

Government grants to local authorities for household-level flood risk mitigation

Guidance

Revised: February 2009

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1. Introduction

Both the Government's *Making Space for Water* strategy and Sir Michael Pitt's review of the floods in the summer of 2007 recognise the need to use a portfolio of measures to manage flood risk and to include in this portfolio the use of property-level mitigation measures. In 2007, Defra commissioned research to assess the barriers to the up-take of such measures and ran a pilot scheme that explored the use of public grants to encourage up-take. The present scheme draws on that research and builds on the experience of these pilots. It offers local authorities in England the opportunity to apply for funding to identify and subsidise appropriate measures in areas where there is particularly frequent flooding and where community-level flood risk mitigation measures such as defence schemes are unlikely.¹

Although some conditions are attached to this funding (see the *italicized* portions of this document), local authorities are offered the opportunity to vary many aspects of the scheme to fit it with local circumstances and with the characteristics of particular communities.

The scheme aims to create examples of the collective application of property-level measures in order that these might demonstrate the strengths of this way of managing flood risk. It also aims to encourage the supply of expert, independent flood risk mitigation surveys and to stimulate the market for flood protection and resilience products. It should also prove a useful way of engaging with local at-risk communities and helping them understand their risk and the ways to mitigate it.

For any queries regarding the interpretation of this guidance or the application process, please call the Environment Agency Area Flood and Coastal Risk Manager for the locations you are applying for. If you do not have contact details for them, please call the Agency's national customer contact centre on 08708 506 506.

Should you wish to comment on the content of this guidance or the performance of the scheme generally, please contact floodresilience@defra.gsi.gov.uk.

1.1 Overview of the aims of the scheme

The objective of this government scheme is to promote the use of household-level flood protection and resilience measures in cases where flooding occurs frequently and other flood management solutions are not economically, environmentally or technically viable. To meet this objective, the scheme aims to protect groups of homes so that they demonstrate the benefits of protection and encourage other communities and individuals also to protect their homes. It also aims to help local communities engage with and understand their flood risk.

With initial funding of £5 million over two years, the scheme seeks to stimulate the supply of independent, professional and property-specific flood risk mitigation surveys and to encourage the development of new and innovative protection and resilience measures. The Government believes that flood protection and resilience are an essential part of the portfolio of tools for managing flood risk and intends that this scheme should raise the profile of this approach and make it a more normal and acceptable part of the response to managing flood risk.

¹ including, in areas with more dispersed communities, very small groups and also single, isolated properties.

Scheme aims

1. create demonstration areas that will promote the benefits of property-level flood risk mitigation
2. stimulate the supply of high quality, independent flood risk mitigation surveys
3. encourage the development of new and innovative flood protection and resilience measures.

The aims of the scheme will be achieved in two ways.

First, a selection of English local authorities will be offered funding to procure independent, professional surveys that will assess the risk of flooding for individual properties in high-risk areas and to recommend ways of mitigating that risk. This will include the identification of measures that might prevent or slow the ingress of water (*protection* measures) and measures to limit damage and reduce recovery times (*resilience* measures). This element of the approach will be preceded by community engagement and involvement, giving the affected community help to understand their flood risk and options available to them to mitigate that risk.

Secondly, these local authorities will also be funded to subsidise the costs of implementing appropriate measures. Due to the terms of the Land Drainage Act 1991, in this initial phase of the scheme these subsidies can only be applied to protection measures or to integrated packages of protection and resilience. They cannot be used in instances where resilience measures are the only or main mitigation measure being implemented. However, in the proposed draft Floods and Water Bill, the Government hopes to ease this restriction.

The scheme will be delivered by local authorities in partnership with the Environment Agency and community groups representing those at risk from flooding.

1.2 Overview of timetable and funding

Local authorities are invited to apply for funding in two rounds. Up to £2m in funding will be available for the first, *pathfinder*, round, for which applications must be received by 25th March 2009. This first round will provide Defra with an opportunity to learn how to improve the running of the scheme. A further £3m will be available for applications received by a second deadline, which will be in the autumn of 2009.

The aim of the grants is to prompt new projects to provide household-level protection and resilience. Applications for projects that have already been partially or entirely completed will not be covered by the scheme.

The evaluation of the two rounds of funded work will help determine whether there will be any further allocations in future years.

2. Eligibility and selection

Local authorities can apply for funding for any area that they believe would benefit from flood protection and that meets the eligibility criteria described below. Given that the primary criterion is that areas will have been flooded one or more times in recent years, it is probable that such areas will already be known to local authorities.

We understand that local authorities will not wish to engage in a complicated or onerous application process and have therefore made the eligibility criteria as simple as possible. Furthermore, we do not expect local authorities or the Environment Agency to conduct or commission any property-level survey work at the application stage of the scheme.

The following criteria should be satisfied for all areas that are to be included in the scheme:

A. Property types

- the main use of the properties in question must be residential
- except in the case of properties whose protection would be integral to the successful protection of attached residential properties. An example might be a shop either at the end or within a residential terrace.

