



YARM Flood Alleviation Scheme

Frequently asked questions and answers

Date: July 2024

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A. What's happening in Yarm.

Background:

- Yarm is at risk from flooding from the River Tees.
- The Environment Agency maintains 1.3km of flood wall in the town which, protects over 500 homes and businesses.
- The flood wall is intersected with a series of public access and flood gates that maintain access to the river from public areas and some residential gardens.
- There are currently a total of 32 gates which are closed when levels on the River Tees is high and the town is at risk of flooding.
- The closure of the existing gates when flooding is forecast is the responsibility of the contractor that installed the gates.
- The current Yarm flood gates continue to offer a good standard of protection to the local community, with all of the gates having been successfully water tested to full height by the current contractor.
- The comprehensive review followed a routine independent inspection of some of the flood gates which identified that the function of the gates could be improved and this improvement programme has continued through 2023, into 2024. New flood gates are being installed throughout 2024.
- Residents with floodgates on their private property have played a key role in the review and their feedback has shaped our decisions around the upgrade of the gates.

1. What is the Yarm Flood Alleviation Scheme?

Yarm has a long history of flooding, dating back as early as 1771, when Yarm High Street flooded to a depth of over 2 metres.

In 1993, the original Yarm flood alleviation scheme was completed. This scheme involved the construction of flood walls and flood gates to protect Yarm from the River Tees. Unfortunately, in 1995, these new flood defences were overtopped, and Yarm suffered flooding from the River Tees. Additional works which built on the previous scheme were then undertaken in 2002. These works involved raising the flood walls by 0.5m (to their current height) and the installation of numerous new flood gates.

In total, the Environment Agency maintains 1.3km of flood wall and 32 flood gates in Yarm, with the defences providing critical flood risk reduction to over 500 homes and businesses. A project to replace the flood gates in Yarm started in 2017, with 30 flood gates being installed by April 2018.

Unfortunately, the flood gates that were installed in 2017 are deteriorating faster than expected and are challenging for our staff to operate. Whilst the existing flood gates can and will continue to be operated in the short term to protect Yarm, our assessments have concluded that new and improved flood gates are required, providing Yarm with a greater level of flood resilience.

