



Department
for Environment
Food & Rural Affairs

Local factors in managing flood and coastal erosion risk and property flood resilience: summary of responses

A summary of the responses to each question in the Call for Evidence

Date: 29 July 2021

We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.



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Details of the Call for Evidence

In the July 2020 Flood and Coastal Erosion Risk Management Policy Statement the government announced plans to increase the nation's resilience to flood and coastal erosion. To help us take forward some of the policies and actions in this statement, Defra issued a Call for Evidence on 1 February 2021. We asked questions that would help inform policy development on investment in flood defences, focusing on local circumstances and Property Flood Resilience (PFR) measures. The Call for Evidence was open for 8 weeks, closing on 29 March 2021. It was open to anyone with an interest in the topic. It included 38 questions, the first 5 questions asked for information about the respondent and the remaining 33 were divided into 2 parts.

Part 1 - Strengthening the assessment of local circumstances in the government's flood and coastal defence programme

The issues considered in this part include:

- communities that have been flooded frequently in the past - questions 6 to 12
- communities that are more economically vulnerable - questions 13 to 17
- smaller communities - questions 13 to 17
- communities that may be in greater need of property-level measures to resist flood water such as flood doors or gates - questions 18 to 23
- encouraging wider financial contributions to help with the development of a flood and coastal defence scheme - questions 24 to 31
- the data we collect to monitor and report against the improvements we are making - questions 32 and 33

Part 2 - Main enablers related to PFR

This part addressed:

- financing and other incentives - question 34
- planning policy, building regulation and standards - question 35
- training and technical expertise - question 36
- evidence and data sharing - question 37
- communication, knowledge and understanding - question 38

Summary of responses

This document contains a summary of the responses the government received to a Call for Evidence on local factors in managing flood and coastal erosion risk and property flood

resilience. The Call for Evidence opened on 1 February 2021 and closed on 29 March 2021. A total of 51 responses were received from the following groups:

- local authority – 15 responses
- other public sector – 3 responses
- community – 2 responses
- non-governmental organisation – 7 responses
- PFR company – 4 responses
- insurance sector – 6 responses
- other private sector – 3 responses
- academia – 5 responses
- other organisations – 1 response
- individuals – 5 responses

These included 32 online submissions and 19 written responses that were emailed to Defra. There were between 7 and 30 responses to each question. Three campaign responses of identical content were received. Campaign responses are when organisations co-ordinated responses with their members. A list of respondents (organisation names only) is available in Appendix 1. The summary of each question includes the number of responses, the type of evidence given, the most cited points or suggestions, examples of other points or suggestions and a selection of other relevant and useful information provided in the responses. Note that the views presented here are from respondents to the Call for Evidence only and do not necessarily reflect the views of Defra.

Part 1: Strengthening the assessment of local circumstances in the government's flood and coastal defence programme

Part 1 of the Call for Evidence explored how we can strengthen our assessment of local circumstances in the government's flood and coastal defence investment programme. This included whether specific changes should be made to reflect local circumstances, such as communities that have been frequently flooded in the past, communities that are more economically vulnerable, smaller communities, and communities in need of greater property-level measures to resist flood water. It also explored how we can ensure timely and wider financial contributions to assist with the pace of developing a flood scheme and how we can track progress of the overall programme. The Call for Evidence sought to address evidence gaps to support longer term policy action on these issues and to consider options that might allow swifter action to address these challenges in the short term.

Frequently flooded communities: summary of responses

Responses indicated a range of views about the factors that influence the definition of a frequently flooded community. Factors considered relevant to a definition included:

- impact or magnitude of flooding
- mental health impacts
- availability of resilience measures
- probability of flooding

Half of the responses to this section said that a community's historic frequent flooding should be considered in the funding or prioritisation of flood schemes. Respondents suggested 24 new approaches to improving the resilience of communities that have been frequently flooded. There was not a majority in favour of one approach. The 'local choices' approach described in the Call for Evidence had the most support (4 responses). Many respondents considered that a variety of new approaches were needed.

Question 6: How could we define frequently or repeatedly flooded communities for the purposes of the investment programme?

This question received 28 relevant responses and 3 were campaign responses. Only 10 respondents stated the source of the evidence for their responses.

Different factors were mentioned as being relevant for a definition of frequently or repeatedly flooded communities. These included:

- the number of flood events in the past 5 or 10 years
- frequency of flood warnings
- frequency of coastal erosion events
- number of mentions of flooding in historical records

There was a consensus that a definition should consider the number of flood events occurring in a defined area or community over a particular period of time. This varied from twice in one year to once in 10 years to 3 times in 60 years. The use of historical records was mentioned 6 times. It was noted that this may cause a bias due to underreporting of flooding from surface water, groundwater and non-main rivers compared to other sources.

Other factors raised included the:

- resilience of the community
- magnitude or impact of past flooding events
- size of the community
- time between flood events
- change in land use

- effect on mental health

Question 7: Drawing on evidence, should we consider a community's historic frequent flooding in the funding or prioritisation of schemes?

There were 28 responses to this question and 3 were campaign responses. Seventeen respondents agreed or partially agreed, one respondent disagreed, and 10 respondents did not clearly say whether they agreed or disagreed. Most responses did not provide a source of evidence to support their response.

Several local authorities discussed how evidence of historic frequent flooding could be used to strengthen the case for funding. Often smaller areas with repeated flooding struggle to meet the cost benefit criteria for Grant in Aid (GiA) and other funding opportunities are not available. One local authority agreed, mentioning the example of a community that has flooded 16 times since 2000 from multiple sources but cannot access GiA. This was because of the relatively low number of residential properties and the cost and complexity of the solution required. Respondents reported that where the PF score/cost benefit of a scheme does not stack up, schemes will not come forward. In these cases, respondents suggested that evidence of historic flooding could be used to identify priority areas where additional funding is required and to work with communities and politicians to lobby for additional investment.

Some respondents also proposed using frequency of flooding to help increase the PF score where it is currently below 100%. Where schemes are already eligible for GiA the frequency of flooding factor could be used to help prioritise and move them forward in the programme. Several local authorities noted that the ongoing cost and impacts of very frequent flooding are not currently considered in the PF calculator. One local authority said that enabling frequently flooded communities to access a higher proportion of GiA would have the additional benefit of reducing flood blight and supporting local economies and markets.

One respondent mentioned a concern that considering historic frequency could undermine the long-term strategic objective for reducing the level of flood risk nationally. This respondent felt that modelling and mapping potential risks using economic, social and environmental factors would be better.

Question 8: What evidence (other than that referenced in pages 12 to 13 of the Call for Evidence document) should we draw upon when considering whether a community that has experienced frequent flooding in the past should carry additional weight?

There were 25 relevant responses to this question and 3 were campaign responses. Operational and anecdotal evidence was offered in addition to grey literature. Grey literature or grey evidence is research produced by organisations outside of traditional

commercial or academic publishing and distribution channels. For example, white papers, government documents or technical reports.