B. Type and frequency of flooding

1. Fluvial and coastal flooding

- Floodwater must have entered buildings at least once since the beginning of 1998; and
- The area in which the properties are located must have an annual chance of flooding of at least 1 in 20 (i.e. 5%).

2. Sewer flooding²

- Sewer flooding is the responsibility of the water companies. It is therefore not the aim of this scheme to protect against this form of flooding.

3. Surface water flooding and groundwater flooding

- Floodwater must have entered buildings at least once since the beginning of 1998; and
- Buildings must have been flooded at least twice since the start of 1988.³

² Ofwat's guidance defines a sewer flooding incident as an event of flooding from a public sewer, whether foul, combined or surface water. It implicitly excludes flooding incidents from sewers that are caused by surface run-off, fluvial flooding, some types of highway drainage or other sources of flooding that are the responsibility of other agencies. As an approximate guide, flood risk recorded in the DG5 'At Risk Register' for the area concerned counts as sewer flooding.

³ There is currently insufficient data for the accurate modelling of surface water and groundwater flooding. This requirement provides an alternative means of establishing whether there is likely to be a high annual probability of flooding.

For flooding types 1 and 3, the flooding must have been above ground floor level for a significant number of the properties. For the remainder, flooding must have entered the building sufficiently to need remedial action such as drying of the under-floor spaces.

Consideration will be given to groups of properties that would have flooded but for ad-hoc activity such as diverting flood water using sandbag walls if it can be reliably established that flooding to the qualifying requirements would have occurred.

C. Prospect of a Community Scheme

There must be little or no prospect of the area concerned benefiting from a community scheme within the foreseeable future. When selecting areas for participation in the grant scheme, preference will be given to those locations that cannot be defended with a community scheme rather than those that anticipate having a viable scheme funded in the future.

The principle criterion listed above is that areas should have been flooded frequently, for the idea of household flood protection tends to be received more enthusiastically in communities with experience of regular flooding. It is likely that local authorities will already be aware of the areas within their boundaries where this is the case.

For areas where the risk is of fluvial or coastal flooding, further information will also normally be available from the local Environment Agency office. They might have records of which areas have been identified as suitable for household flood protection measures in their Catchment Flood Management Plans, in local flood risk management strategies or by Regional Flood Defence Committees.

Where the risk is from surface water flooding or groundwater flooding, systematic modelling of this risk will not normally be available from the Environment Agency and other forms of evidence will be acceptable. Acceptable evidence will include local authority records, outputs from Strategic Flood Risk Assessments and any other investigatory modelling that might previously have been conducted, as well as newspaper reports or other community reports. In the future, Surface Water Management Plans should also indicate areas where the use of household protection measures is considered appropriate.

The local Environment Agency office will be able to advise local authorities about prospects for nationally funded community-level flood risk mitigation measures such as defence schemes.

It is important to note that participation in this grant scheme will not preclude an area being defended by a community-level scheme in the future.

3. Process overview

The scheme runs from 17th December 2008, the date of the Secretary of State's announcement, until 31st March 2011. Applications for awards of funding are invited in two rounds. The first invitation for applications closes on 25th March 2009, three months after the launch of the scheme. Dates for the second call will be announced in early summer. It is expected that the second call will close in the autumn of 2009. Appendix C outlines the information that is likely to be required for the application process.

