Resilience grants pilot projects

Executive summary

July 2008
Resilience Grants Pilot Projects

Executive Summary

Defra made £500,000 available for a pilot grant scheme for the implementation of property-level resistance and/or resilience measures. The aim was to explore approaches to implementation and to assess the likely take-up by property owners. A funding limit of £5,000 per property was set of which up to 20% could be used for surveys and administration costs. £10,000 was allocated to the National Flood Forum to provide specified services in support of the pilot projects.

Six pilot locations were selected: Bleasby, Nottingham; Sandside, Kirkby-in-Furness, Cumbria; Sunderland Point, Morecambe, Lancs.; The Dunhill Estate, Halton, Leeds; The Sands, Appleby, Cumbria; and Uckfield, East Sussex. Across the pilots, 240 properties were considered eligible for the scheme, of which 199 properties (83%) took up the grants. 177 of these were residential properties (89%) and the remaining 22 were commercial. Where risk bands were considered, between 35% and 50% of the eligible properties fell within a locally-defined high risk band (probability typically 10% or 20%).

Of the residential properties, 173 opted for resistance solutions and 3 a mix of resistance and resilience. The corresponding figures for the commercial properties were 21 and 1 respectively. The average cost of works per property was about £2,900, in a range from about £300 to £13,000.

In some cases, property owners were prepared to bear some of the costs themselves. For the Uckfield pilot, where business premises were targeted, they trialled a minimum owner contribution of 25% of works costs. At the Sands, Appleby, about 10% of properties only installed works to the value of the available grant, deciding to complete the works when more funding was available. There was a clear feeling in that area that the government should pay to be in line with government funding of community defences. Full funding was generally offered by the other pilots, particularly where previous schemes by others (Local Authority(LA), Environment Agency (EA), water company) had set precedents even if that meant top-up with local funding. There was no clear signal that there was better take-up for pilots able to offer higher rates of grant.

Significant resources were provided by both the LAs and the EA to run the pilots, in terms of staff time, the funding of surveys and administrative overheads. A significant contribution towards the grant funding pot was provided by the Regional Flood Defence Committee (RFDC) for the Leeds pilot and top-up funding for works in excess of the grant provided by Defra was provided by Lancaster City Council (Sunderland Point) and the EA (Bleasby) in particular. RFDCs in some areas have demonstrated commitment to resilience approaches as shown by the Gunthorpe
project, near Bleasby, where a £250,000 project provided resistance for 34 houses without central government support.

The nature of the pilot projects meant that the costs for surveys, contract supervision and administration were high (up to 63%) as they were exploring new approaches. At Bleasby, it was found that survey costs for assessment of water entry into the property could be kept at around £500 per property if they are done as a bulk order. Threshold elevation surveys would add perhaps another £250 per property where needed. These surveys would take up 10-15% of a £5,000 per property budget.

Other messages to emerge from the pilots are:

- More time must be allowed for community engagement, obtaining consents and procurement – the project timescale was considered very short. This was discussed further in a feedback meeting where it was noted that normal project development processes (medium term planning, feasibility study, etc.) would allow activities such as community engagement to be planned ahead;
- It is important that there is sufficient capacity in the survey industry to deal with the increased demand for advice that a grant scheme might bring; and there was a need to ensure adequate capacity within the flood products industry to deliver quality solutions for any grant scheme;
- One pilot suggested that national guidance should address concerns over structural safety and impacts on ventilation (gas safety) arising from resistance solutions.
- Awareness of flood resilience options was increased following the projects. However, this did not always result in action – reasons included concerns over impacts on house prices and products spoiling the appearance of a property. In the Bleasby area, following the pilot project the interest of those surveyed in resilience solutions had increased to about 25% from less than 10%, but the local view was that there needed to be an external catalyst to escalate interest to action.
- Confidence in the contractors was an issue in Cumbria in particular – after the Carlisle floods in 2004 concern over ‘cowboy’ contractors was high.
1. Background

The Making Space for Water (MSW) programme committed to investigate property-level resilience to assess its potential for wider adoption. The concept of resilience adopted at that stage was any approach to minimising the impact of flooding whether through keeping the water out of properties or minimising the impact of flooding where water could not be kept at bay.

