delivering benefits through evidence

source   pathway   receptor

Public dialogues on flood risk communication

Final Report – SC120010/R1

Flood and Coastal Erosion Risk Management Research and Development Programme

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

This report is the result of research commissioned by the Environment Agency's Evidence Directorate and funded by the joint Flood and Coastal Erosion Risk Management Research and Development Programme.

Evidence at the Environment Agency

Evidence underpins the work of the Environment Agency. It provides an up-to-date understanding of the world about us, helps us to develop tools and techniques to monitor and manage our environment as efficiently and effectively as possible. It also helps us to understand how the environment is changing and to identify what the future pressures may be.

The work of the Environment Agency's Evidence Directorate is a key ingredient in the partnership between research, guidance and operations that enables the Environment Agency to protect and restore our environment.

This report was produced by the Scientific and Evidence Services team within Evidence. The team focuses on four main areas of activity:

- **Setting the agenda**, by providing the evidence for decisions;

- **Maintaining scientific credibility**, by ensuring that our programmes and projects are fit for purpose and executed according to international standards;

- **Carrying out research**, either by contracting it out to research organisations and consultancies or by doing it ourselves;

- **Delivering information, advice, tools and techniques**, by making appropriate products available.

Miranda Kavanagh

Director of Evidence

Executive summary

This is the final report of the Flood Risk Communications Public Dialogue project, funded by the Environment Agency and Sciencewise. It summarises outputs from the project's first series of public dialogue workshops ('Stage One' – two workshops each in Leicester, Newtown, Oxford, Skegness and York), and a final workshop combining a selection of participants from all five locations ('Stage Two'). The purpose of the dialogue was to involve members of the public in:

- exploring the meaning of messages about flood risk, including the link between understanding the risk and taking action

- developing innovative methods and techniques to help individuals and communities understand their risk of flooding

The results will inform the way in which the Environment Agency presents its maps of flood risk and the way it coordinates with other agencies over these kinds of communications. The project is also intended as a basis for all agencies working with communities at risk of flooding to be more consistent and joined up in their communications and action, and to develop a more outcomes-focused approach.

Key messages and principles

There was much discussion at the Stage One workshops about a range of communication materials, with participants contributing a wealth of comments and suggestions. Alongside comments on specific materials, some overriding principles emerged from this first round of workshops:

- Think about the needs of different audiences.

- Don't assume a little bit of information will scare people – telling the truth about risk and impacts is more likely to lead to action.

- Stop talking about probability and risk in mathematical language as it means very little to a lot of people.

- Be really clear with people on what is happening before, during and after a flood, and what actions they should take.

- If you are asking people to take individual actions, tell them (in the same communication) about what local/national organisations are doing too – that is, we're all in this together.

- Focus on making information local, with historical context.

- Don't just focus on the negative impacts of flooding (for example, posters) – focus on what people can do about it.

The Stage One workshops also showed that there is a clear difference in the awareness and readiness to take action between those who have experienced recent or regular flooding and those who have not. Both groups have a tendency to fall outside the flood risk authorities' communication systems in different ways. Those who have experience of flooding – the 'flood literate' – tend to use Environment Agency and Met Office communications as useful tools, but rely heavily on their own experience, local knowledge and observation. Those who have not experienced flooding – the 'flood unaware' – tend not to see the relevance of flood communications to them.

The Stage Two workshop provided an opportunity for members of the public who attended the first round of workshops to meet again with specialists in flood risk

communication to further discuss issues and dilemmas. Discussions focused on specific communications materials and methods.

Reflections at the end of Stage Two

At the end of the workshop, participants spent some time reflecting on the day and the overall process. Several participants noted specific things they had learned, said they would take specific actions, or emphasised specific suggestions such as including flood risk information with council tax bills or treating flood safety like fire safety.

The volume of information coming out of the dialogue was noted as a positive but also a challenge in terms of the Environment Agency and others being able to take everything forward.

Several participants reflected positively on the degree to which the Environment Agency had demonstrated listening by taking actions between the workshops and commented on the resulting levels of trust and confidence in the Environment Agency. Participants were encouraged to leave their email addresses if they wanted to be sent the final report, and were encouraged to stay engaged by keeping in touch with the Environment Agency as they develop new materials, and with Sciencewise if they were interested in taking part in a potential panel to discuss a wider range of issues. All but one of the participants left their email address with a view to staying in touch.