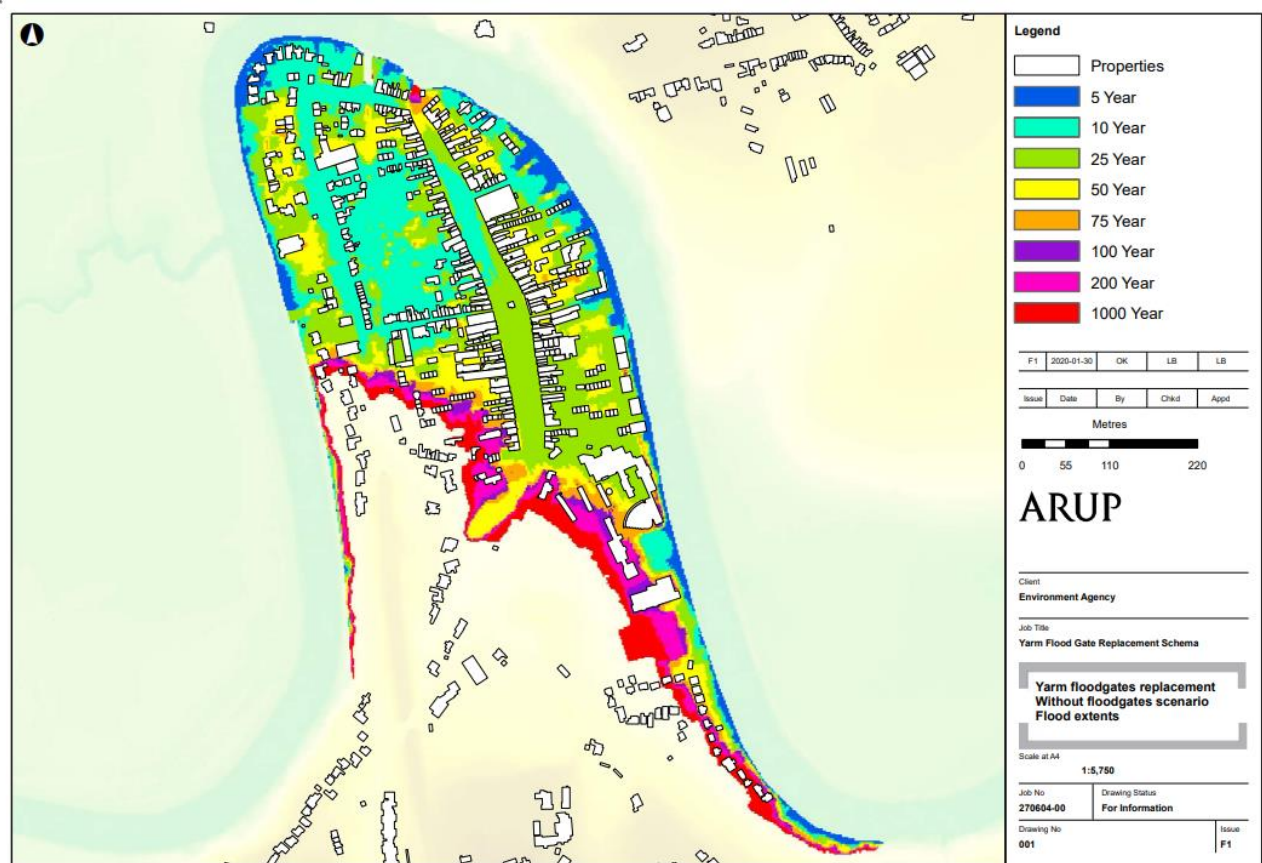
The Environment Agency is looking to replace the Yarm flood gates because:

- The existing gates are deteriorating faster than expected. They continue to protect Yarm however the gates do need to be replaced.
- We have a new flood gate specification – using this specification to design new gates means that we will have gates that are safer and easier to operate.
- Wide single leaf swinging flood gates can be dangerous to operate in windy conditions or on uneven ground, putting our staff at risk of injury. Consequently, we have made some gates smaller and changed some to sliding gates to make them safer to operate.
- Another benefit of the new gates is that we will be able to shut the gates more quickly. This means that we will be able to shut them later reducing the impact on residents. There will still be some instances where we need to close the gates early.

