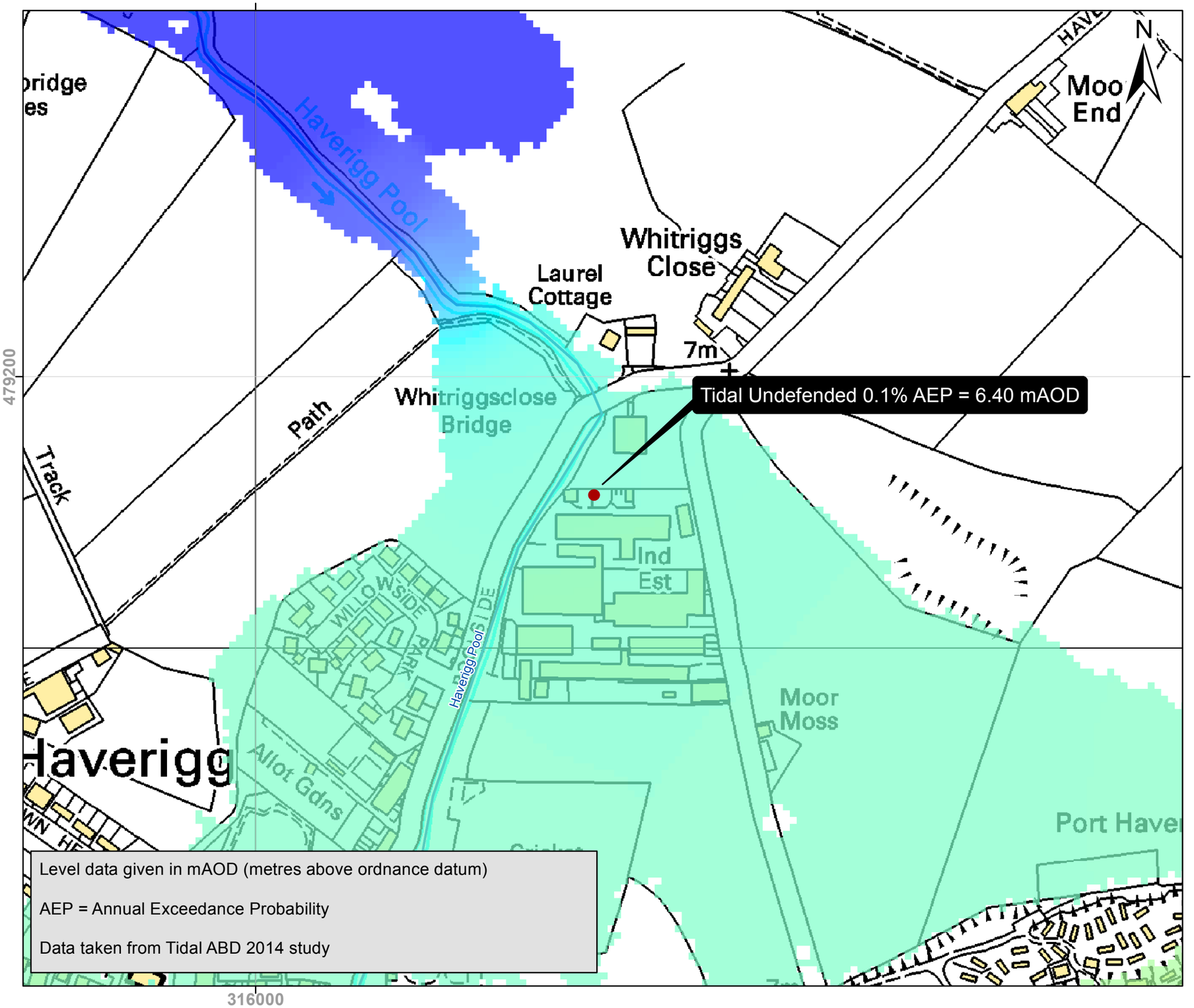

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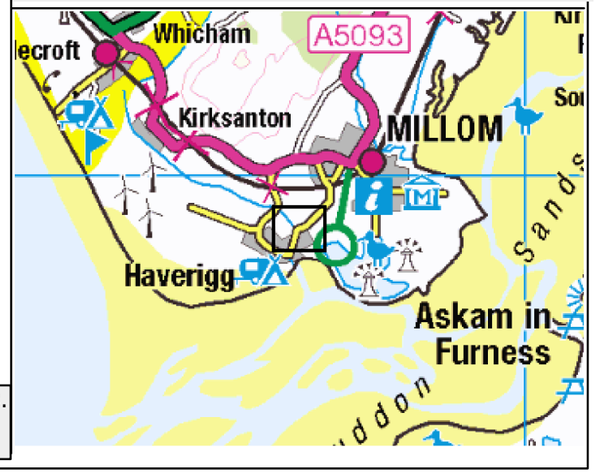

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GEO-ENVIRONMENTAL CONSULTING ENGINEERS

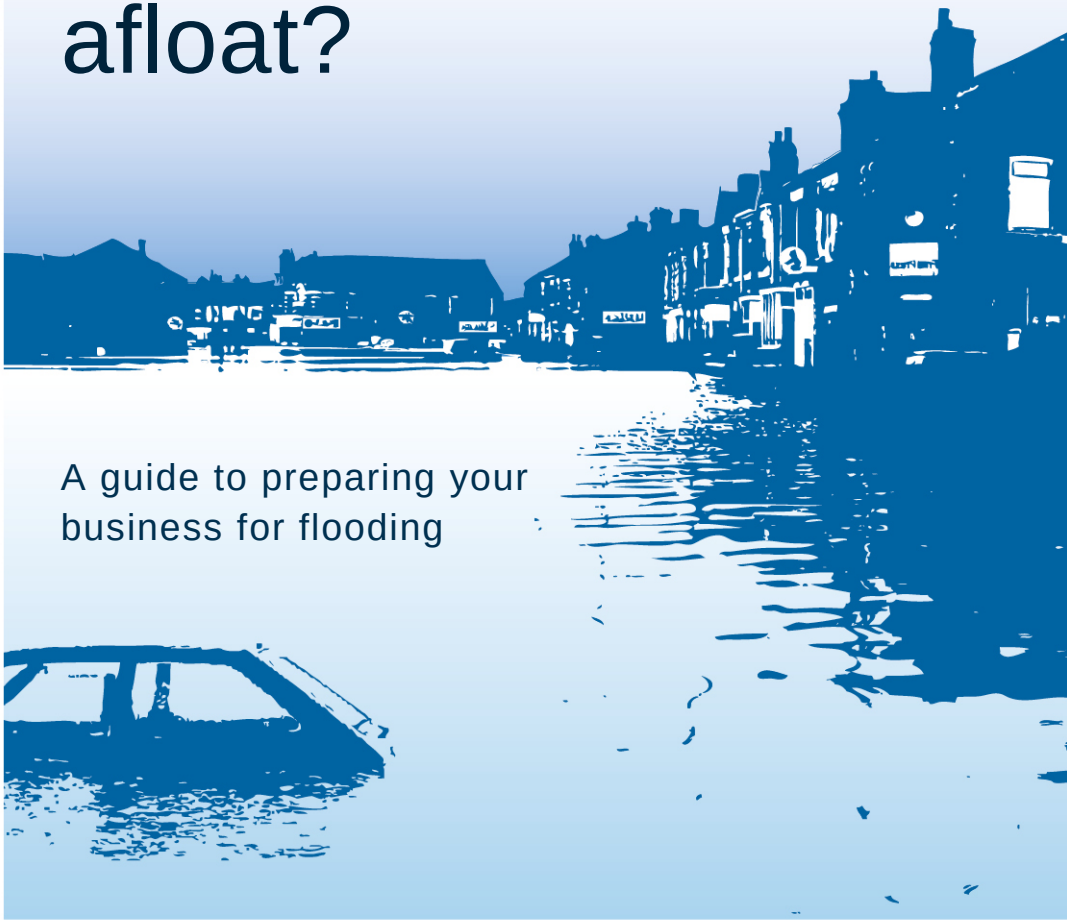
bEk Enviro Ltd
Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE
01254 377622
mbuckley@bekenviro.co.uk | bekenviro.co.uk

ANNEX C

Environment Agency 'Prepare your business for flooding'

Environment Agency

would your business stay afloat?