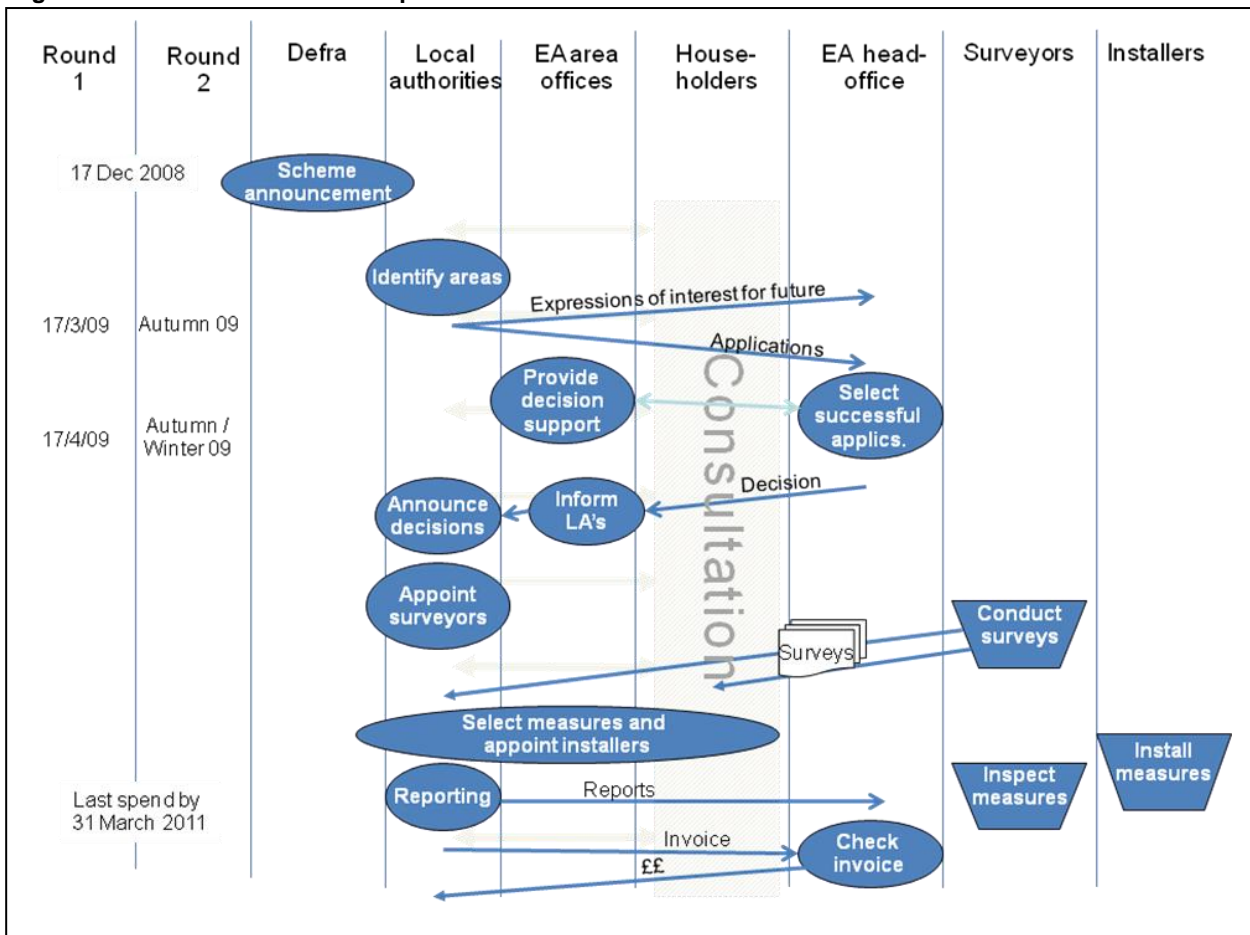
An allocation of £2m is being made available for the first application round and £3m for the second round. Monies allocated in either round can only be claimed if they have been spent by the close of the scheme on 31st March 2011. Grants will be fully paid on receipt of financial audit approval.

Although the initial phase of the scheme ends in March 2011, it is possible that more funding will become available after this date.

To help forward planning, we ask local authorities who anticipate that they will want to apply for funding in Round 2 to send Expressions of Interest by 25th March 2009. To assess the potential demand for future possible schemes we ask authorities to send expressions of longer-term interest by autumn 2009.

Details of where to send applications and Expressions of Interest are available on the Defra web site. <http://www.defra.gov.uk/enviro/fcd/adaptationandresilience/propertyresilience.htm>

Figure: 1 Overview of the scheme process



Round 1

The maximum amount of funding available for Round 1 applications will be £2m. One of the aims of this *pathfinder* round will be to test and review the running of the scheme so that improvements can be made for Round 2 and any potential future funding rounds.

There is no restriction on the number of properties per application and we therefore have no fixed target for the number of applications that will be included in this round. However, we anticipate that the funding will be shared between approximately ten applications, although this number will depend on the range of application values received and the quality of the applications. Any applications that meet the criteria that are not awarded funding will automatically be taken forward for consideration in Round 2.

Community participation will be essential for the implementation of successful schemes. Therefore, local authorities should provide evidence of any existing mechanisms for community engagement with affected communities (including, for example, with flood action groups and other community organisations such as parish councils) and should outline plans for community involvement in the proposed scheme.

Decisions over the allocation of funding will be taken by the Environment Agency's head office. It will take advice from appropriate Environment Agency area offices, which will consider the appropriateness of applications and whether the introduction of protection measures in the application areas would unduly increase the flood risk in nearby locations. The Environment Agency head office will inform area offices of their decisions and they, in turn, will inform local authorities of their decisions within a month of the application deadline. Local authorities will then be able to announce the decision to the communities affected and begin the process of consultation.

If the scheme is oversubscribed, prioritisation will be determined on the basis of depth and frequency of flooding and evidence of commitment to the principle of community involvement. In order to ensure that the demonstration benefits of the schemes are well distributed, the Environment Agency will also seek to ensure that there is a reasonable geographical spread of schemes.

Successful Schemes

Once an application has been approved, the first step in any scheme should be to develop the approach to community involvement. Consultation and involvement with the local community should be a constant element throughout the development and implementation of schemes. Local authorities might also wish to establish a local working group with partners such as the Environment Agency, community groups and any pre-existing groups.

Case study: Birmingham City Council

Birmingham City Council employed a full-time officer to work with a local community that had experienced frequent flooding. Using flood relief money from the 2007 floods, as well as funds from other sources, this officer helped set up a flood action group. The group contributed to the development of a flood response strategy and the selection and implementation of flood protection for individual homes. A key factor in this success was the longer-term support that this officer was able to provide to the community.