2. What would a flood map of Yarm look like without gates?

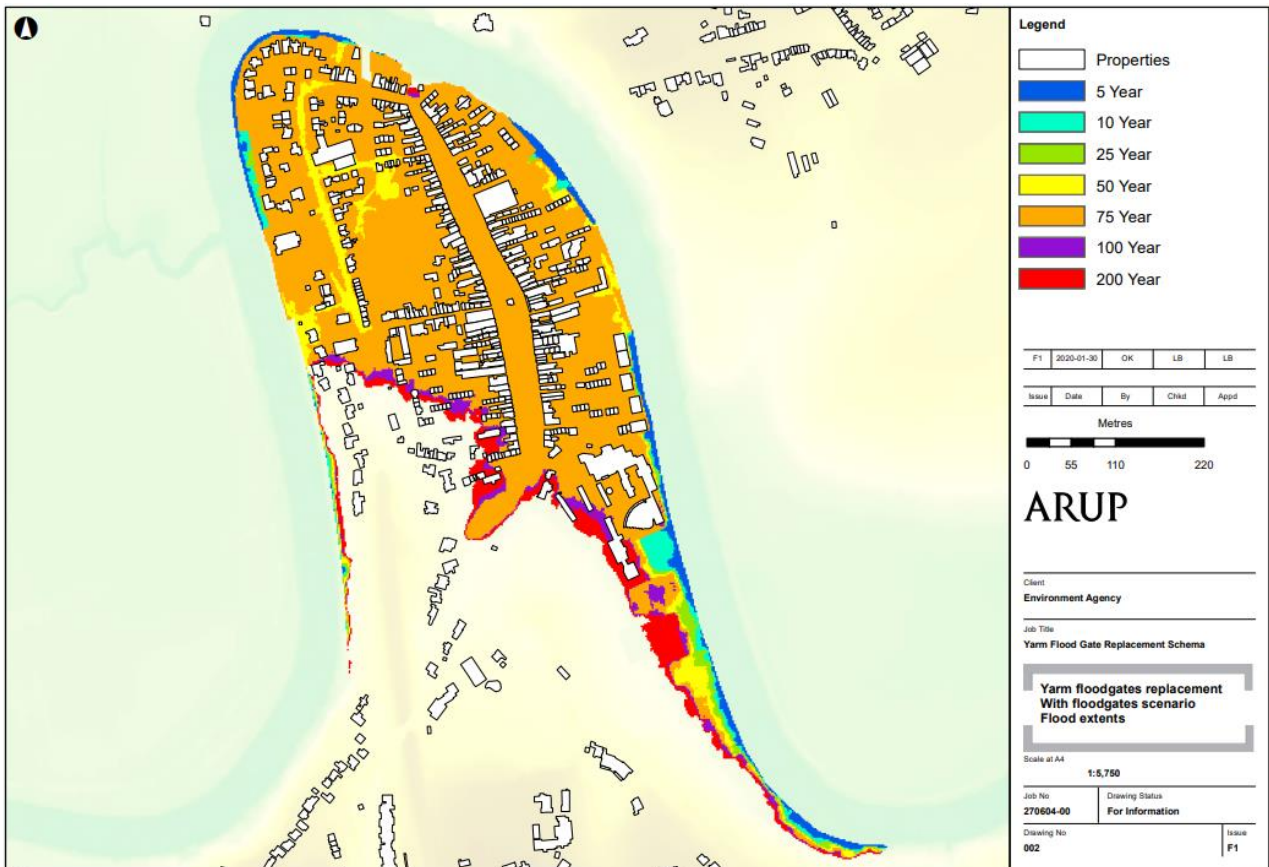
The flood map of Yarm if the gates were not replaced, below, highlights that major flooding occurs within the 5-to-10-year return period.

The flood map shows the effects of a flood event if the flood gates at Yarm were to be left open. This highlights that the first properties are affected in a 1 in 5-year event, and that by the 1 in 25-year return period event, most of Yarm would be flooded.



3. What does a flood map of Yarm look like with gates?

The flood map with the gates, below, shows that it takes a 1 in 75-year return period event to flood the same area of Yarm, with the flood gates and walls functioning.



4. What does a 1 in 10-year flood event mean?

Floods are often defined according to their likelihood of occurring in any given year. The most used definition in planning is the '1 in 100-year flood'. This refers to a flood level or peak that has a one in a hundred, or 1%, chance of being equalled or exceeded in any year. Similarly, a '1 in 200-year flood' has a one in two hundred, or 0.5%, chance of being equalled or exceeded in any one year.

Therefore a 1 in 10-year flood event has a 10% chance of occurring in any given year.

5. What are the plans for the future of the flood gates in Yarm?

The Environment Agency is driving forward the Yarm flood gates improvement programme. We have engaged with external partners and stakeholders, including residents who have flood gates on their property, as well as the wider Yarm community, to seek feedback and keep them informed of plans and progress.

The Environment Agency has appointed a new contractor to install new flood gates throughout 2024. It is anticipated that all the new flood gates will be installed by March 2025. Once complete, the Environment Agency will resume managing and operating the flood gates within Yarm.

The ongoing upgrade of the flood gates will ensure that every gate will be of a consistently high standard, safe to operate for our staff, with increased life expectancy, continuing to help to protect more than 500 homes and businesses in Yarm from flooding now and in future years.