Suggestions of evidence that should be considered when deciding if a community has experienced frequent flooding included:

- section 19 reports
- characteristics of flood events, such as flood duration and time of day
- economic indicators like property values or access to funding
- health indicators like mental health
- community factors such population density, political interest, community resilience, physical characteristics of the environment, number of flood alerts and warnings (near misses), measures needed to reduce flood risk and increase resilience
- outputs from surface water management strategic actions

Respondents flagged that some residents are hesitant to report flood events because they worry about their property value and getting insurance. There were also concerns that considering past flooding damages could lead to more funding in affluent areas where property damages are higher.

One respondent noted that many businesses that close due to a disaster like flooding never reopen.

Question 9: In addition to the approaches of (option 1) giving extra weight in the policy to flood schemes that better protect properties that have been frequently flooded in the past, (option 2) counting damages to previously flooded properties in the Partnership Funding calculator, and (option 3) prioritising previously flooded communities through local choices (pages 13 to 14 of the Call for Evidence document), what other approaches could improve the resilience of communities that have been frequently flooded?

There were 24 relevant responses to this question and 3 were campaign responses. Half of respondents provided evidence including grey and academic literature and case studies.

Twenty-four approaches to improving the resilience of frequently flooded communities were suggested. Three of these were mentioned by multiple respondents. The suggested approaches can be summarised into 10 broad themes:

- planning for adaptation
- widening approaches to resilience and partnerships
- including a wider range of measures
- mainstreaming and funding PFR

- widening funding streams
- adapting and transitioning properties away from risk
- involving citizens and community groups
- focusing on economic resilience
- supporting small flood and coastal erosion risk management schemes
- carrying out local remote sensing for surface water

Questions 10 and 11: What are the advantages (question 10) and disadvantages (question 11) of these approaches (in addition to other approaches you suggested in response to question 9)? Please refer to social, health, economic and environmental impacts, and the feasibility of implementing and undertaking the approaches. In your response, please outline which approaches you are referring to.

There were 22 responses to question 10, and 23 responses to question 11. There were 3 campaign responses to each. For both questions most responses did not refer to evidence. The responses are summarised below according to the approaches listed in question 9 and some other approaches.

Approach 1: Giving extra weight in the policy to flood schemes that better protect properties that have been frequently flooded in the past

The advantages of this approach stated in responses focused on its effect on increasing Partnership Funding scores overall. This would mean a scheme that better protects frequently flooded communities would receive greater support than one that protects properties that have been flooded once. A reported advantage was that this would restore confidence in communities that are frequently flooded.

One disadvantage highlighted was that this approach could be viewed as a reward for failing flood defences. Another disadvantage noted was this approach could still exclude some vulnerable communities.

Approach 2: Counting damages to previously flooded properties in the Partnership Funding calculator

The advantages of the second approach that respondents reported focused on its implementation. For example, flood frequency data could be used in the Partnership Funding calculator to demonstrate benefits such as reducing the effect on mental health. In addition, the frequency of flooding could also be weighted in a similar way to that for vulnerable or deprived communities.

The reported disadvantage of the second approach was that it could be biased towards wealthy communities and large storms due to the costs of damages.

Approach 3: Prioritising previously flooded communities through local choices

No advantages or disadvantages were given for the third approach.

One response mentioned that if any of the approaches suggested in question 9 make distributing funds fairer, that would outweigh the negatives.

Approach 4: Nature-based solutions approach

Reported advantages for the nature-based solutions approach included:

- wider social, health and environmental benefits
- addressing a large part of flood risk by retrofitting Sustainable Drainage Systems (SuDs)
- encouraging community support and improving places for people to live in
- considering long term adaptive solutions

The main disadvantages mentioned by respondents covered the cost, disruption and technical difficulties in retrofitting urban SuDs. Another disadvantage given was the challenges to deliver integrated water management approaches by multiple organisations and investment streams.

Approach 5: Holistic approach

The reported advantages of taking a holistic approach to resilience included:

- encouraging long term planning and certainty for communities with uncertain futures
- developing wider social, health and environmental benefits
- encouraging local communities to become active contributors to the delivery of local resilience, helping to build ownership.

A reported disadvantage was that this approach would need more and consistent monitoring and evaluation, making it time consuming, expensive and resource intensive.

Approach 6: Working with communities approach

The reported advantages for this approach included:

- local communities would become active contributors to delivery of local resilience, helping to build local ownership
- floods reporting would improve
- trust in the authorities would increase
- knowledge of flood risk management would increase

Reported disadvantages included:

- people misunderstanding what they are asked to do
- more support and guidance would be needed

- engagement could decline with the appearance of new risks (for example COVID-19), making it vulnerable to change

Question 12: Of the approaches provided, and your own, which do you consider the most suitable, if any, and why?

There were 17 relevant responses to this question with only 2 referring to evidence and that was to grey evidence.

Eight approaches were referred to as being the most suitable, although a reason was rarely given to support the selection. Approaches 1 and 2 in question 9 received one vote each, but no reason was given. Four respondents voted for the third approach in question 9 saying it will give more accountability. Three respondents prioritised nature-based solutions and highlighted the important issue of sustainable urban drainage systems. Others thought varying approaches would be most suitable, including:

- involving citizens in emergency planning
- calculating all jobs associated with agricultural land - because it will improve transparency and is important to the economy
- encouraging the uptake of PFR measures

Seven respondents said all approaches were needed. One respondent's reason for this was to ensure a move towards resilience strategies and move away from a reliance on resistance measures.

Economically vulnerable and small communities: main messages

We sought views on the difficulty of economically vulnerable or small communities to secure GiA. Most respondents agreed that it is difficult and provided suggestions for improving resilience of these communities to flood and coastal erosion including:

- adapting Partnership Funding rules
- alternative financing and funding measures
- participatory and community-based approaches
- address multiple forms of risk

Justifications given by respondents for the suggested new approaches included:

- their potential to attract financial contribution from others
- more accurate representation of damages
- promoting social justice and equity

Question 13: How difficult is it for economically vulnerable and small communities to secure GiA for flood and coastal defence schemes? Please detail sources of national and representative data that we should draw upon when assessing the nature and scale of the issue.

There were 25 relevant responses to this question. Eight respondents provided anecdotal evidence, 6 provided operational evidence and 2 provided evidence from grey literature.

Most respondents said it is difficult for economically vulnerable and small communities to secure GiA for flood and coastal defence schemes. Two noted that the difficulty depends on the scheme. Some also noted that this is reflected in the low number of surface water and groundwater schemes attracting GiA.