Aside from the consultation element outlined above, the next step will normally be the appointment of organisations or individuals to evaluate the flood risk at the properties in question and to survey each property to determine what flood protection and resilience

measures are needed. Further information on this is provided in Section 5.4. The surveys should identify the types of products that offer suitable improvements to protection and resilience, but should not suggest particular manufacturers or installers.

On completion of the survey process, the next stage will be for local authorities to identify suitable suppliers for the provision and installation of the measures identified by the surveys and take forward the procurement process. Further information on quality standards and procurement is provided in Section 4 and Section 5.6. They will also be expected to provide a final report.

Case studies: Nottinghamshire and Cumbria

In the village of Gunthorpe, Nottinghamshire, a single company was chosen to provide all the protection measures for the village. This had the advantage of providing bulk discounts and lowering administrative costs, but it also reduced the flexibility of the scheme. At least one property remained unprotected because the owner felt that the product on offer was unsuitable for his circumstances.

In a Defra pilot in Appleby-in-Westmorland, the local authority selected a number of suitable protection products and then left it to householders to choose between them and to commission their installation. Householders made their choices on the basis of cost, ease of installation, aesthetic impact and the availability of a reputable local supplier.

With the exception of the need to spend the grant money by the end of the financial year 2010/11, there is no specified timeframe for completion of this work. However, we are keen for lessons from the *pathfinder* round to be used to benefit participants in Round 2, so we encourage participating authorities to bear this in mind when determining their implementation timetables. Local authorities should also bear in mind the need to allow sufficient time for meaningful consultation with affected communities. Furthermore, the experience of some of the pilots suggests that, due to poor weather and shortage of daylight hours, winter might not be the ideal time for implementing protection measures that involve work on the outside of properties.

Round 2

The arrangements for Round 2 will be reviewed in the light of an evaluation of Round 1. However, we anticipate that the arrangements for this round will be broadly the same as those for Round 1. The maximum amount of funding available for Round 2 will be £3m (plus any under-allocation from Round 1).

Awards for Round 2 will be announced in the autumn of 2009, a month after the closing date for applications.

4. Quality standards

All flood risk mitigation measures funded by the grant should be implemented using products of a sufficient standard to provide a balanced overall package of protection and resilience for

the homes concerned. Household surveys will identify the mitigation measures to be implemented and the performance expected from the measures used. Survey reports will also list a selection of products that meet those standards.

The selection of products and standards of flood performance should be made in context and with suitable professional judgement. For example, where a manufacturer has evidence that a door-board to cover one width of doorway meets the performance specification, it may be reasonable for a competent professional to judge that a door-board of a similar design but for a slightly different width of opening would provide the same level of protection.

Surveyors will be expected to familiarise themselves with the range of flood mitigation products on offer by reference to sources of information such as the Environment Agency, the National Flood Forum, etc., and to verify performance claims where otherwise not established by Kitemarking or similar schemes.

5. Implementation

5.1 General: constraints and flexibility

Subject to the constraints and objectives set out in this guidance document, local authorities are free to implement the scheme in the most effective manner consistent with their powers and responsibilities. They may, for example, wish to run the scheme through their housing renewal departments or in line with other grant schemes that they have in operation.

The intention of this scheme is to encourage those who are at risk of frequent flooding to take appropriate measures to protect themselves and their communities and to improve resilience. Therefore, for the development of any effective scheme, it will be necessary to demonstrate awareness of the circumstances (such as age, infirmity and financial circumstances) of those at risk when devising an implementation approach whilst avoiding the encouragement of too much reliance on funding assistance.

5.2 Funding allocations

General

The following sections indicate the maximum sums that may be available for a project. However, as funding is limited and the scheme is expected to be over-subscribed, allocations to each project are likely to be less than the full amounts applied for. The Environment Agency will consider all applications on their merits and allocate funding to achieve the best overall value from the scheme.

Grant memoranda

The Environment Agency has agreed with the Audit Commission that the work can be covered by existing grant memoranda. It is not planned to create a new grant memorandum to cover this work.

VAT

The sums noted below are the maximum sums that may be claimed from the Environment Agency. Where authorities are able to claim back VAT, they should do so and any claims from the scheme through the Agency should exclude the VAT. This will maximise the work that can be done accordingly. Authorities will be responsible for claiming the sums appropriate to their circumstances as no payments above the sums below will be made to cover VAT separately.

Transaction / admin costs

The first of the two funding components, administration costs for schemes, will be funded at a rate of up to £700 for each property that is provided with a property-level survey. Only in exceptional circumstances will higher costs be funded. In such cases, local authorities should make the case for extra funding in their applications.

Monies for administration costs will only be paid out when evidence of expenditure has been supplied and the Environment Agency is satisfied that monies have been spent appropriately. Appropriate spend includes, for example, the cost of consulting with recipient communities and the cost of tendering for the supply of surveys and the provision of protection measures. Staff costs on these activities would generally not be included as these are already covered by funding through DCLG. However, the costs of staff wholly employed on this work whose roles are backfilled would be eligible. The costs of external providers of 'admin services' would be eligible.

Costs of surveys and flood risk mitigation measures

The second of the two funding components relates to the costs of providing surveys and suitable flood risk mitigation measures. Maximum allocations will be calculated using a fixed formula that multiplies the number of properties considered likely to qualify for measures by £5,000. This sum covers the combined costs of the surveys and the measures.