A guide to preparing your business for flooding

Flooding is the most common and widespread natural disaster in the UK. Since 1998 there has been at least one serious flood every year. Businesses like yours are more likely to be flooded than destroyed by fire. As our climate changes we can expect to see more extreme weather – and more floods.

We aim to reduce the likelihood of flooding by managing land, rivers, coastal systems and flood defences. While we do everything we can to reduce the chance of flooding, it is a natural process and can never be completely eliminated.

By taking action to prepare in advance for flooding, most businesses can save between 20 and 90 per cent on the cost of lost stock and movable equipment, as well as some of the trouble and stress that goes with such an event.

This is a simple guide to some of the easy actions that you can take to make sure that your business is as well prepared as possible.

It tells you about how to find out if your business is at risk, our flood warning service and what our flood warning codes mean. It also has a simple template to use to design a flood plan for your company.

For more information about flooding, visit our website at **www.gov.uk/flood** or call Floodline on **0345 988 1188**.

Make sure that your business is prepared for flooding.

How do I find out if my business is at risk from flooding?

There are two quick and easy ways for you to find out if you're at risk.

call us on
0345 988 1188

Our Floodline service is open 24 hours, calls are charged at local rate. By taking your postcode, our operators will check and see if your business is in a flood risk area.

Look at our website
www.gov.uk/flood

You need to be aware of flooding and keep an eye on the water levels and weather situation at all times. You can do this by checking the flood forecasts and the river and sea levels on our website.

Our online flood map uses the latest technology and data gathered over many years to give the most accurate view of flooding in your area.

By entering your postcode you can find out if your business is at risk. Areas at risk from flooding are shown in dark blue and areas at risk from extreme flooding in light blue.

My business is at risk from flooding. What should I do now?

Start preparing now. If the weather conditions are right, flooding can happen at any time.

Remember, floods can happen at any time and any day – make sure you provide a number that can be contacted at all times – even out of working hours.

Sign up for flood warnings.

The first thing you should do is find out if you can receive flood warnings. In areas of high flood risk, we offer a service called Floodline Warnings Direct. This is a free, 24 hour service that sends automated flood warnings by telephone, SMS text, email, fax or pager.

To find out if you can receive this service, call Floodline on 0345 988 1188.

If your business isn't in an area covered by our warnings you can still check the latest flood warnings in force on our website.

When the situation is serious, flood warnings will also be broadcast on local television and radio news.

What practical steps can I take to protect my business?

Now that you've checked your risk and found out about flood warnings, it's time to start thinking about preparing a flood plan specifically for your business.

Taking simple steps can go a long way to protecting your business from flooding. Preparing a flood plan could:

- Significantly reduce financial losses, damage to property and business interruption;
- Help compliance with regulatory requirements (for example, Occupier's Liability Act 1984);
- Reduce exposure to civil or criminal liability;
- Enhance your company's image and credibility with employees, customers, suppliers and the community;
- Help fulfil your moral responsibility to protect employees, the community and the environment;
- Help you to obtain insurance cover.

What is a flood plan?

Just as many businesses have health and safety policies and contingency plans for an emergency, they should also have flood plans.

A flood plan is a written document that outlines how your business will respond to a flood.

This might include a list of steps you will take in case of a flood and the order you will take them in. It could also include the purchase of flood products and insurance.

A written plan can make information **easy** to access during a flood, **easy** to communicate to staff, and **easy** to remember.

Small businesses should make sure there is a plan of action in case of flooding. As the business owner, this may be your responsibility.

If your business is **medium sized**, flood preparation might be the responsibility of a team of people from different areas of the business.

If your business decides to have a flood planning team, this could be led by the business owner or Managing Director.

The leader of the flood planning team will need to let staff know about the plan once it is finished.

All members of the team should also keep a copy of important flood contacts at home for easy access.

Key areas to consider in your flood plan are:

- human resources;
- maintenance/facilities;
- finance and purchasing.