The main reasons the respondents gave included:

- funding and resources, including the cost of the process and the difficulty to secure private sector contributions
- procedural difficulties, covering both the complexity and length of the process
- methodological deficiencies, including the cumulative impact from different flooding sources not being accounted for
- social and institutional capital barriers, including that small communities often lack knowledge of flood risk management and grant processes
- technical constraints/contextual barriers, where local factors such as the presence of a World Heritage Site may add to the cost of a scheme

Several different sources of data were suggested to assess the nature and scale of the issue. These included social deprivation studies and national statistics data. Respondents also suggested a comparative analysis between the amount of urban or rural projects that are submitted, the number of projects taken forward, and those which achieve funding. In addition, a respondent suggested that properties that have or will benefit from GiA are tracked to identify cluster patterns of how areas are identified and prioritised. It was suggested that this could help assess what the gap is for these communities to access GiA.

Some respondents suggested how these issues could be addressed. For example, on funding and resources, there could be compulsory purchase of properties where the risk of flooding is frequent or severe. For methodological deficiencies, a multi benefit model was suggested to give greater weighting to the direct, indirect and consequential effects on local economies and infrastructure. Finally, it was suggested that ensuring the right information and data is available in a format appropriate for non-technical audiences could help address social and institutional capital barriers.

Question 14: In addition to developing a measure on local economic circumstances, what other approaches could provide better flood and coastal erosion resilience for economically vulnerable and small communities in the flood defence programme?

There were 28 relevant responses to this question. Two of these provided anecdotal evidence, 3 grey evidence, and 2 academic evidence.

Suggestions for other approaches included:

- adapting the partnership funding rules to, for example, favour less viable communities and allow funding rollback
- using alternative financing and funding measures, such as a renewal fund that would help to manage deteriorating assets more effectively
- having a dedicated community engagement resource that could be used to, for example, collect data or measure community flood resilience
- local Authorities managing the GiA funding because they are better suited to get match funding through established and maintained relationships in their community
- developing public sector (such as cross-department) and private sector cooperation agreements to improve problem solving and increase value for money
- correlating social, economic and health effects with traditional flood risk data sets to identify vulnerable communities
- simplifying the regulatory system to allow more small schemes to be delivered
- improving education on potential risks

Questions 15 and 16: What are the advantages and disadvantages of developing a measure on local economic circumstances (in addition to any other approaches you suggested in response to question 14)? Please refer to social, health, economic and environmental impacts, and the feasibility of implementing and undertaking the approaches. In your response, please outline which approaches you are referring to.

There were 18 relevant responses that gave advantages of developing a measure on local economic circumstances. Three provided evidence (grey and academic). There were 16 relevant responses that gave disadvantages and 3 provided anecdotal evidence.

Respondents raised 3 main advantages. They suggested that developing a measure on local economic circumstances:

- could attract financial contributions from others
- is a more accurate representation of damage
- could promote social justice and equity

Reported disadvantages covered the distortion this approach could cause to the overall prioritisation of investment in flood and coastal erosion management. Respondents also

mentioned that reliance on local economic circumstances could be misleading as people may have large assets but low savings and disposable income.

Advantages and disadvantages were also identified for some of the other approaches suggested in response to question 14. These included:

Using alternative financing and funding measures

This would have the advantages of providing new funding specifically for areas at risk that currently receive little or no funding and would facilitate links to be made with projects developed by non-government organisations and by other sectors. However, a more complicated funding system with more factors considered could increase the costs of modelling and preparing business cases.

Improving education on potential risks

One respondent noted that this has the advantage of delivering better mitigation measures that reduce economic and subsequently social and health impacts.

Respondents noted that building a sufficient evidence base for potential growth areas takes time and involves many contributors and other funding sources that have different deadlines for application and delivery. Further, it requires a certain skill base to assess local economic circumstances, according to respondents, and in small communities a combination of participants may be required to provide evidence/collect data.

Question 17: What indicators could we use to measure potential economic growth benefits and use these to inform the prioritisation of flood and coastal erosion schemes for the award of GiA?

There were 18 relevant responses for this question and 13 did not provide evidence.

A range of indicators were proposed in the responses, these included:

- property indicators, such as the number of new or existing properties that will be protected to a defined standard of protection
- gross value added (GVA) indicators, such as GVA in economic analyses for flood schemes
- contextual indicators, such as the number of new businesses created/founded in area in last 2 to 3 years
- comparative performance indicators, such as insurance claims data by post code cross-referenced against storm severity
- socio-economic indicators, such as potential population growth
- environmental indicators, such as biodiversity net gain
- resilience indicators, such as existing or potential community economic resilience

Respondents mentioned indicators will depend on the nature of interventions and flooding history. There also needs to be an understanding of a local authority's commitment to provide economic growth to an area. However, 2 respondents opposed the need for

indicators on economic growth benefits and suggested either focusing on economic benefits or human wellbeing.

Communities that need more property-level measures: main messages

Respondents highlighted that there is limited and conflicting evidence about the cost effectiveness and practicality of encouraging the uptake of flood resistance measures.

The main challenges cited to accelerating delivery of PFR were:

- lack of funding
- costs of putting together proposals
- reluctance to install resistance measures due to cost or disruption
- products not being available

Some respondents argued for a broader approach to delivery of PFR, such as including PFR within a whole catchment approach or linking PFR with wider resilience measures e.g. flood warnings and flood plans.

Please also refer to [Part 2](#) where relevant for questions 18 to 23. These questions relate to investment in PFR measures, whereas Part 2 relates to enablers of PFR.

Question 18: In addition to work referenced in the Call for Evidence document (page 23) what other evidence should we draw upon to consider the cost effectiveness and practicality of encouraging the uptake of flood resistance measures in the flood and coastal defence investment programme?

There were 18 relevant responses to this question and 8 referenced written evidence. Some of the evidence was already mentioned in the Call for Evidence document. One response referred to a case study example.

Seven respondents referred to the need for evidence about the effectiveness of resistance measures at the household level. Five of those respondents considered that there is a lack of evidence. One said that academic studies 'greatly differ' on the benefit thresholds in terms of flood probability and damage reduction versus the measures installed.

Respondents produced evidence that came to different conclusions about the relative value of community level and property level flood protection. For example, one local authority cited evidence in [Establishing the Cost Effectiveness of Property Flood Protection](#) that identifies distinctions between these 2 approaches and argues that these differences should be reflected in the appraisal process. In contrast, a PFR product manufacturer drew on practical experience to list a range of benefits associated with PFR.

Several respondents mentioned practical issues related to encouraging the uptake of PFR measures, including:

- the need to get widespread buy-in for measures to be effective
- potential difficulties in deployment of manual measures by elderly people
- difficulties in determining the appropriate product or measure in each situation because of the range of factors involved

Question 19: What are the key challenges in delivering flood resistance measures in the flood and coastal defence investment programme?

There were 28 relevant responses to this question from a range of respondent types. One reference to written evidence and one case example were given.