The current lack of take-up of the two principle approaches of resistance (keeping the water out) or resilience (making property easier to bring back into use where floodwater entered properties) indicated that the barriers to adoption of either approach, or a mix of the two, needed to be identified. At policy-maker level, the main barriers were thought to be issues of funding and lack of awareness. These ideas needed to be tested and any other barriers identified.

The MSW projects RF1 Resilience Grants Pilots and RF2 Encouraging the Uptake of Resilience addressed these issues through a pilot grant scheme and related research.

This report summarises the findings from the Resilience Grants Pilot project commissioned in 2007. The project envisaged the identification of several different areas in the country as pilot sites, capturing a mix of flooding types, property types (including both residential and commercial) and different community considerations.

1.1 Terms of Reference for the pilots

The Terms of Reference for the pilots can be summarised as:

- Total funding available overall – £500,000;
- Maximum grant of £5,000 per property of which up to 20% could be used for survey and administration costs;
- Sites should cover a range of flooding types both inland and at the coast;
- Funding was for both resistance and/or resilience solutions;
- Projects encouraged to explore different approaches to making best use of the money allocated.

1.2 Identification of the pilots

The bidding process was carried out in two tranches:

- Tranche 1 – a fund of £400,000. Projects were identified by Environment Agency Area staff in discussion with their partner local authorities.
- Tranche 2 – a fund of £90,000. Bidding was opened to a wider range of sponsors including local community groups.

The remaining £10,000 was allocated to the National Flood Forum (NFF) to provide specified services in support of the pilot projects. The NFF has wide experience of community engagement and this was seen as a key component of the project.
The Terms of Reference were sent out to Environment Agency (EA) Area Managers for them to identify areas with their local authority counterparts that might be suitable for consideration as pilot projects. Expressions of interest were submitted in a standard format to Defra for identified candidate sites allowing consideration on a consistent basis.

Submissions were reviewed by a panel and shortlisted projects were invited to submit full proposals.

Full submissions in a standard format were considered by the same panel, taking into account the type and frequency of flooding, the number of properties that might benefit, the range of approaches to making best use of the funding (including consideration of rationing funding, procurement approaches, etc.), and the types of communities. The panel also considered how to spread the funding around the country whilst selecting the projects that would provide the widest range of information to address the need to better understand the barriers to take-up.

Five projects were selected in the Tranche 1 process.

A wider public invitation for full bids for funding from groups representing community interest was made. The EA and local authorities were also permitted to bid as it was recognised that the timescale of the Tranche 1 process was short and some groups had not been able to prepare bids earlier.

Full submissions were considered by the panel and funding allocated to achieve the optimum balance with Tranche 1 projects. There had been some interest at community level, but these were not taken forward because of the complexity of the administration that needed to be resolved and the short timescales available.

One project was selected in the Tranche 2 process

### 1.3 Selected pilots

- **Bleasby, Nottingham** – £90,000
  Mixed fluvial and local drainage flooding, mostly residential properties (many detached), fluvial flood warnings available.
- **Sandside, Kirkby-in-Furness, Cumbria** – £90,000
  Coastal flooding, mostly residential properties (mixed types, several with listed or conservation status), flood warnings available.
- **Sunderland Point, Morecambe, Lancs** – £110,000
  Coastal flooding, residential properties (mostly terraced, several with listed or conservation status), flood warnings available.
- **The Dunhill Estate, Halton, Leeds** – £90,000
  Fluvial flooding, residential properties (mostly semi-detached housing), flood warning being developed probably with very short lead times, part of a wider City Council initiative.
• The Sands, Appleby, Cumbria – £80,000
  Mixed fluvial and local drainage flooding, mostly residential properties
  (mixed types, some with listed or conservation status), fluvial flood
  warnings available.
• Uckfield, East Sussex – £30,000
  Fluvial flooding, commercial property, flood warnings available.

2. Project management

2.1 Contracts for implementation

Funding was provided via contracts with lead authorities (all local authorities)
managed by a Defra Project Manager. The contracts were generally standard with
some local variations to reflect local conditions.