Once you have completed your plan don't forget about it. Look at it regularly and make sure it is up to date and in the event of a flood **use it**.

business flood plan

A written flood plan is recommended for businesses.

It should include:

- A list of important contacts, including Floodline, building services, suppliers and evacuation contacts for staff;
- A description or map showing locations of key property, protective materials and service shut-off points;
- Basic strategies for protecting property, preventing business disruption and assisting recovery;
- Checklists of procedures that can be quickly accessed by staff during a flood.

If a flood is imminent, your main priority is to make sure that your staff are safe. However there may be other actions that you can take to prepare your building and it's contents to minimise damage and post-flood repair and restoration costs.

Business flood plan

Flood plan for _____ dated _____

Registered address _____

_____

Postcode _____

Staff contact list

Name	Address	Telephone/mobile	Emergency contact	Emergency telephone and address

Note staff who may require assistance in the event of a flood.

Name	Office location

Key locations

Service cut-off	Description of location
Electricity	
Gas	
Water	

Answer the following if applicable

	Description of location	How to protect from a flood (for example, move, cover, tie down)
First Aid Kit		
Oil based products (gasoline, oil, cooking oil etc.)		
Chemicals (including cleaning products)		

Protective actions

Identify stock, equipment and possessions that may need special protective measures, and describe the actions you will take to prevent damage in the event of a flood. We have suggested items and ways to protect them, but make sure you follow through on your plans.

think about:

- Computers;
- Tables / heavy furniture;
- Vehicles;
- Paper files;
- Electrical items;
- Chairs / stools;
- Databases;
- Soft furnishings;
- Computer files;
- Staff files.

ways to protect items

- Make a copy of important documentation and store in safe location;
- Raise items above ground level;
- Buy flood protection products;
- Buy new flood-resistant items;
- Move items to a safer location if possible – to an upper level of the building or off site.

Valuable item	Protective action	New location (if applicable)	Done
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Suggested basic building materials to help protect your property

If materials are not needed, leave the relevant section blank

Materials	Used for	Items to protect / where to use	Storage location	Done
Sand and sand bags (unfilled), shovel	Creating flood barriers (used with plastic sheeting)			☐
Tools – hammer, nails, saw	Boarding up doors, windows and openings, creating shelves			☐
Wood – plywood, blocks of wood	Boarding up doors, windows and openings, creating shelves			☐
Sturdy plastic sheeting	Sandbag barriers, pulling up around furniture and appliances			☐
Strong plastic bags	Putting around legs of tables and chairs			☐
Pallets	Raising stored stock above flood level			☐
Emergency power generator	Maintaining function of air conditioning units (can help dry out a building), running fridges and freezers, medical equipment if appropriate			☐

Identify people who can help you before, during and after a flood, and what they can do.

We have suggested ways they might be able to help, but you'll need to discuss this with them.

Name	Address	Telephone day	Telephone evening	Mobile

Ways people can help

- assistance with installing flood products;
- assistance with transporting stock/materials to new location if possible;
- provision of emergency storage;
- provision of emergency supplies or medical support if required.

discussion guide

This discussion guide sums up the key areas of flood planning. Some of this information can be found in this pack to help get you started.

Research

- Look at your existing business policies, and think about whether they are appropriate in the event of a flood.

Staff

- Make a list of **employees' contact details in the event of an evacuation**. This might include mobile telephone numbers, or numbers for their home or the home of a friend or relative;
- Think about staff who **may need special assistance** in the event of a flood (for example, elderly, deaf, blind etc.)

Security procedures

- **Locking windows, doors** and **setting the alarm**. You might need more than one person to help do this;
- Insurance policies – **Are you insured for flood damage**, business interruption and lost revenue?
- Employee manuals – You might **add flood safety to staff information packs**, or adapt job descriptions to include flood warden duties;
- Hazardous materials plan – You must ensure that **chemicals, oils** and other **substances in your possession are kept safe** and do not contaminate flood water;
- Health and safety assessment – Plan to **check the functioning of flood products and flood warning systems regularly**, just as you do for fire safety equipment.

Check codes and regulations that might apply to your business in the event of a flood. The following could provide guidance on the right actions to take:

- Occupational health and safety regulations;
- Environmental regulations.