Respondents mentioned several challenges in the delivery of flood resistant measures. These included:

- funding is not available for resilience, adaptation or transition measures for coastal erosion
- lack of funding for isolated or small groups of properties - the post-flood recovery schemes are only rolled out when a certain number of properties are affected
- funding does not consider maintenance and replacement
- schemes are slow and costly to deliver
- insufficient supply of PFR products to meet demand
- homeowner reluctance to install PFR measures for a variety of reasons – for example, appearance, perceived impact on value of property

Funding challenges were mentioned most frequently (13 responses), although the nature of the funding challenge varied. Some local authorities raised difficulties in obtaining funding for small schemes and the lack of consideration of the different costs of PFR for different types of building. They also highlighted the overhead time and resourcing commitment for local authorities in delivering these schemes, such as getting agreement between neighbours who all need to be part of a scheme. One respondent highlighted the need to develop a pipeline of projects for funding.

Question 20: What lessons should we learn about what has worked well in delivering flood resistance measures in the flood and coastal defence investment programme, and what has not worked well, in the past?

There were 20 relevant responses and half were from local authorities. One response provided evidence from a non-peer reviewed source. Half drew on either operational or anecdotal evidence.

The most frequently mentioned lesson about what works related to communications and engagement. Examples included:

- early consultation with stakeholders
- increased engagement with the flood vulnerable constituents
- adequate resourcing of engagement activities

Some respondents stated that good engagement should be part of a process from developing conversations, through community involvement to scheme delivery.

Respondents also mentioned PFR maintenance. One said that establishing maintenance agreements between local authorities and homeowners would ensure consistency of approach. Additionally, homeowners and businesses who procure and fit their own PFR measures are more likely to ensure it remains fit for purpose. It was also suggested that the government should provide grants to proactively install measures to all properties in high flood risk areas, rather than focusing on properties that have already flooded.

One respondent noted that thresholds about how many properties flooded for GiA purposes and for local authority incident reports (section 19 reports) may systematically disadvantage clusters of households at surface and groundwater risk that flood regularly.

The most common learning about aspects that did not work well related to poor installation quality and performance of PFR measures. Other things noted in responses as having worked well included:

- linking the provision of free PFR to sign up for flood warnings & development of flood plans
- where the whole process for providing and installing PFR measures is provided by one independent company with a portfolio of products
- selecting PFR measures appropriate to local and individual circumstances
- quality of measures installed
- making sure that measures are acceptable to the homeowner

The most common learning about aspects reported as not working related to poor installation quality and performance of PFR measures. Other lessons about aspects of PFR that were considered to work less well included:

- limited use of PFR measures because the cost to benefit ratio is lower than for community flood defence, given the additional wider benefits provided by these community defences
- low uptake of grant funding for PFR by households when it is available
- underdeveloped market for PFR products which means insufficient products are available when demand increases following a flood event
- post installation there is evidence that PFR products are not being used as intended. Reasons given included that occupiers do not use them frequently enough to be familiar enough with them and that in some cases occupiers do not have the physical capacity to use them

Question 21, 22 and 23. In addition to approach 1 - reducing the household eligibility restriction (such that GiA is available for households in both the very significant and significant risk bands) and approach 2 - increasing the underlying payment rate for Property Flood Resilience measures, what other approaches could accelerate the uptake of Property Flood Resilience as part of the flood and coastal defence investment programme? What are the advantages and disadvantages of these approaches (in addition to other approaches you suggested in response to question 21)?

Questions 21 to 23 are linked questions to identify approaches (question 21) and explore the advantages (question 22) and disadvantages (question 23) of these approaches. Twenty-one people responded to these 3 questions. Only 2 respondents commented on the approaches suggested in the Call for Evidence.

The alternative or additional approaches suggested by respondents cover a wider range of aspects. Each approach suggested is grouped under 9 summary headings, showing their advantages and disadvantages, as identified by the respondents.

Approach 1: Relaxing the restrictions on availability of GiA to households in significant risk band

This approach would address evidence that some households currently in the significant flood risk band for whom PFR could be cost-beneficial are not eligible for GiA. This issue could be addressed by reducing the restriction in the Partnership Funding policy such that GiA is available for households in both the very significant and significant risk bands.

The advantages mentioned by respondents related to a more inclusive approach, enabling benefits for a range of property owners, greater availability for smaller or rural communities and increasing the success rate for PFR installation.

The only disadvantage identified in responses for this approach was that resistance measures only work up to the point of design. Consideration should be given to if property owners should also get to install measures that increase the recoverability of their home if there is water entry.

Approach 2: Increasing the underlying payment rate for PFR measures

This approach was to increase the payment rate of benefits specifically for resistance measures in the Partnership Funding policy.

One reported advantage of this approach was that packages of recoverability measures can further reduce the damage of high depths of flooding in comparison to resistance measures. The disadvantage of recoverability packages noted in responses, however, was that they are more expensive and intrusive than resistance measures.

Approach 3: Money set aside for PFR maintenance at the national level

This approach, suggested by respondents, would involve setting aside money at the national level for PFR maintenance and product guarantees. It was suggested that Lead Local Flood Authorities (LLFAs), or occupiers, could apply for money on an area basis. This could increase the uptake rate but also add an element of control to where funding is used.

A proposed advantage was that if used as part of an overall alleviation scheme it would provide additional comfort to home occupiers. They would know there is increased protection which could decrease mental health issues pre-flood incident. It was also suggested that it could be seen as a quick win while an alleviation scheme is in the construction phase. Respondents noted that increased reliance on PFR measures may defer a LLFA addressing the larger issue to resolving the cause of flooding.

Approach 4: Combine PFR measures with sign-up to flood warnings and flood plans

This suggestion was for local authorities to incentivise people to sign up to a flood plan and flood warnings. Reported advantages to this related to developing community conversation and engagement. However, it was noted that incentives could be misused causing damage to the scheme's reputation.

Respondents also commented that in areas where there are no flood warnings, occupants are not able to deploy active temporary resistance measures. They should therefore be eligible for more funding per property to encourage implementation of passive resistance measures. It was also suggested that this investment could be zero rated for VAT, to encourage property owners to invest.

Approach 5: Flexibility of timing when measures are installed

Another respondent suggested that funding through GiA should be available in areas at high flood risk where the risk management authority (RMA) has determined that a community level flood risk management scheme is not practical, when a property is undergoing some form of refurbishment. Advantages to this approach were given as an increase in the uptake of PFR measures in at risk properties and in contributions to partnership funding.

However, it was noted that for certain properties to be resilient, their neighbours would need to have a similar level of resilience to get the full benefit from the investment in measures and any scheme would need to account for this. Additionally, it was recognised that additional resources beyond the cost of the measures would be required to administer a local PFR fund to make sure the measures installed are appropriate and in accordance with the requirements of the programme.

Approach 6: Insurance incentives (including through a 'Build Back Better' programme).

A further suggestion was that FloodRe and insurers should recognise the use of PFR solutions for groundwater and surface water flooding and reduce premiums and deductions accordingly. It was noted that the best time for making homes resilient was after a flood when homes are being stripped out for drying. There were suggestions that grant money could be combined with the insurance pay-out and potential Flood Re Build Back Better funding, to both increase uptake and provide more money for good quality measures.