2.2 Contract objectives and reporting

The Objectives set out in the contracts were typically:

1. To reduce the impact of flooding in the pilot communities through the
   implementation of a pilot grant scheme targeted at the adoption of
   property-level resistance and/or resilience measures
2. To increase awareness and understanding of property owners of flooding
   in the pilot areas and the measures that can be adopted at the property
   level
3. To develop an improved understanding of the suitability and performance
   of resistance and resilience measures
4. To improve understanding of the barriers to adoption of resistance and
   resilience measures at the property level
5. To improve understanding of the mechanisms available for distributing
   grant aid for flood resistance and resilience measures and their efficiency
   and effectiveness
6. To improve understanding of the procurement of flood resistance and
   resilience measures and the efficiencies that can be achieved
7. To improve understanding of the viability of flood resistance measures in
   the context of available flood warnings

The pilot reports were asked to address the following as a minimum:

• The approaches considered for assessing/surveying properties for
  resistance and/or resilience solutions, the reasons for selecting the chosen
  approach, and commentary on the effectiveness of its implementation;
• Criteria for determining the allocation of and eligibility for funding, the
  range of options considered and the reasons for selecting the chosen
  option(s);
• The range of technical solutions considered and the reasons for selecting
  the chosen solution(s), including total costs;
• The effectiveness of the procurement process and any changes that would
  be made for any future project;
• If the measures are tested by a flood event within the contract period,
  comment on their performance;
- Methods of ensuring that the protection equipment is used to best effect by householders (including the elderly and infirm). Where tested by real or practice events, commentary on the effectiveness of chosen methods;
- The viability of flood resistance measures in the context of available flood warnings
- A review of the options (legal and administrative mechanisms) considered for distributing grant aid for flood resistance and resilience and the reason for the final choice;
- An analysis of the administrative burden (time/costs) associated with operating the pilot, whether charged to Defra or not, including the cost of any surveys of properties;
- A record of the properties that benefited from the Defra grant
- A review of the attitudes towards resistance and resilience both before and after the project, with commentary where applicable on the reasons for not adopting such solutions supported by data where available;
- Project data where available including %take-up, levels of private contribution towards achieving the desired level of performance, impacts of adoption of measures on insurance premiums/excesses, etc. that would assist consideration of policy options for resistance/resilience measures.

2.3 Project Boards

It was a stipulation of the contracts that the projects should be managed by a Project Board. It was expected that as a minimum, the Boards would constitute a local authority member, an EA member and a local community member. Defra attended at least one meeting to enable clarification of the intentions of the contract if any were needed.

Where there was a local flood group or similar, the local community member was a representative of that group. For at least one of the pilots where there was no active flood group, the local councillor for the Ward in question represented local interests and facilitated local communication.

2.4 Contract management

Contract management by Defra was ‘light touch’.

3. Approaches adopted by pilots

3.1 Selection of contractors

Generally speaking, the pilot projects shortlisted suppliers of Kitemarked products for further consideration.

3.2 Community engagement

All of the local authority/EA teams engaged with the communities fully, either through group activity or by direct contact or a mix of both. In most areas, flood fairs were organised, supported by the NFF, to provide information and advice. In Bleasby, where there is active development of resilience through local authority, EA and water company activity when funding permits, it was not considered necessary to hold a flood fair.
Whilst flood fairs were seen as useful by most pilot areas, there was some concern expressed that as these events were very much focused on flood product suppliers marketing their wares, there was scope for pressure selling that undermined their desired role of providing information for a balanced decision by property owners.

### 3.3 Eligibility criteria adopted

In all cases, primary eligibility was based on flood history. At the Dunhill Estate, for example, there had been three events in four years of varying magnitude allowing the inclusion of properties affected by one or more of those events. At other areas, the criteria were based more on modelled flood risk, with different choices as to whether and how to subdivide the risk bands. The choices are as shown in the table below.