Important contacts

Make a list of important telephone numbers, including contacts for gas, electricity, water and telephone providers.

Key locations

- **Know the location** of cut-off points for gas, electricity and water. Ideally, these should be marked on a map that is stored with your flood plan;
- Know the location of chemicals, oils or other materials that could be dangerous or contaminate flood water. These should be stored safe from floods and other damage.

Protective actions

- Note key stock, equipment and possessions that may need special protection from flood water;
- Consider things you may need during or after a flood (for example, sandbags, plastic sheeting, loudspeaker);
- See if it's **possible to move key operations**, such as shipping or customer services, to another building.

Suppliers and external links

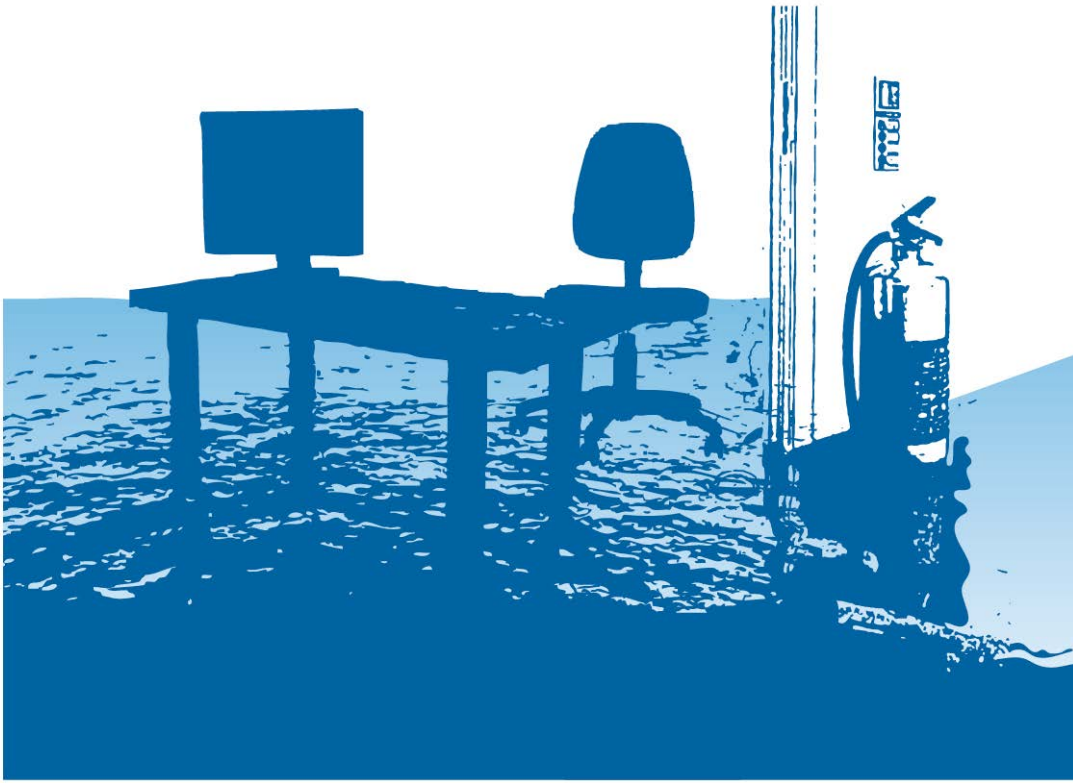
- Identify products and services you won't need in the event of a flood, or which suppliers may not be able to provide. **Make back-up plans** or arrangements for short-notice cancellation of deliveries;
- Consider contracting in advance with companies whose help you may need after a flood.

business checklist

Are you prepared for flooding?

If you answer no to any of the questions overleaf, there may be more you can do to protect your business.

The individual sections will give you valuable information on effective actions you can take to prepare for a flood.



If you can answer yes, please ☒, otherwise leave blank for no.

Know if you're at risk

- ☐ Do you know if you're at risk of flooding?
- ☐ Are flood warnings available in your area?
- ☐ Do you know how you can receive flood warnings?