One response suggested that insurance could be a driver for self-protection by small or medium-sized enterprises (SMEs) if it is tied to the take-up of resilience measures and this is reflected in the price or conditions of insurance. It was noted that this would need to be accompanied by better understanding of the effectiveness of resilience recoverability measures and the implementation of standards and accreditation schemes.

Approach 7: Regulation and accreditation

Two responses suggested a regulation or accreditation system for PFR installers. This could make it a requirement that details of PFR installations are passed onto new owners or occupiers, alongside some form of support to consumers from government or local authorities. Reportedly, this approach would encourage PFR measures to be installed by reputable organisations and for homeowners to be provided with proper training in installing and maintaining devices.

An advantage given by respondents was that this approach would encourage PFR measures to be installed by reputable organisations. They said homeowners could also be provided with proper training in installing and maintaining devices.

A reported disadvantage to this approach is that there could be an increased burden ('red tape requirements') with this approach, which could stifle growth. One respondent commented that accreditation can become complicated due to the variety of products and the range of local factors that determine the appropriateness of different products. Another commented that there remains some uncertainty regarding the quality of PFR products and their installation, with a limited number of kite-marked products or specialists who can install the necessary measures.

Approach 8: Maintenance regime

One respondent raised an issue around assurance, maintenance funding and product guarantees. Authorities are currently not resourced for maintenance of PFR assets after installation. There was a suggestion about setting up a national fund to support continued maintenance of PFR. Authorities or occupiers would apply for a contribution when replacement or repair is necessary. This would increase confidence by users about the long-term value of PFR and make sure the funding is targeted.

Approach 9: Advice and awareness raising

A further approach given in responses was that creation of a trusted, impartial advice line would give households confidence that the steps they are taking would make a difference to their future resilience. There was also a suggestion that this could be based around development of the National Flood Forum Advice Line. Further, it was reported that enhancing awareness of PFR measures through education could help reduce social, health, economic and environmental impacts.

A reported disadvantage was that this had the potential to cause unnecessary worry or affect house prices.

Approach 10: Reaching a wider audience

The following suggestions were given for reaching a wider audience:

- widening engagement beyond owner-occupied properties, such as to landlords
- making funds available to any homeowner, similar to the flood recovery grant
- linking PFR to other improvement grants, such as energy efficiency
- providing more funding to properties where passive measures are needed, particularly where active temporary resistance measures cannot be deployed

A suggested advantage of reaching a wider audience by linking PFR is that it could help make greener, climate resilient communities, benefiting residents' health and wellbeing. Respondents also commented that in areas where there is no flood warning, occupants might not be able to deploy active temporary resistance measures, such as flood barriers. It was suggested that these properties should be eligible for more funding per property to encourage implementation of passive measures, with these being zero rated for VAT to encourage property owners to invest.

A suggested disadvantage to making funds available to any homeowner was that there would be a financial risk for installers in delivering measures prior to reimbursement through GiA. Other issues noted were lack of awareness of the potential for funding from homeowners limiting take up when grants were available. It was also noted that certain properties may need their neighbours to be delivering something similar to get the full benefit.

One respondent suggested allowing greater flexibility in the measures and nature of works eligible for grant funding (for example, resilience measures), resulting in a more effective, tailored solution to local circumstances and helping to provide time to act before water gets into buildings. It was, however, noted that 'end of pipe' solutions are not suitable as the primary form of managing water, as the kind of protection provided is often not explained or not understood.

Encouraging financial contributions to assist with the development of a flood and coastal defence scheme: main messages

Responses indicated that transparent information and continued dialogue throughout the approval process can help manage expectations and build the confidence of potential contributors. Increased confidence can lead to wider contributions. It can also facilitate lesson sharing and reduce the number of resources needed to prepare and deliver an evidence base and application.

Suggested approaches to encourage the timelier development of projects included:

- greater flexibility in the funding application process
- proportionate requirements for smaller schemes
- devolution of decision-making to local authorities

Challenges mentioned include the complexity and cost of early and open engagement. Also, the need to set clear deadlines without increasing bureaucracy and complexity and adding financial burden on risk management authorities.

Question 24: What good practice examples can you cite from the way infrastructure delivery programmes operate in other sectors, both in public and private spheres?

There were 12 responses to this question, 3 of which provided written evidence and 11 provided case studies.

Some good practice examples were given from the public sphere including in the transport, energy, healthcare, water and utilities sectors. Specific examples included:

- asset recovery programmes in the south east and Thames regions
- the Greater Manchester Strategic Infrastructure Board
- the Wakefield Eastern Relief Road scheme

General characteristics of these examples were that:

- the programmes worked directly with all impacted parties
- there was a strong partnership approach - for example funding was devolved to allow more effective local engagement
- they were flexible and were part of a wider, longer-term funding cycle

However, a respondent noted that there is limited comparability between flood and coastal defence schemes and other sectors given the former is driven by damages whereas the latter generally by growth.

Question 25: Drawing on evidence, what are the key factors that delay flood and coastal erosion risk management projects at Strategic Outline Business Case, Outline Business Case and Full Business Case stages?

There were 15 responses to this question, and one provided written evidence.

The most cited factor responsible for delay was the demanding and bureaucratic process involved in developing a business case. Some respondents said this leads to disproportionate costs and resource demands for small schemes and local communities. The lack of resources was another major factor given in responses where the reliance on consultants, staffing shortages and lack of familiarity with the process within Risk Management Authorities caused delays. Financial factors were also identified as an important factor in delaying flood and coastal defence projects. It was suggested that delays were caused where partners working to different internal approval timetables were not aligned to partnership funding approval requirements.

Question 26: How could clearer or more transparent information about the progress of a flood and coastal erosion scheme through its approval stages help drive progress and encourage wider contributions?

There were 18 responses to this question and one provided written evidence.

Some respondents suggested the need for better and early engagement with stakeholders and beneficiaries with more tailored communication of the benefits of flood risk management. Others suggested the use of an expert panel of retired chartered engineers within Regional Flood and Coastal Committees to guide the process and provide more explanation to investors and communities. Respondents listed the benefits of these suggestions including:

- increased investor confidence
- increased ability for Risk Management Authorities to align funding cycles
- reduced expenditure on consultant support
- increased transparency in the assessment process

Question 27: What incentives could be applied in relation to the Partnership Funding policy or appraisal policy to encourage wider financial contributions to come forward early on and in a timely manner?

There were 13 responses to this question. One provided written evidence and 3 provided case studies.

Incentives suggested included:

- financial incentives such as tax relief to businesses that take part in partnership funding
- providing more control and flexibility to local authorities such as the early release of GiA funding, decreasing the time taken to develop a business case to be shared with external partners
- process incentives such as a means of aligning private investment to flood risk management timescales

A case example was provided looking at Anglian Water, which was cited as being the only water and sewerage company in England with a dedicated Partnership Funding programme. Difficulties with deriving the maximum amount of benefit from this funding was detailed, including exploring how Ofwat, the Environment Agency and water companies could work more closely together.