<table>
<thead>
<tr>
<th>Pilot site</th>
<th>Description of risk bands</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Sands, Appleby, Cumbria</td>
<td>High – flood probability greater than 10%</td>
</tr>
<tr>
<td></td>
<td>Low – flood probability between 10% and 1%</td>
</tr>
<tr>
<td></td>
<td>Refined by threshold and drain surveys.</td>
</tr>
<tr>
<td>Sandside, Kirkby-in-Furness, Cumbria</td>
<td>High – flood probability greater than 20%</td>
</tr>
<tr>
<td></td>
<td>Medium – flood probability between 20% and 1.3%</td>
</tr>
<tr>
<td></td>
<td>Low – flood probability between 1.3% and 0.05%</td>
</tr>
<tr>
<td></td>
<td>Refined by threshold and drain surveys.</td>
</tr>
<tr>
<td>Sunderland Point, Morecambe, Lancs</td>
<td>No banding. All properties previously flooded considered eligible. Refined by threshold and drain surveys.</td>
</tr>
<tr>
<td>The Dunhill Estate, Halton, Leeds</td>
<td>No banding. All properties previously flooded considered eligible. Previous flood depths clarified.</td>
</tr>
<tr>
<td>Bleasby, Nottingham</td>
<td>Based on 1:75 and 1:100 modelled water levels compared with threshold survey.</td>
</tr>
<tr>
<td>Uckfield</td>
<td>Initially 1:10 flood plain. Later extended to 1:25 flood plain.</td>
</tr>
</tbody>
</table>

The disadvantage of a selection based solely on risk bands is that the modelling captures ground levels as opposed to threshold levels which really dictate the impact on a property. More than one area further refined their selection by surveying threshold levels which clarified the real risk to properties shown as being in the bands based on ground levels and assisted property owners to understand their risk better.

### 3.4 Sharing and allocation of funding

It was recognised by all of the pilots that their funding allocations would not allow full funding of all of the demands. Models adopted included:

Identify the properties that you wish to help based on flood history. Agree that the funding provided will fully fund specific needs (e.g. flood barriers for doors, air brick covers), with any other work (repointing of brickwork, etc.) covered by the property owner. The success of this model relies on there being sufficient funding to deliver the fully funded works.
This approach fully funds specified works but does not fully fund the work needed. It limits funding eligibility to those previously flooded.

Identify the properties that you wish to help but offer a greater level of funding to those at higher probability of flooding. Share the funding available on this basis knowing that it will not cover the full cost of work needed. Try and persuade the property owners to fund the balance needed. Seek participation in the scheme on the basis of an initial offer of grant to all eligible properties, recognising that if there is not 100% take-up the grant fund will be spread across the participating properties so increasing the individual grants allocated. Actual grant allocation would only be confirmed after the second stage of the process.

This approach does not fully fund the work needed. It rations funding based on level of risk.

Both Cumbrian pilots adopted this general approach, with The Sands, Appleby pilot adding the refinement that grants to residential properties would be greater than to commercial properties.

All eligible properties offered full funding for works agreed. Where the £5k budget per property for the pilot grant scheme was exceeded, the shortfall was covered by council/EA funding to ensure that all properties within the community were protected to the same standard. For the Bleasby pilot, the approach was informed by prior activity in the area by the local authority, EA and water company (Severn Trent Water).

No rationing was applied.

All eligible properties were asked to commit at least 25% of the estimated cost of the works from their own funding. Where the estimated costs exceeded £6,250 (£5k grant plus 25% minimum contribution) the property owner was expected to make up any shortfall. Property owner commitment ranged from £95 (grant £284) to £7,750 (grant £5,000).

No rationing was applied.
3.5  *Procurement and property owner commitment*

Different approaches to procurement were adopted as follows:

After consultation with the local community, it was decided that the Council would procure suitable resistance products on behalf of the property owners and have them installed. This was to deliver consistent quality, economies of scale and co-ordinated delivery (to ensure that attached properties were protected to the same level at the same time). A form of flood fair was held locally to inform residents of the options.

The tender list was limited to products with the PAS 1188 Kitemark for flood products that protected doorways, low silled windows and airbricks. The property owner was expected to deal with the sealing of apertures for pipes, cables, vents, etc. and the prevention of water entry through house drainage (WCs, drains, washing machine discharge pipes, etc.). Protection for conservatories was excluded because of concerns over their structural strength.

Tenders were invited and tenderers carried out house-to-house surveys to assess the scope of the work needed. Tenders were assessed by a panel against a set of essential requirements and a set of desirable requirements noted in the tender documents. Two tenders were close in both price and quality – the sensitivity of the assessment was tested and the first ranked tender was confirmed.

All properties were fitted with the same products (standard door guards, air brick covers) which meant that the process of fitting the equipment was standard. This facilitates community activity during a flood event where neighbours can help each other easily – defences can be set up for those less able as well as for those people that are away.