Preparing a flood plan

- ☐ Do you know how your business will respond to a flood?
- ☐ Do you have a list of useful numbers including Floodline, local authority and insurance company?
- ☐ Do you know how to shut off your gas/electric/water supplies?
- ☐ Are your stock, fittings and valuable equipment stored above flood level?
- ☐ Have you developed flood contingency plans with suppliers and/or clients?
- ☐ Can you call someone to help you in the event of a flood?

Staff training and evacuation

- ☐ Are you aware of correct flood safety procedures for you and your staff?
- ☐ Have you trained your staff on flood safety procedures?
- ☐ Can your staff work quickly and efficiently to protect your business in the event of a flood?

Protecting your property

- ☐ Have you installed flood protection products?
- ☐ Do you have a stockpile of useful materials including plywood, plastic sheeting, sandbags (unfilled), sand, nails, hammer, shovel, blocks of wood and a saw?
- ☐ Have you installed non return valves in your toilets and drains?
- ☐ Do you and your staff have high ground where you can park your cars?
- ☐ Are your electrical sockets above flood level?
- ☐ Do you have computer equipment in the basement?

Flood insurance

- ☐ Do you have sufficient insurance cover in the event of a flood situation?
- ☐ Do you know what information your insurer will require to support a claim?

Evacuation

- ☐ Do you have an easy way to let your staff know about an evacuation?
- ☐ Do you know which roads will stay open in your area during a flood?
- ☐ Have you identified where staff can shelter in the event of a flood?
- ☐ Could you control staff panic during a flood?

understand your flood warning codes

Our warning service has three types of warnings - Flood Alert, Flood Warning and Severe Flood Warning - that will help you prepare for flooding and take necessary actions.

ONLINE FLOOD RISK FORECAST

What it means

Be aware.
Keep an eye on the weather situation.

When it's used

Forecasts of flooding on the Environment Agency website are updated a least once a day.

What to do

- Check weather conditions.
- Check for updated flood forecasts on our website.

FLOOD ALERT

What it means

Flooding is possible.
Be prepared.

When it's used

Two hours to two days in advance of flooding.

What to do

- Be prepared to act on your flood plan.
- Prepare a flood kit of essential items.
- Monitor local water levels and the flood forecast on our website.

FLOOD WARNING

What it means

Flooding is expected. Immediate action required.

When it's used

Half an hour to one day in advance of flooding.

What to do

- Move staff, stock and valuables to a safe place.
- Turn off gas, electricity and water supplies if safe to do so.
- Put flood protection equipment in place.

SEVERE FLOOD WARNING

What it means

Severe flooding. Danger to life.

When it's used

When flooding poses a significant risk to life.

What to do

- Stay in a safe place with means of escape.
- Be ready should you need to evacuate.
- Co-operate with the emergency services.
- Call 999 if you are in immediate danger.

WARNING NO LONGER IN FORCE

What it means

No further flooding is currently expected in you area.

When it's used

When river or sea conditions begin to return to normal.

What to do

- Be careful. Flood water may still be around for several days.
- If you've been flooded, ring your insurance company as soon as possible.

useful contacts

Fill in the contact details you may need if your business floods. Keep it in a safe place, where you can hold of it quickly.

	Company name	Telephone number/s
Environment Agency Floodline		0345 988 1188
Electricity supplier and meter number		
Gas supplier and meter number		
Water supplier and meter number		
Telephone provider		
Local authority emergency services		
Insurance company 24-hour number and policy number		
Insurance agent		
Local radio station for news alerts and weather updates		
Companies that may be able to help you after a flood		
Electrician		
Plumber		
Builder		
Equipment repair/suppliers		
Security services		
Water pumping services		
Emergency power suppliers		

Would you like to find out more about us, or about your environment?

Then call us on
08708 506 506* (Mon-Fri 8-6)

email
enquiries@environment-agency.gov.uk

or visit our website
www.gov.uk/environment-agency

incident hotline 0800 80 70 60 (24hrs)
floodline 0345 988 1188 (24hrs)

*** Weekday Daytime calls cost 8p plus up to 6p/min from BT Weekend Unlimited. Mobile and other providers' charges may vary.**

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