Question 28: In addition to the approaches listed on page 27 of the Call for Evidence document, what other approaches could encourage the more timely development of projects as part of the flood and coastal defence investment programme?

There were 14 responses to this question, and one provided written evidence.

The additional approaches respondents gave included:

- increasing the flexibility of the process with proportionate requirements for smaller schemes
- a proposed local assurance scheme, with decision making and assurance devolved to local authorities to manage flood risk locally and increase accountability
- streamlining the process, such as adopting a consistent approach to the layout and methodology in the 'bid' process to allow for quicker and easier evaluation and comparison
- combine schemes into whole packages to improve efficiencies and flexibility - for example encourage RMAs to develop packages of work and secure funding on the basis the outcomes of the package as a whole, rather than the individual schemes within it
- improving the understanding of flood risks

Question 29. What are the advantages of the different approaches set out on page 27 of the Call for Evidence document (in addition to other approaches you suggested in response to question 28) for encouraging the more timely development of projects? Please refer to social, health, economic and environmental impacts, and the feasibility of implementing and undertaking the approaches. In your response, please outline which approaches you are referring to.

There were 8 responses to this question. None of them provided evidence or referred to the effect on social, health, economic and environmental issues.

Most responses referred to the potential advantages of early and open engagement with stakeholders and potential investors. This would allow useful information to be gathered on funding streams and investors' approval processes. Moving projects at pace, it was suggested, would also demonstrate to communities that their flood risk is being addressed.

The advantages of developing a local assurance scheme were identified in terms of the benefits it would bring in integrating funding decisions. Respondents said this would be more likely to lead to joined up delivery of schemes, ultimately saving money and increasing partnership contributions. The suggested use of an expert panel of retired chartered engineers in question 26 was noted as potentially helping guide the process within Regional Flood and Coastal Committees to achieve clearer and more transparent information to encourage wider contributions.

Question 30: What are the disadvantages of the different approaches set out on page 27 of the Call for Evidence document (in addition to other approaches you suggested in response to question 28) for encouraging the more timely development of projects? Please refer to social, health, economic and environmental impacts, and the feasibility of implementing and undertaking the approaches. In your response, please outline which approaches you are referring to?

There were 8 responses to this question. None of them provided evidence or referred to the effect on social, health, economic and environmental issues.

Disadvantages given for the approaches set out in the Call for Evidence included that they:

- do not allow for a range of different projects or unforeseen circumstances
- increase the complexity of the process, putting greater pressure on local risk management authorities and driving overreliance on consultants to deliver schemes
- could result in business cases not being prepared to the same standard, leading to further delays as errors and omissions are addressed

It was also noted that lack of investor confidence in a project that may take many years to deliver should be considered, especially with uncertainties surrounding COVID-19. It was thought that some potential investors may even question, why the private sector would invest in what is widely seen as a public function.

The disadvantages respondents gave of early and open engagement with stakeholders focused on its complex and time-consuming nature. This means it can often delay projects, particularly where there is conflict.

Question 31. How could we assess the potential, and apply it to the GiA formula, for some level of wider contributions towards flood and coastal defence schemes that may be eligible for 100% GiA funding (such as in areas where the economy is dynamic or there are beneficiaries who could contribute)?

There were 9 responses to this question. No specific evidence was provided in support.

Respondents' suggestions included:

- using metrics such as business rates or council tax
- using local knowledge from local authorities and local lead flood authorities who would be best placed to advise on the potential for wider contributions in individual projects
- assessing potential beneficiaries including where another party's infrastructure may be severely affected by flooding
- linking developer permissions to the provision of significant contributions towards flood risk infrastructure
- requiring an investment strategy as part of the business case to identify potential investors

Some examples were given of where high potential for wider financial contributions is overlooked because the flood scheme may be eligible for 100% GiA funding. It was highlighted that if the cost to deliver a scheme can be funded entirely by GiA then those eligible to use this funding will be less willing to seek external contributions because of the time and staff resources involved. There was also a suggestion that entire flood risk strategies could be funded based on the outcomes they deliver, rather than GiA be allocated to individual schemes. Respondents suggested the RFCC could then move GiA and contributions between schemes as they would be based on the wider strategy, enabling more marginal schemes to access funding.

Data we collect to monitor and report on the improvements made: main messages

This section asked for views on what additional data we need to collect, track and report on for the flood and coastal defence investment programme to ensure we measure progress towards our goals. Respondents anticipated challenges to collecting data against the additional items suggested in the Call for Evidence document. These challenges included:

- data accuracy
- relevance of the data
- timing/timeframe of data collection
- complexity of the process
- data availability
- additional effort and resources required to collect data
- data sharing
- insufficient infrastructure

Many issues were raised about current data sets. These included that:

- there is a need to demonstrate the financial benefit of current and any new data
- funding needs to be secured to collect and store new data
- resources (time and staff) are needed to identify and collect new data
- additional data could add complexity to an already complex business case process

Question 32: What, if any, are the anticipated difficulties with collecting data against the additional items in Figure 5 (page 31 of the Call for Evidence document)? What are the reasons for the difficulties and how could they be overcome? In your response, please outline which specific datum you are referring to.

There were 16 relevant responses to this question, but not all of them identified the data in Figure 5 they were referring to.

The main challenges given by respondents related to collecting additional data included:

- data accuracy
- the relevance of the data being collected
- the timing and timeframe of data collection
- the complexity of the data collection process

These were reported as being caused by:

- a lack of data availability
- the additional effort and resource required to collect the data
- data protection considerations
- the need to compare data

Some respondents also raised the question as to who should be responsible for data collection.

Potential solutions offered to these challenges included creating a central partnership hub or data platform that all risk management authorities could use and report against. Circulating clearer guidance to make sure there is consistency in data collection was also mentioned.

Question 33: What, if any, additional data (other than those in Figures 4 and 5 (pages 30 and 31 of the Call for Evidence document) could be recorded to monitor improvements and report progress of our flood and coastal defence programme? In your response, please detail what these data will help to track and what readily available sources could be used to support the provision of these data.

Sixteen relevant responses were received for this question.

Most respondents suggested some additional data were needed. Three respondents indicated that sufficient or too much data were already collected and the value in collecting additional data was not clear. They elaborated saying additional data should not place further resource constraints on organisations.