Property owners were expected to commit to the scheme initially by completing an expression of interest and later by signing a formal agreement to participate. The agreement committed the property owner to storing the products safely, participating in the community-wide deployment plan, to do any of the other work needed and to participate in the EA’s flood warning scheme. The Council retained ownership of the products to ensure that equipment was transferred to new occupants if the property were sold.

As part of the flood warning scheme a number of flood wardens have been identified on the estate. A Deployment Plan has been developed in consultation to facilitate deployment of the equipment once a warning has been received.

This pilot continued with a model that was well-known in the area. An EA framework contractor selected through a prior tender process was appointed to carry out the project after completing a similar project nearby. This offered economies through continuity of work (no new set-up costs) and reduced administration. Standard products were offered to all participants. There was no individual grant processing
except for participants confirming their agreement to participate in accordance with a standard set of conditions.

The community was engaged through direct contact by an experienced team and, if interested, an independent survey was carried out to advise on the work needed. The property owner was responsible for any work needed that was not covered by the contract.

Flood warnings are available in the area but this was not made a condition of benefitting from the grant aided works. Some properties are at risk from surface water flooding for which useful warnings have not been developed.

This pilot chose to deliver the grant to property owners in advance of completion of work against estimates of the work needed. This was a grant model that they had used in the past for other purposes and involved a legal agreement setting out the grant conditions, including a recovery clause if the works were not completed by the due date.

Property owners were expected to select appropriate solutions for their needs having attended a Flood Fair to which PAS 1188 Kitemarked product suppliers had been invited.

All participants had to sign up to the EAs Flood Warning System if they had not done so already.

Residents were made aware of the grant scheme and the options available through drop-in sessions and a Flood Fair. Questionnaires were also used to understand the level of awareness to focus dissemination efforts.

The councils advertised the scheme and asked potential suppliers to complete a prequalification questionnaire. Four potential suppliers were shortlisted, all offering PAS 1188 Kitemarked products. Property owners chose their supplier from the select list, procured the works and submitted the invoices to the council along with a letter confirming their satisfaction with the work. Having received the evidence of work completed, the council then paid the grant to the property owner.

This was a complex community to defend, in part because of prior experience and strong opinions but also because some quasi-community defences were appropriate (gates to seal alleys that protected several rear entrances). There was significant community engagement needed to arrive at an agreed solution. As part of that
process a delegation representing the Residents Association visited the Cumbrian flood fair to review options.

Agreed products were procured by Lancaster City Council acting as agents of the Residents Association using an EA framework contractor for property-level flood products and a steel fabricator known to the Council for alleyway flood gates.

A local flood plan has been developed to ensure that action can and will be taken to cover absence and assist those less able. There is a sophisticated local flood warning system that augments EA flood warnings with local knowledge.

4. **Findings**

4.1 **Level of participation and the costs involved**

240 properties were considered eligible for the scheme, of which 199 properties (83%) took up the grants. 177 of these were residential properties (89%) and the remaining 22 were commercial. Where risk bands were considered, between 35% and 50% of the eligible properties fell within the high risk band.

Of the residential properties, 173 opted for resistance solutions and 3 a mix of resistance and resilience. The corresponding figures for the commercial properties were 21 and 1 respectively. The average cost per property of works was about £2,900, in a range from about £300 to £13,000. The distribution of the properties in the range are shown in the figure below.

![Range of installation costs](image)

Significant resources were provided by both the LAs and the EA to run the pilots, in terms of staff time, the funding of surveys and administrative overheads. A significant contribution towards the grant funding pot was provided by the Regional Flood
Defence Committee (RFDC) for the Leeds pilot and top-up funding for works in excess of the grant provided by Defra was provided by Lancaster City Council (Sunderland Point) and the EA (Bleasby) in particular. RFDCs in some areas have demonstrated commitment to resilience approaches as shown by the Gunthorpe project, near Bleasby, where a £250,000 project provided resistance for 34 houses without central government support.