We wish to encourage the principle of flexibility in the use of these monies. The only conditions for their use will be as follows:

- *No more than £7,000 of the money is to be spent on flood risk mitigation measures for any one property.*
- *The money is only to be spent on measures that can be shown to meet the appropriate quality standards (see Section 4).*
- *The money is only to be used where all the necessary measures recommended in the survey designed to exclude water from the property (including any necessary pumping) are to be implemented. To ensure that packages of measures are implemented in their entirety, where packages cost more than £7,000, funds to cover the short-fall will need to be found from other sources before money from this scheme can be used,*
- *The average amount of grant money spent on the implementation of measures to exclude water from the property (including any necessary pumping) must not exceed £4,500 per property participating in the scheme. This sum excludes the survey cost element.*

- *Money must only be spent on properties where the primary strategy recommended by the survey is protection or where partial protection is essential for the successful protection of adjoining properties.*
- *None of the money is to be spent on the protection or resilience of conservatories, garages or outhouses, unless such measures are essential for the protection of other structures that are included in the scheme.*
- *None of the money is to be spent on measures that are for use outside the curtilage⁴ of the properties concerned. If such measures would be more cost-effective, they will need to be financed from other sources.*

We hope that local authorities will look to find further contributions to add to the money that Defra is providing – as happened in the pilot schemes – in order to maximise the number of properties that benefit from improved flood protection measures. For example, in deciding how to employ the component of the grant that relates to subsidies of measures, local authorities should bear in mind that one of the broad objectives of this scheme is to encourage greater local ownership of the idea of flood risk management and greater responsibility for its practice (see 1.1). In the light of this objective they might want to ask for financial contributions from some or all participating households. They should also bear in mind the desirability of instilling amongst residents a sense of personal responsibility for the maintenance, storage and deployment of any products that are provided.

The aim of the grants is to encourage new examples of projects to provide household-level protection and resilience. Applications for projects that have already been partially or entirely completed will not be covered by the scheme.

Maintenance of measures

There is no funding allocated for the ongoing maintenance of any measures implemented. Authorities should ensure that the protection and maintenance of any measures implemented is clearly assigned (see also 5.7 below).

5.3 Community engagement and responsibilities

Evidence from Defra’s pilot scheme, and from local authorities that have implemented similar schemes, suggests that the involvement of beneficiary communities in the planning and decision-making processes is essential to a successful scheme. The evidence suggests that, without such involvement, residents are less likely to support the use of household-level protection and that take-up levels are lower. For these reasons, *residents should be actively involved in planning and in decisions around the selection of protection and resilience products and should be kept informed of the progress of the scheme.* Engagement activity should also build understanding of the limitations of household-level measures.

Community engagement is considered to include (but not be limited to) raising awareness of the issues around flood risk and the impacts of flooding; discussion of options for property-level measures with potential participants; consulting with them to establish which arrangements would work for them; persuading them to participate, especially where a lack of participation would have an adverse impact on a neighbour.

⁴ Curtilage means the ‘small area about a building’.

Research into flooded communities

Research shows that floods can divide those who have been flooded from those who have not and that this can lead to conflicts of interest. For example, flooded residents might want flood protection while others might fear this would stigmatise the area. An awareness of such divisions can help those planning public consultation over flood risk management measures.

The same research shows that an absence of active communication is sometimes interpreted as an absence of action and suggests that the agreement of a communication strategy can help avoid such misunderstandings.

From a paper presented by Coates, T. to the International Conference on Flood Recovery, Innovation and Response, 2008

Local authorities should seek to establish long-term commitment and ensure strong community engagement. This would involve gaining the commitment of community members to the proper care, maintenance and deployment of measures. It should also explore with communities how residents can help each other with the management of the risk, for example by assisting each other with deployment in the event of a flood warning. And it should provide guidance on longer-term issues, such as where to get repairs or replacements. Components of protection products can corrode, perish or become blocked up with dirt and will in some cases need regular cleaning and inspection. Some manufacturers offer maintenance contracts for this purpose. Alternatively, householders can be encouraged to look after the products themselves or through co-ordinated community action.

Case study: Leeds City Council

In their Defra-funded pilot, Leeds City Council provided protection for seventy properties on an estate of owner-occupied houses that had flooded three times in the previous four years. The experience of the floods had strengthened the sense of local community but had also generated anger towards the authorities. Personal contact between residents and council staff, supported by the facilitation of the National Flood Forum, successfully diffused this anger. The result was constructive involvement of residents in the selection of protection measures, a sense of commitment to their effective use and a willingness to provide mutual help in the event of a flood warning.

Case Study: Wealden District Council

In a Defra pilot in Uckfield, East Sussex, Wealden District Council asked grant recipients to contribute towards the cost of protection measures, in the expectation that this would encourage more careful maintenance.

Flood fairs

Experience has shown flood fairs to be a good way of promoting community engagement and strengthening relationships between community members and statutory bodies.