Suggestions for additional data included:

- additional local data
- the effects of flood warnings and extreme rainfall alerts in reducing damages
- pre-flood and post-flood insurance premiums
- numbers of properties that are flood resilient or resistant
- geo-referenced socio-economic data suitable for vulnerability analyses
- other household-level social data such as flood awareness or those with emergency plans
- data around natural flood management such as how it can affect water security and how it performs in different types of catchments
- time taken to recover from a flood or coastal erosion event

Respondents also raised issues around the collection of current datasets, including:

- data can be collected without a clear benefit or purpose
- resources (time and staff) to identify and collect new data is a challenge
- collecting and using additional data may add complexity to an already complex business case process
- property-level data may discourage homeowners from reporting

Part 2: Property Flood Resilience Policy

In the 2019 Policy Statement Defra committed to making sure buildings, important infrastructure sites and important public services are better prepared to manage flood risk. To achieve this, we want to accelerate uptake of Property Flood Resilience (PFR). However, to achieve this we need to overcome several barriers currently limiting uptake.

The Call for Evidence set out a range of 'enablers' which would support the PFR market and help communities be better prepared. These are:

- Financing and other incentives
- Planning policy, building regulations and standards
- Training and technical expertise
- Evidence and data sharing
- Communication and understanding

Under each 'enabler', we sought contributions under the following headings:

- Who could do it?
- How could it be done?
- Who should pay for it? and,
- Who should oversee it?

Financing and other incentives

Question 34: Action to increase uptake of PFR and mitigate flood risk could be undertaken by a range of actors, both for retrofitting existing buildings and new builds.

There were 22 respondents to this question.

The role of the government in providing financial support was highlighted by some respondents. Many others identified a range of institutions and organisations to be involved. For example, the Environment Agency, local authorities, lenders and insurance companies.

Many responses indicated that costs for PFR should be covered by both the public and private sectors. Some respondents suggested that government should provide grants to help the less wealthy obtain PFR with one proposing reprioritising the capital budget for flood protection to focus on PFR for properties at significant risk of flooding, which would be unlikely to benefit from a capital scheme. Among the private sector sources mentioned as having specific responsibilities for funding PFR were the construction industry, in cases where developer action had caused properties to be at greater flood risk, and the

insurance industry, which it was suggested should bear some of the costs of Build Back Better as this would reduce risks

There was no consensus on who should oversee further implementation and promote uptake of PFR. However, the predominant view was that it should reside with a public body.

Respondents mentioned funding a range of initiatives, including:

- insurance companies paying more for 'Build Back Better' approaches to repair and restore damaged properties
- amendment of government's funding rules to make PFR available to wider bands of at-risk properties
- encouraging owners to access private finance
- significant insurance claims are made for 'escape of water' and if this was included in the causes of flooding, it could help justify investment in resilience.
- It was also noted that some communities have rejected PFR schemes entirely and there were concerns by RMAs and other flood risk practitioners over the effectiveness of some PFR measures.

Planning policy, building regulation and standards

Question 35: These are useful levers to support an effective PFR market. Government wants to understand how these could be strengthened or consolidated.

There were 23 respondents to this question.

Respondents noted that policy and practices for PFR already exist but that these could be strengthened. There were different opinions about whether the Code of Practice established a base to which other initiatives can be linked, or whether it goes far enough. The voluntary nature of the Code of Practice was also seen as a barrier to its use. Closer working with MHCLG, to influence changes to better support PFR in these areas was highlighted. At least one respondent thought that better regulation in this area could overcome competitive barriers to flood resilience amongst developers.

It was suggested that PFR could also be linked to other improvement grants. For example, like energy efficiency and renewable energy, PFR should be seen by the homeowner as a form of home improvement. A link to insurance premium benefits would be a further incentive.

There were a range of views about who would be best placed to develop initiatives to promote use of PFR and what their individual roles would be. Respondents mentioned that government, housing developers, the PFR industry, building surveyors, British Standards Institution, academics, local authorities and the Construction Industries Research and Information Association (CIRIA) had key roles.

Respondents also mentioned that some of these organisations had a potential oversight role, including local authorities (building control), government, and Construction Industries Research and Information Association (CIRIA).

There were different opinions about who should bear any additional costs relating to planning, building regulations and standards. Some respondents said these should be covered by developers through the development process and others suggested a split between public and private funding. The issue of compliance checks on developments by local authorities was also highlighted.

Training and technical expertise

Question 36: Government wants to understand what further action needs to be taken to upskill professionals and installers working on PFR to deliver high quality installations aligned with the processes set out in the Code of Practice, to improve standards and consumer trust in the sector.

There were 19 respondents to this question.

Respondents considered there was an underdeveloped market for PFR products which meant that insufficient products or skilled individuals are available when demand for products peak, for example, after a flood event. Another commented there remains some uncertainty regarding the quality of the products and their installation, and that there is a limited number of kite-marked products or specialists who can install the necessary PFR.

Respondents saw implementation of PFR in property as a complex area requiring specialised PFR surveyors alongside strong standards and a formal accreditation or certification process for professionals. Two responses suggested an accreditation system for PFR installers should be put on a formal footing and to make it a requirement that PFR details are passed on to new owners/occupiers, alongside some form of support to consumers from government/local authorities. All but one of those who responded on oversight of the training process felt there should be a single point of accreditation and /oversight, to give consistency. However, one respondent commented that accreditation can become complicated due to the variety of products and differences in the circumstances where they are appropriate. It was noted that there could be an increased burden ('red tape requirements') with accreditation and training requirements, which could stifle growth.

Others suggested that training should be mainstreamed into more general 'continuing professional development' processes within the existing business environment. This would make sure that PFR measures were installed by reputable organisations and homeowners provided with proper training in installing and maintaining measures.

All responses about training agreed that the financial responsibility for funding accreditation should be on the people who receive the training. For example, companies or practitioners.

Two respondents suggested a need to consider the role of local people ('public experts') in training and expertise.

Data and evidence

Question 37: A more structured way of recording and sharing which and to what degree properties are flood resilient is required as well as determining the benefits from PFR in terms of reduction in damages and cost.

There were 19 respondents to this question.

It was suggested that different organisations could collect or deliver data and evidence on PFR measures including central government, the Environment Agency, Office of National Statistics, Flood Re, LLFAs, RMAs, and RFCCs.

Collecting data and evidence about new build developments was reported as important.

There are challenges and opportunities surrounding data collection. Challenges highlighted include ownership, defining what is meant by a resilience scoring and commercial sensitivities.

A narrative running through many responses was the need to understand more about the effectiveness of measures and consequential reductions in flood damages. This should cover data about what measures were most appropriate and effective in a range of contexts, for example, to types of property or nature of flood risks and individual user groups (where accessibility issues need to be considered).

Respondents explored principles for the oversight of evidence collection. There was a suggestion that it could be locally based, building on local authority databases, local knowledge, and existing flood mapping. Respondents also mentioned the independence of institutions undertaking initiatives related to data and evidence.

Many comments focused on opportunities for collecting evidence from historic grant recipients. This would help determine how the approach fared when it was used and its effect on recovery, as a basis for a single data source.

Communication, knowledge and understanding

Question 38: Government wants to understand what further action is needed to give individual householders and businesses confidence about the quality and accuracy of the information they access to determine their flood risk and the action they could take to make their properties more resilient.