Turning outputs into actions

In February 2015, members of the Oversight Group and other key stakeholders met to discuss the dialogue outputs and to consider future actions as a result. The attendees reviewed the outputs of the dialogue, focusing on six main themes:

- awareness and preparedness

- roles and responsibilities

- flood risk data

- weather and flood warnings

- communities and vulnerable people

- insurance and property level protection

This was followed by a discussion of current actions (things that have already happened or are in the process of happening) and future actions (proposed actions that are likely to happen and possible actions that require further discussion) that would or could happen as a result of the dialogue outputs. Current actions include: work on revising flood maps; feeding dialogue outputs into the Flood Re process; and finalising a film of the dialogue process. Future actions include: producing a simple document clarifying roles and responsibilities before, during and after a flood; working to better link flood maps and warnings; and producing new communication documents based on feedback from the dialogue.

Key messages about communication materials

Stage One: Messages about flood risk maps

- **Access**. Consider those who do not have computers or who might need additional help to interpret the maps.

- **Colour**. Mixed views, though generally, there are too many shades of blue – these are confusing and not always clear.

- **Communication**. Use the maps to link to other sources of information.

- **Comparison**. Breach/overtopping (impact) maps are easier to understand.

- **Data**. Make it clear what data the maps are based on, show historical data, and remove references to probability and risk as it will not mean much to most people.

- **Familiarity.** Overall feeling that people generally had not seen these maps before.

- **Geographic context**. Show landmarks, roads, villages, safe places to go during a flood, and maybe topography.

- **Resolution**. It would be useful to be able to zoom further in without losing resolution, for example, to pinpoint properties.

- **Scope**. Why not have a single map showing the risk of flooding from any source.

- **Usefulness**. Mixed views on overall level of usefulness – some tended to think the maps would be useful when buying a house, or were helpful in understanding flood risk; others said they were not easy to interpret.

Stage One: Ideas for communication around flood risk

- **Flood plans and packs**. Have a flood pack in every house, possibly with different types of plan for different people (for example, businesses, students, possibly compulsory for landlords). Utilise council tax or insurance to get plans out to people, and consider a generalised 'emergency' plan.

- **Rental property and landlords**. Specific warnings/measures for those renting a holiday home, and a duty on landlords or letting agents to tell people about flood risk.

- **Local mechanisms**. Lots of ideas put forward for local communication channels.

- **Historical accounts**. Show people real past stories, use pictures of historical flooding and records of surface flooding to show how bad it might get.

- **Children and students**. Educate more about flooding, and especially as teenagers get closer to having their own property or going to university (for example, information on flooding at freshers' fairs).

- **Specific communication ideas**. There were many ideas for specific communication content and mechanisms.

- **Vulnerable people**. Consider the needs of vulnerable people, for example, separate track for Floodline, tailored number to call, work with AgeUK and schools, add a message to communication materials (do you know a neighbour who might need help) and consider how to ensure a single list of vulnerable people in a specific area.

- **Mapping and warnings**. Stop talking so much about probability and risk. Coordinate colours between Environment Agency and Met Office.

- **Welsh language.** Make information available in Welsh and English, but enable people to register their preference to avoid wasting paper.

Stage Two: Testing ideas and discussing dilemmas

- **New look flood maps.** Overall comments on prototypes for new flood maps were positive, indicating they were an improvement on existing maps. The idea of a postcode search function was welcomed, with participants liking the level of detail and personalised information. Some respondents expressed concern around accessibility for specific groups such as the elderly or stated that people would not necessarily come across this information unless they were looking for it. Others highlighted the need for information to be available in both map and visual/written format.

- **Videos and printed materials**. Participants looked at a range of materials designed to result in positive changes to how people think and act in response to flood risk. They particularly liked messages they perceived to be engaging and personal, with a combination of realistic (especially localised) information about flooding and ideas for positive action.