In the Defra pilots, flood fairs were facilitated by the National Flood Forum (the NFF). This experience suggests that:

- flood fairs should focus on the presentation of objective, clear information on the different kinds of generic mitigation measures
- flood fairs should provide opportunities for one-to-one conversations between experts and the public but should also include presentations on the benefits and limitations of protection and resilience
- flood fairs should present evidence of the effectiveness of measures (including, for example, videos of measures being used in floods and testimonials from flood victims who have experience of the measures).

Advice on consultation methods

Under the Environment Agency's Resilient Homes project, it is currently piloting the provision of advice to local authorities and other partners on how to integrate flood resilience more coherently with the wider resilience agenda. This includes the relationship between flood resilience and energy consumption, water usage, green infrastructure and adaptation to climate change.

The advice developed by the Environment Agency will address the question of how to create an integrated approach that focuses on the needs of residents and that maximises community engagement in order to create resilient and sustainable communities. It will provide advice on specific techniques for motivating residents and on options for developing incentive schemes with a range of partners so that engagement can be improved and the take up of resilience measures increased. It will also reflect on the provision of flood protection and resilience measures for the elderly and the deployment of these measures in an emergency.

Once the Environment Agency's pilot on the provision of advice has concluded in the spring, the lessons learnt will be made available to local authorities participating in this scheme.

5.4 Surveys

Any use of the Defra funding to mitigate flood risk in individual properties must be preceded by surveys of those properties by professionals with the requisite skills and experience.

Local authorities should ensure that the person / organisation they commission to perform this function has the appropriate skills and experience. One way of ensuring this might be to commission a company on the Environment Agency's Strategic Flood Risk Assessment Framework to manage the survey process. Alternatively, local authorities should check that whoever conducts the surveys has professional indemnity insurance that covers this type of survey and that they, or the staff they use for the survey work, are registered with an

appropriate professional institution⁵. Such institutions, particularly those with Chartered status, oblige their members to limit their professional activities to those for which they are appropriately skilled and qualified.

The survey process consists of six elements (see box).

1. Assessment of the depth, duration and frequency of possible flooding around a cluster of homes
2. Assessment of the elevation of building thresholds and of ground-floor levels, basement levels and the elevation of under-floor spaces
3. Assessment of the likely routes of ingress of floodwaters for each particular home
4. Evaluation of potential means of protecting or making more resilient the structure and content of each particular home
5. Recommendations for protection and / or resilience measures to reduce the impact of future floods.
6. Post implementation quality assurance inspections, at each home, of any measures that are taken.

1 Assessment of the nature of possible flooding

This part of the survey should describe the nature of the flood risk. This should include information on predicted event frequencies, durations and depths and should take into account evidence of flood risk caused by blockages – for example, to culvert systems in low-lying areas. Any readily available information on future changes to levels of risk should also be taken into account, including, for example, the impact of new building developments, of climate change, of new community-level flood risk management systems or of changes to sewage and drainage systems by water companies.

Information on depth should be related to floodwater entry points and to the elevation of building thresholds, ground-floors, basements and under-floor elements susceptible to flooding.

Furthermore, the survey should estimate whether, in normal circumstances, warning times would be sufficient to enable householders to deploy protection measures in sufficient time to protect homes and whether or not the duration of flooding would cause ingress of water into the building in spite of protection.

⁵ E.g. the Institution of Civil Engineers, the Royal Institution of Chartered Surveyors, the Chartered Institute of Water and Environmental Management and the Association of Building Engineers

With respect to fluvial and coastal flooding, data relating to this part of the survey will be available from the local Environment Agency office. For other types of flooding, data might be less readily available. For pluvial flooding, some data might already be held by local authorities and information pertaining to the risk of secondary sewer flooding might be available from water companies. Where such data is not available, anecdotal evidence can be used instead but should be labelled accordingly in the survey report. Photographic and other similar evidence will sometimes allow additional confidence to be put in such data.

2 Elevation survey

As a first step towards assessing the flood risk for particular buildings, the elevation of critical parts of habitable buildings should be established. This will include the elevation of any basements, as well as of under-floor areas that are susceptible to flooding, ground-floor floors and thresholds (e.g. doorsteps or the bottom of patio doors).

3 Likely routes of ingress

An assessment of points of ingress should be conducted separately for each home. This will require access to the property and will therefore necessitate obtaining the permission of the resident. All possible routes of ingress should be identified. These are likely to include openings such as doors, windows, airbricks, cracks in walls, patio doors and service entry points; permeable external walls; party walls; downstairs toilets and, where there is a risk of floodwater coming up through the ground, floors. Ingress into under-floor cavities is counted as ingress into the building.

Once the points of potential floodwater ingress have been identified, *an assessment should be made of the likely damage that would be caused by a flood that has an annual probability of 5%.*

4 Evaluation of protection and resilience measures

Examples of resilience and protection measures are included in the appendices to this guidance.

At this stage of the survey, ALL technically suitable and affordable protection and resilience solutions should be considered.