There were 21 respondents to this question.

Challenges with current approaches for communicating PFR included that:

- poor quality messaging causes confusion. It should be made clear that the role of PFR is not to prevent floods but to reduce the level of damages in buildings. flood risk was still seen as a localised issue unlike the risk from fire or crime and there was a low awareness and engagement by those who live and work in high risk areas.
- the PFR market is still “emergent” which contributes to a lack of familiarity among consumers.
- lack of understanding about responsibilities - often householders fail to see the installation of PFR as their responsibility and some residents had unrealistic expectations about what local authorities could do.
- guidance is often too general / not specific enough to enable householders or business to understand their flood risk, what to do to manage it and how to choose between PFR options
- issues were highlighted with respect to Risk Management Authorities (RMAs) - these included the need for a step change in their attitude and behaviour towards PFR and better communication between RMAs and Flood Action Groups on local flood risk.
- Respondents suggested that installation of PFR was sometimes presented as a last chance option to the public in areas where no other approaches could be used. There was support for it being reframed as a positive choice for residents in suitable areas.
- Respondents cited the post-installation landscape as critical. There is a need to capture user experience with the measures. Success here would play a large part in improving the perception of the efficacy of measures.

It was suggested that enhancing awareness of PFR measures through education could help reduce the effects on social, health, economic and environmental issues.

Respondents did not expand on how it would do this.

Most of those who responded on how communications could be funded referred to government funding whether fully or in partnership with others. One response also suggested securing funding for promotion from those with vested interests.

Many responses mentioned that more than one organisation could play a role in messaging. Those most frequently mentioned included:

- local authorities
- citizen or community flood organisations (national and local), the National Flood Forum in particular
- mortgage lenders
- insurance sector, including the Association of British Insurers and Flood Re

Respondents also suggested that the Environment Agency could better promote learning and understanding through their community engagement managers and national PFR framework managers. However, some respondents also considered that the Environment Agency and local authorities (through Lead Local Flood Authorities) were not well-placed to communicate because public trust in them was low.

Examples were also provided of communications that are currently working well:

- Pathfinders - (which illustrate local voices and raise awareness)
- Know Your Flood Risk campaign
- the Code of Practice (seen as a starting point)

Ideas like 'property passports', flood performance certificates and learning from the outcomes of work on fire and building safety from Grenfell were also suggested as possible approaches.

Conclusion and next steps

Defra would like to thank those who gave up their valuable time to help us improve our evidence base in these areas.

The government is investing a record £5.2bn in a 6-year capital investment programme for flood defences. This investment will deliver around 2,000 flood schemes, benefitting every region of the country and will better protect 336,000 properties from flooding.

Defra will be using the findings from Part 1 of the Call for Evidence to inform future policy to strengthen the assessment of local circumstances in the government's flood and coastal defence programme. The responses to questions 6 to 12 on frequently flooded communities have helped inform options for a consultation. This consultation is expected to be published in Autumn 2021.

Developing our metrics, indicators and reporting arrangements for the investment programme will help Defra and the Environment Agency:

- identify new or ongoing issues in delivering the programme in order to resolve them quickly without impacting on the progress of the programme
- have a clear, consistent record of the programme's progress, allowing for greater scrutiny and accountability - this will also allow Defra and Environment Agency to demonstrate that the programme remains strong value for money and that it is achieving its forecasted outcomes and benefits

Further information about how Defra will measure the success of the current programme can be found in the [Investment Plan](#).

Defra will use the findings from Part 2 of the Call for Evidence to inform future policy to accelerate the take-up of PFR. Important points emerging from the Call for Evidence include:

- financing PFR is a matter for both the public and private sectors.
- planning policy and building regulations could better support PFR.
- more trained and accredited professionals are needed to drive up quality of installations.
- better data collection is needed, to record where PFR has been installed and on how effective it has been in reducing disruption and costs.
- the government has an important role to play in providing and facilitating information on the action people and communities could take to reduce their risk.

Appendix 1: List of individuals and organisations that provided evidence

Please note that this list does not include individuals and organisations that asked for their responses to remain confidential

1	ADA (Association of Drainage Authorities)
2	Anglian Water
3	Aquobex
4	Association of British Insurers (ABI)
5	Aviva
6	British Insurance Brokers' Association (BIBA)
7	Coastal Partnership East
8	David Wells
9	Department for Education & Skills
10	Devon County Council
11	Dr Ben Spencer MP
12	Dr Sarah Percival
13	Emergency Planning Society
14	Flood Innovation Centre, University of Hull
15	Flood Re
16	Fylde Borough Council
17	GJB Consultancy.co.uk
18	GMCA
19	Grantham Research Institute on Climate Change and the Environment, The London School of Economics and Political Science
20	Herefordshire Council
21	Historic England
22	JBA Consulting
23	Kent County Council

24	LABC
25	Leeds City Council
26	Local Authority
27	Local Government Association
28	Local Government Association Coastal Special Interest Group
29	Lucy Denny
30	LV= General Insurance
31	Mat Jackson
32	Mineral Products Association
33	National Farmers Union (NFU)
34	National Flood Forum
35	Norfolk County Council
36	Philip Davies MP
37	Pupils 2 Parliament
38	Royal Institute of British Architects (RIBA)
39	Scottish Government
40	South Tyneside Council
41	Southern RFCC
42	Sue Fitton
43	The Chartered Institution of Water and Environmental Management
44	University of Leeds
45	University of Southampton
46	Warrington Borough Council - Lead Local Flood Authority
47	Watertight (Flood Control NI Ltd trading as Watertight)
48	Wildlife and Countryside Link
49	Worcestershire County Council
50	Zurich Insurance UK

Appendix 2: List of abbreviations

ARP	Adaptation Reporting Power
BGS	British Geological Survey
CfE	Call for Evidence
CCMA	Coastal Change Management Area
CPA	Coastal Planning Authority
CIWEM	Chartered Institute of Water and Environment Management
CIL	Community Infrastructure Levy
FCERM	Flood and Coastal Erosion Risk Management
(FD)GiA	(Flood Defence) Grant in Aid
FRMC	Flood Resilience Management for Communities
GFDRR	Global Facility for Disaster Reduction and Recovery
GLA	Greater London Authority
GMCA	Greater Manchester Combined Authority
IDB	Internal Drainage Board
LLFA	Lead local flood authority
NERC	Natural Environment Research Council
NGO	Non-Governmental Organisation
NPPF	National Planning Policy Framework
PFR	Property Flood Resilience
RFCC	Regional Flood and Coastal Committee
RMA	Risk Management Authority
RSPB	Royal Society for the Protection of Birds
S.106	Section 106
SMP	Shoreline Management Plan

SME	Small and Medium Enterprise
SuDS	Sustainable Drainage System
TCFD	Taskforce on Climate-related Financial Disclosure