6. Is Yarm protected during the construction period?

Yes, the Environment Agency and Contractor will make sure all works are carried out with the same standard of flood protection in place.

A temporary flood barrier will be installed during construction works prior to a potential flood event. All works will be subject to a permit system, where no works will be able to be carried out if a flood event is likely.

7. Will there be temporary gates while the new gates are fitted?

Yes, we have temporary works gate design to maintain the flood protection level for Yarm during the construction / installation of the new gates.

B. Operating the flood gates

14. Why do you shut the private gates first?

The private access gates take longer to close and only affect the individual residential properties, these form most of the work, take longer and are therefore closed earlier on a lower trigger (Phase 1).

The public access gates affect access to the riverside and the car parks and are therefore closed at the latest (safest) possible time to limit access restrictions and impacts on the public and day to day business around Yarm. (Phase 2).

15. Why can't the current flood gates be blocked up?

The Environment Agency has explored blocking up gates with landowners, but some need to be maintained for access reasons.

16. Why can't the current flood gates be made smaller?

The Environment Agency has explored reducing the size of as many gates as possible, but some need to be maintained for access reasons.

17. Why aren't the flood gates automated?

It's not possible to power all the gates, and as such Operatives will still need to attend site to make sure all others are closed.

C. Public access gates

18. What is happening with the public access gate types and widths?

Public access gate types and widths:

Wide single leaf swinging flood gates can be dangerous to operate in windy conditions or on uneven ground, putting our staff at risk of injury. Consequently, we have made some gates smaller and changed some to sliding gates to make them safer to operate.

Flood Gate 17, off Bridge Street, is being changed to a sliding gate, with a small reduction on the width from 2.9m to 2.7m.

Flood Gate 28, which provides access to Yarm Wharf car park, has been identified as a sliding gate, due to the size and operational forces required to close the gate in windy conditions. Small alterations to the gate position is required to house the sliding gate.

Flood Gate 30, on Silver Street, near Yarm Wharf, is to be reduced from 1.8m to 1.5m to lower the wind loading on the gate during operations.

Flood Gate 31, along Castle Dyke Wynd, agreement has been made to halve the current width to 1.8m.

Gate cladding type:

Agreement has been made with the Local Planning Authority that all new gates will be painted black on both the wet and dry side, with the removal of the current cladding to reduce additional weight.

Cladding Removal:

The existing flood gates in Yarm have a wood effect cladding on them. As part of the Yarm Flood Alleviation Scheme, we are proposing to exclude cladding on the new flood gates. By excluding the cladding, the overall weight of the new gates will be reduced, making them safer to operate and improving our ability to visibly inspect the gates and monitor condition.

All newly installed gates will be painted black on both the wet and dry side. The Local Planning Authority has confirmed that this is acceptable given the Environment Agency's permitted development rights.

19. Why will some gates become sliding gates?

Wide single leaf swinging flood gates can be dangerous to operate in windy conditions or on uneven ground, putting our staff at risk of injury. So we have made some flood gates smaller and changed some to sliding flood gates to make them safer to operate.

20. Why does the cladding need to be removed on the new gates?

The cladding does not affect the structure of the gate or improve the flood protection. However, it does add to the overall weight which increases the operational forces required to open and close. Removing the cladding reduces the weight for the site team to move.

21. How long will it take to install each new flood gate?

Estimated construction and installation time per gate is between 15 and 30 working days, depending on the size, location, and complexity.

D. Operational access improvements

22. Why are these improvements required?

Currently the operatives are accessing the gates from various uneven ground, and along grassed embankments. The Environment Agency has a duty of care to look after the work force and this includes supplying them with a safe place of work and a safe access.

We have developed designs for some access improvements along the west side of Yarm, to ensure safer access for our staff.