Where protection is not possible or economically viable, resilience can offer an alternative. Furthermore, no set of protection measures can prevent all ingress of floodwaters, so where floods are expected to be of long duration, resilience might be considered a necessary complement to protection, or might be deemed a superior alternative. *All surveys should evaluate both protection and resilience measures and recommend whichever is most appropriate or, where relevant, a combination of the two.* However, due to legal constraints, Rounds 1 and 2 of the Defra grant can only fund packages of measures that focus mainly on protection. As a result, properties whose predominant need is for improved resilience might have to be omitted from these initial rounds of the scheme.

5 Recommendations for protection and resilience

Once the full range of possible options has been identified *surveyors should recommend those protection and / or resilience measures that they consider most suitable for the circumstances pertaining in each home.* This should include consideration of the following:

- the suitability of measures for the lifestyle of the occupiers
- the ability of the occupiers to successfully deploy any measures that would need deployment in the event of a flood warning
- the aesthetic impact of the measures (particularly in conservation areas)
- any possible negative impacts on the health and safety of residents (e.g. access and escape during a flood; trip hazards; the risk of injury during the deployment of measures)
- the preferences of residents / landlords
- impacts on the ability of the community to act collectively in response to a flood or flood warning
- any unintended negative consequences of the measures on the structure or condition of the building (e.g. condensation; damp; structural integrity during a flood).

6 Reporting

Surveys should be reported in a standard format (currently under development). For each item of data collected in the survey, an indication of confidence in the accuracy of that datum will be required. Surveyors should also provide executive summaries of surveys to each individual householder.

7 Post implementation inspection

Following the implementation of the measures, properties should be inspected in order to check that the measures implemented meet the performance specification in the original survey report. Local authorities should provide details of the implemented package of measures to their local Environment Agency area office.

5.5 Planning, building control and heritage issues

The implementation of property-level flood protection measures should not normally require planning permission or building control approval. However, local authorities operating the scheme should consider the following points:

- **Changes to the external appearance of the property**

Measures such as the application of rendering to the lower part of a wall to seal the wall, or the construction of a storm porch, will alter the appearance of a property. The need for any special planning approvals needs to be recognised. This might include listed building consents and approvals required for designated conservation areas.

- **Permitted Development considerations**

Permanent flood protection structures, such as storm porches, will normally be considered to be Permitted Development (development that can be undertaken without the need for a planning application to be submitted to the local planning authority) provided that they do not exceed the dimensions allowed. Authorities should ensure that surveyors do not recommend solutions that break planning laws and satisfy themselves that such constructions comply.

- **Heritage issues**

Achieving a proper balance between the special interest of a listed building and proposals for alterations or extensions is demanding and should always be based on specialist expertise; but it is rarely impossible, if reasonable flexibility and imagination are shown by all parties involved.

- **Building control and access**

Consideration will need to be given to compliance with the requirements of Building Regulations, particularly those related to energy efficiency.

Requirements for access to the building and passage around the building should also be taken into account.

5.6 Product selection and procurement

When choosing which products to use for the protection and resilience measures, local authorities will have the option of choosing from the lists provided in the survey or finding alternatives that also meet the required performance specifications. Where appropriate, the final choice of product should be made in consultation with residents. In all cases the products must meet the specified performance requirements.

The Environment Agency will be launching a website in the summer of 2009 that will bring together a range of information and guidance on household flood protection and resilience measures. In the meantime, it will be improving its existing web pages so that they offer more in-depth information about the measures people can take and point users toward relevant literature and other relevant websites. These changes will make it easier for residents and local authorities to get an overview of what flood risk mitigation measures are available and where they can get guidance on their selection.

Regarding the procurement of these products and their installation, the experience of the Defra pilots provides a range of different models:

- Some local authorities invited tenders from all companies whose products met their chosen quality criteria. In the Bleasby pilot area, however, the local authority used a framework contractor that had been selected through an earlier competitive process.
- In the Defra pilot areas in Cumbria, householders' unease at the use of contractors from outside the locality led some to favour local companies tendering for the installation of protection measures.
- Some local authorities selected a single company to provide the measures for all the properties. The advantage of this approach was that all residents had the same products and were therefore more able to erect flood-boards for each other in the event of sickness, incapacity or absence. The use of a single contractor also simplified the task of the local authority, which only had to deal with one contractor. This approach had the disadvantage, however, of reducing choice and limiting the ability to provide solutions in non-standard circumstances.
- In the pilots in Appleby and Kirkby-in-Furness, property owners themselves chose to whom to contract the work and the local authority paid the contractors on receipt of a satisfactory completion certificate. This approach gave greater choice to residents,

created the potential for an increased sense of ownership of both the products and of the flood risk situation and minimised the need for local authority supervision. However, this approach increases the number of contract accounts that need to be maintained by the local authority. It also has the disadvantage that when community members choose different measures to each other they might be less able to deploy measures for neighbours who are unable to do so themselves.

- In the Defra pilot in Uckfield, East Sussex, grant money was passed to property owners before work was carried out. Beneficiaries signed agreements that detailed the conditions of the grant and that included a recovery clause for the return of funds if the work had not been completed by the due date.