The nature of the pilot projects meant that the costs for surveys, contract supervision and administration were likely to be high (up to 63%) as they were exploring new approaches. This was confirmed by their preliminary cost estimates for these categories that indicated that at least 16% of the grant budgets should be allowed with 40% a more realistic estimate. At Bleasby, it was found that survey costs for assessment of water entry into the property could be kept at around £500 per property if they are done as a bulk order. Threshold elevation surveys would add perhaps another £250 per property where needed. These surveys would take up 15% of a £5k per property budget in addition to the administration costs.

4.2 Level of knowledge and willingness to participate

In Bleasby, there was a good pool of knowledge at the professional level as the local authority and the Environment Agency had been working on developing improved flood resistance for some years and Severn Trent Water has had similar schemes running in the region. The other pilots had mixed levels of understanding – whilst they may have had a theoretical understanding of resistance and resilience approaches, they had not implemented such projects and so benefited from the pilot exercise. Where the pilot reports specifically commented on the understanding of the public, the message was consistently that the knowledge of resistance and resilience had increased in the pilot areas. Indeed, at Bleasby, they reported that following the pilot project the interest of those surveyed in resilience solutions had increased to about 25% from less than 10%, but the local view was that there needed to be an external catalyst to escalate interest to action.

In some cases, property owners were prepared to bear some of the costs themselves. For the Uckfield pilot, they trialled a minimum owner contribution of 25% of works costs which was in several case exceeded significantly. Conversely, at The Sands, Appleby, some 10% of the beneficiaries only installed works up to the grant amount, wishing to complete the remaining works when funding was available. There was a clear feeling amongst many in this area that the government should pay for all flood defence measures to be in line with government funding of community defences. Full funding was generally offered by the other pilots, particularly where previous schemes by others (LA, EA, water company) had set precedents even if that meant top-up with local funding. There was no clear signal that there was better take-up for the pilots able to offer higher rates of grant. Indeed, some pilots reported that people were declining to participate because of concerns over potential loss of property value if visible flood resistance measures were installed (local estate agents expressed this view) even with effectively 100% funding. Others declined because of aesthetic concerns.

In general, the take-up of the grant was high, mostly exceeding 80% for eligible properties. There was little difference between the take-up by residential properties and commercial properties.
The pilots generally noted an increase of awareness of resistance and resilience following the project, but this did not always result in action. Other barriers, such as the belief that the government should pay seemed to overcome common sense.

4.3 Considerations of quality, efficiency and safety

The pilots were generally led by engineers who felt most comfortable with centralised procurement approaches. Quality control was a concern particularly if property owners (generally not well informed clients on engineering matters) were left to procure solutions themselves. They recognised the potential for economies of scale with central procurement even though it was acknowledged that this gave less choice.

Community engagement took up significant resource, particularly where local opinions were strong. At Sunderland Point, they had a history of developing self-help solutions that needed to be overcome to achieve a practical implementation plan within the time available. This was achieved but at the expense of significant officer time. Other areas noted similar concerns over community engagement within short project timescales.

In the Cumbrian region, where there were strong memories of the post-flooding recovery activity after the Carlisle floods in 2004 characterised by an influx of cowboy builders taking advantage of the lack of local construction capacity, there was a preference for flood product installation work to be carried out by local builders where the arrangements allowed. This is likely to have been more costly, but provided greater confidence.

4.4 Resistance versus resilience

Resistance was generally preferred in that there were no resilience only solutions and where there was a mix, the resilience component was small (typically modified electrical systems – raised plugs and meters). However, it was noted in Sandside, that there was a greater willingness to consider resilience as flooding was sufficiently frequent for the merits to be recognised. At Sunderland Point there was a property being redeveloped that would have participated as a resilience solution, but there was insufficient time to complete the work within the pilot project timescales.

5. Recommendations from the pilot teams

- Adequate time must be allowed for community engagement, obtaining consents and procurement. In a post-project meeting of all of the pilots, it was noted that longer lead times were needed for identifying potential areas, including them in the grant funding planning rounds, ensuring that resources were in place locally (both staff and training) to take projects forward, etc. 24 months lead time seemed to be the general consensus;
- It is important that there is sufficient capacity in the survey industry to deal with the increased demand for advice that a grant scheme might bring;
- There was a need to ensure adequate capacity within the flood products industry to deliver quality solutions for any grant scheme;
It was suggested that national guidance should address concerns over structural safety and impacts on ventilation (gas safety) arising from resistance solutions.