Along the west side of Yarm, access to and between flood gates for our staff can be difficult, as there are several different steps and very small working areas/platforms on the river side of the gates. We have developed proposals for some access improvements along the west side of Yarm to make access for our staff safer, which have been discussed with landowners and stakeholders.

E. Surveys and site investigations

16. What surveys have been done on the project?

We have carried out a Topographical Survey, Drone Survey, and a Bathymetric Survey.

The Topographic Survey produces a layout with all current contours, shapes, and elevation of the working area, along with highlighting street furniture to aid the consultants to design the new gates to suite the exiting surroundings.

The Drone Survey was used to inspect and record the river side of the wall and areas of the embankment not visible from the walkways.

The Bathymetric Survey was used to record the embankment profile and condition above and below the surface of the water and highlight any erosion that can't be identified from the surface.

What is a Topographical Survey?

A topographical survey is a map that shows the features and elevation of the land, both natural and man-made, this allows the consultants to design the gates to suite the existing ground.

What is a Bathymetric Survey?

Bathymetric survey is a type of hydrographic survey that maps the depths and shapes of underwater terrain.

What are site investigations?

- A site investigation simply is the process of the collection of information, the appraisal of data, assessment, and reporting without which the hazards in the ground beneath the site cannot be known.
- This can include:
 - Existing services within the ground
 - Condition of existing structures
- Understanding the ground conditions.

F. Environmental enhancements proposals

24. Are there any other measures that you are taking, as well as replacing the flood gates?

Yes. The Tees around Yarm has historically been modified for recreational and flood protection purposes, as well as for urbanisation. Because of this, through the Water Framework Directive (WFD) several mitigation measures have been identified to help maximise the waterbodies ecological potential.

We have therefore proposed to implement the following mitigation measures to create habitat, food sources, enhance existing structures, restore natural processes, and rehabilitate the banks. We propose to achieve this through implementing the following on sections of the river:

- I. Use of willow spiling in areas so that the willow roots grow into and strengthen the riverbanks.
- II. Use of natural materials in areas to protect the toe of the riverbank from erosion.

- III. Use of seeded coir matting in areas of high wear to reduce erosion of the bank.
- IV. Installation of coir roll and reeds to create new habitat along the edge of the Tees.

25. What is coir roll or matting?

Coir is a matting made from natural materials such as coconut husk fibres, which will assist seeds and roots to mature without being washed away within the river.

The proposed Environment Agency funded measures are designed to provide ecological improvement to a heavily modified waterbody. The proposals are natural, will create habitat, improve ecology, and will rehabilitate around 50m of riverbank, increasing the resilience of sections of bank along True Lovers Walk.

You can find more information about the proposed Environmental Enhancements on our webpage: <https://consult.environment-agency.gov.uk/north-east/yarm-floodgates>

Location 1

Erosion is occurring along the toe of the bank, with concerns raised about potential erosion into the adjacent footpath. To rehabilitate the bank, it is proposed to tether some large woody debris (tree trunks) along the toe of the bank anchored in place with a combination of rebar pins through the trunk itself and some living willow stakes. Behind the tethered trunk a section of willow spiling could then be installed and back filled with soil and seeded. The tethered trunk will aid in protecting the newly installed spiling allowing it to grow and form roots into the bank helping to strengthen the bank.

The second photo shows an Example willow spiling completed by the Tees Rivers Trust



Location 2

At location 2, there is an area of bank being used repeatedly as an access point by dogs, showing signs of erosion. The proposal here is to reinforce the bank surface using either a



natural geotextile (coir type material) or bank reinforcement mesh to create a more purpose-built area for this activity. The lower edge of the bank could be armoured further either with a coir roll or using a timber edge (tree trunk or similar). The reinforced area of bank can then be seeded with a mixture of native and locally sourced plant species, creating valuable habitat.