5.7 Agreements with beneficiaries

Local authorities might want to consider requesting that recipients of subsidised measures sign statements that clarify responsibilities under the scheme. These might cover, for example:

- ownership of products that had been installed
- responsibility for care and maintenance
- responsibility for replacing products or components when they become damaged or worn
- the transfer of responsibilities to subsequent owners or tenants
- a commitment to sign up to the Environment Agency's flood warning service, where available, and to deploy measures on receipt of flood warnings.

Case study – Leeds City Council

Leeds City Council insisted that beneficiaries of the pilot scheme signed agreements that committed them to maintain their flood-boards and airbrick covers and to participate in the Environment Agency's flood warning scheme.

5.8 Project reporting

At the end of the project, local authorities should provide a brief report to allow the collation of lessons learnt during the scheme so that these can be passed on to future applicants and used to improve the efficiency and effectiveness of the scheme. Defra expects to conduct an in-depth review of the scheme in 2010/11. This is likely to include an analysis of the demonstration effect and of beneficiaries' views of the scheme and the measures that were installed.

A short report by participating local authorities should briefly describe:

- who conducted the property-level surveys
- the cost of the surveys
- the criteria used for allocating the funds between different properties

- the procurement process used
- any community arrangements that were put in place for responding to warnings / flood events
- the level of take-up amongst those householders invited to participate in the scheme
- the number of properties that benefited from subsidies
- the amount of resource provided by sources other than the grant
- any comments / suggestions that local authorities think would be useful in determining arrangements for any future rounds of the scheme.

Details of where to send this report will be provided as part of the application approval process.

5.9 Post-event performance

This scheme presents an opportunity to test the effectiveness of protection and resilience measures outside of laboratory conditions and, potentially, in real flood events. To build on the current understanding of their effectiveness, local authorities are asked to inform their local Environment Agency office whenever there is a flood in an area that has benefited from this scheme. A brief description of the flood event and the performance of property-level protection and resilience measures should also be provided. Further details and a post-event appraisal form will be provided for this purpose later in the project.

5.10 Financial audit and liability

Funding will be allocated to authorities as an approved sum. When applications are approved, the notification of approval will set out the costs that are eligible for the grant. It will also set out the timescales for invoicing and the delivery of audited accounts. There will be no post-approval variations of the approved amount.

Authorities will submit a certified claim against their approved sum for qualifying costs on completion of the works and delivery of the project report (as described in 5.9 above).

In order to minimise administration costs, we do not envisage making phased payments.

By providing funding, the Government provides no warranty that the measures adopted will be successful.

Appendix A - Illustrative list of property-level mitigation measures

- Garden landscaping to divert floodwaters away from a building
- Improvements to the drainage of a property
- Low bunds around a property
- The raising of thresholds
- The construction of storm porches
- Peripheral walls/fencing
- Flood resistant gates
- Outside wall renders and facings, including veneer walling
- Non-return valves in waste pipes and outlets
- Products needing deployment such as free-standing barriers, door boards and flood skirts
- Airbrick covers (including periscope covers and those that seal automatically when there is a flood)
- Water-resistant external doors
- Pump-&-sump systems to extract floodwater
- Sealing of floors (known as “tanking”)
- The use of concrete to fill under-floor voids or delay flooding from the ground
- Raised electrical sockets, TV points etc
- Flood resilient kitchens (plastic, stainless steel, free standing removable units)
- The raising of white goods, kitchen units or other vulnerable items
- The storage of vulnerable items off the floor or in upstairs locations
- Changes to internal walls to speed recovery after a flood (e.g. different rendering; dry-lining; use of horizontal plasterboard)
- Flood resilient skirting
- Internal doors that can easily be moved to safety during a flood.

Appendix B - Useful resources

- The [Blue Pages](#) - the National Flood Forum's directory of flood protection products and services

- Defra's web-pages on property-level protection and resilience <http://www.defra.gov.uk/environ/fcd/adaptationandresilience/propertyresilience.htm>
- Norwich Union's [Flood Resilient Home](#)
- ABI publication: [Flood resilient homes - what homeowners can do to reduce flood damage](#)
- International Association of Public Participation: <http://www.iap2.org/displaycommon.cfm?an=1&subarticlenbr=234>
- Research into the factors that encourage / deter householders from taking property-level flood risk mitigation measures (to be published shortly on the scheme web-page).

Appendix C – Information required for applications

The following list details the main types of information that will need to be included in applications:

- The area/s identified in the application
- The main source of flood risk for these areas (e.g. fluvial, surface water flows)
- The number of properties included in the application
- For areas where the main source of risk is fluvial or coastal
 - the most recent two occasions on which floodwater entered properties in the area
 - documentary evidence of this event
 - the assessed annual probability of flooding of these events
- For areas where the main source of risk is not fluvial or coastal
 - the two most recent occasions on which floodwater entered properties in the area
 - documentary evidence of these events
- A description of any plans or mooted plans for community-level flood risk management schemes that would affect the area, including anticipated implementation dates

Please refer to the application form for full details.

This guidance is a living document and we would welcome views on its content. Please send them to floodresilience@defra.gsi.gov.uk.