Location 3

Location 3 is upstream of the road bridge. This area has had previous works installed which have now failed (see pictures right of the stakes). Replacement of the coir roll would be recommended coupled with some willow spiling to further reinforce the toe of the bank. The willow spiling will grow into the bank, strengthening the bank. The total length of this section is 15m.



Location 4

Location 4 has previously had pre planted coir roll installed and these have grown to a certain degree. It is recommended that some additional coir rolls be installed in this area

(arrowed areas), possibly with a more diverse range of reeds. Increasing the reed area will provide a range of benefits, including additional shelter for birds and mammals, structure, food sources, and provision of localised shade and generally an increase in habitat complexity and biodiversity. The proposal should improve the resilience of around 10m of riverbank.



G. Delivering Yarm Flood Alleviation Scheme

26. What are the timescales for delivering the scheme?

Timescales

The Environment Agency contractor Bam Nuttall continues to carry out the installation of the new flood gates and associated works at Yarm.

We are happy to state that phase one of the works are now complete with a number of gates successfully installed and tested for operation. These gates include, Gate 2, 17, 18 and 23, Gates 27 to 30 at the rear of Sainsbury's carpark, and gates 31 and 32.

Bam Nuttall have now progressed onto phase 2 of the works, with gate numbers 19 and 24 installed and tested, and gates 20 to 22 in construction. Works are planned to progress on gates 1, 3 and 4 in July 24.

Gates accessing onto True Lovers Walk and a number of private gates will also commence in the July / August.

27. Why have trees needed to be cut back?

Tree Works.

To allow safe access around True Lovers Walk, and to reduce any accidental damage to the trees during the works, a specialist contractor has raised the level of some lower branches. In addition, to enable some of the new gates to be installed and safe working platforms to be constructed, some trees and bushes have had to be cut back and in cases removed. This has been undertaken by a specialist contractor overseen by an ecologist, with input from Stockton Borough Council.

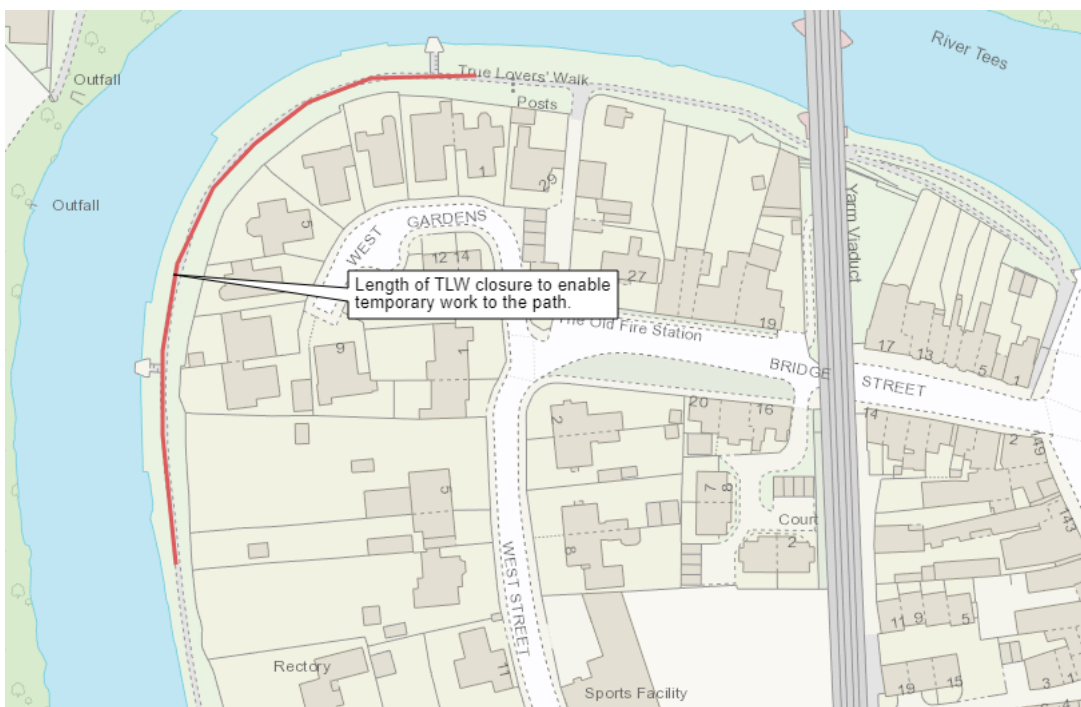
28. Will Access be restricted on True Lovers Walk?

Footpath Closures.

Restrictions will be in place and managed by both BAM Nuttall on site with communications and permits managed by Stockton Borough Council. Advance notices will be installed around site by Stockton BC with highway signs installed upon commencement of the works. To minimise disruption, localised Footpath closures will be in place with advisory notices in place regarding the closure and diversion routes.

29. Why has the path been widened, and will this impact the riverbank?

In order to deliver the flood gate upgrades and safe working platforms to the East of Yarm as part of the Yarm Flood Alleviation Scheme, BAM Nuttall on behalf of the Environment Agency will need to temporarily close a large section of True Lovers Walk from late July 2024 to November 2024.



This closure is necessary to facilitate temporary work to the footpath. Upon completion of the work, the area will be fully re-instated. We apologise for any inconvenience our activities may cause and thank you in advance for your patience and appreciate your cooperation.

Once the flood gate upgrades and associated works have been completed, the path and surrounding area will be fully re-instated and landscaping undertaken to restore the area back to its pre-condition.

We will engage with local stakeholders around the re-instatement, to see if we can incorporate any landscaping improvements which complement the work of the Friends of True Lovers Walk.

30. Will Large plant be used on the river side where the embankment has slipped?

When we come to replace the flood gates at Yarm, we won't be bringing machinery along the section of footpath where the minor bank slips have been noticed in the West of Yarm. However, when we are working close to the footpath and riverbank in other parts of Yarm, we will monitor the riverbank to ensure that our activities are safe and that the bank does not deteriorate as a result of our works.

H. Contact us

31. How can I get in touch with the Environment Agency?

We want to give the local community as many opportunities as possible to give us their thoughts and opinions throughout the project.

If you would like more information or have a specific question, please get in touch with us by email. You can also request to receive our electronic Yarm newsletter or by post.

Email

EA-YarmFAS@environment-agency.gov.uk

Citizen Space

You can also visit our Yarm web page to keep up to date with the latest developments, view newsletters and find out the dates for drop-in events in Yarm:
<https://consult.environment-agency.gov.uk/north-east/yarm-floodgates>

QR code below (for Citizen Space)



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

Then call us on

03708 506 506 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Or visit our website

www.gov.uk/environment-agency

Incident hotline

0800 807060 (24 hours)

Floodline

0345 988 1188 (24 hours)

Find out about call charges (<https://www.gov.uk/call-charges>)

Environment first

Are you viewing this onscreen? Please consider the environment and only print if necessary. If you are reading a paper copy, please don't forget to reuse and recycle.

32. Can the Environment Agency advise me on getting flooding insurance for my property?

Our local teams can provide you with up-to-date details of flood risk in your area for insurance purposes; this is known as an Insurance Related Request (IRR).

An IRR is only available where the likelihood of flooding from both rivers and the sea or surface water has been assessed as more than 1 in 1,000 (0.1%) chance in any given year.

The standard IRR provides information about:

- whether an area falls within or outside the area at risk of flooding from rivers, the sea and surface water
- whether there are any defences in the area and the standard of protection that they provide
- how likely flooding is, considering any risk management measure such as flood defences in the area

- whether there are any plans for flood risk management measures in the area

To request an IRR for the North East area, you can email northeast-newcastle@environment-agency.gov.uk. Please include the full address of the property in question and confirm that you are requesting an IRR. IRRs are free of charge, and we will usually provide a written response within 20 working days.