- **Health impacts of flooding.** Participants compiled a list of possible impacts of flooding on health and compared this to Public Health England's own list. They were asked to think about the issues that had most impact on them and their friends, family and community. Three issues stood out: hygiene issues related to cleaning a flooded home; safety of food and drinking water; and mental health issues. Mould, carbon monoxide poisoning, and injuries caused by moving things to higher places received the least attention. Their evidence was felt by the Public Health England representative to suggest that changes in access to healthcare, infectious diseases and carbon monoxide poisoning could have the greatest impact on health. Participants commented that there might be a need for more information about what happens after a flood to highlight risks such as the potential for carbon monoxide poisoning. A subsequent discussion about mental health issues included references to psychological first aid.

- **Future flood warning service.** Participants discussed what a future flood warning service might look like. There were mixed views over frequency; some people who had more experience of flooding wanted more warning than others with less flooding experience. The issue of false alarms was raised, with the suggestion that members of the public sign up for the level of frequency they desire. Participants noted a range of actions they might need reminders for including to switch off electricity, take possessions upstairs, check vulnerable neighbours, have useful items to hand, check essential documents and phone numbers, and refer to a flood/action plan. Suggestions for local information included water levels compared with historical levels, closures of roads/schools/other services and shops, safe areas, local council actions, timescales and useful phone numbers.

- **Messages to go out with insurance renewals.** Participants discussed the possibility of flood information being included in insurance renewal letters. There was a fair degree of scepticism about this idea due to a lack of trust in insurance companies, although some participants were very supportive of the idea. The need to make a link to actions that can be undertaken to reduce premiums was raised, as was the need for endorsement by a trusted agency (or even the information coming direct from a trusted agency rather than via the insurance company). Other comments included the need for personal messages, a formal appearance (rather than too many pictures) and the need to avoid any information looking like a sales pitch. Participants discussed a range of specific information that they would like to see included should this communication method be developed.

Acknowledgements

Contents

1 Overview of the dialogue project

1.1 Background

Current UK flood risk management legislation and related strategy emphasise the involvement of communities and working in partnership to deliver actions and make decisions around flood risk. This includes principles contained within the National Flood and Coastal Erosion Risk Management Strategy for England 2011 and the principles set out by the Department of Environment, Food and Rural Affairs (Defra) for flood and coastal resilience funding, as well as new statutory duties for lead local flood authorities (unitary authorities or county councils) within the Flood and Water Management Act 2010 and Flood Risk Regulations 2009. In addition, the Local Government Group's preliminary framework for local flood risk strategies highlights the importance of effective communication to promote better community relations and awareness of flood risk management issues.

The Environment Agency's Corporate Plan 2014 to 2016 sets out a clear responsibility to ensure that communications are appropriate for their audience and to help develop and promote a better understanding of flood and coastal erosion risk. The Environment Agency has for many years been drawing on the social sciences to develop understanding of how best to increase the uptake of its flood warnings service and to improve preparedness. This includes, for example, learning from behaviour change approaches about what factors prompt or facilitate action.

Considerable research has been done in the UK and internationally into the perception of flood risk and responses to flood warnings. However, less is known about the ways in which communications can increase awareness and promote action to prepare for flood risk in the absence of a flood event. There has also been limited work to engage at-risk communities in assessing the effectiveness of communications in promoting resilience.

Sciencewise[1] – the co-funder of this public dialogue project – supports government departments and other authorities, including the Environment Agency, in commissioning and conducting public dialogue to inform policy on a range of subjects.

1.2 The dialogue project

The Flood Risk Communications Public Dialogue, co-funded by the Environment Agency and Sciencewise, built on some of the earlier work around risk perception and response in relation to flooding. The intention was to generate practical outputs in the form of messages, materials and approaches to the use of different media to be tested with members of the public.

1.2.1 Purpose

The purpose of the dialogue was to involve members of the public in:

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[1] Sciencewise is funded by the Department for Business, Innovation and Skills (BIS). It aims to improve policymaking involving science and technology across government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate to ensure public views are considered as part of the evidence base.

- exploring the meaning of messages about flood risk, including the link between understanding the risk and taking action

- developing innovative methods and techniques to help individuals and communities understand their risk of flooding

1.2.2   Project objectives

This purpose is centred on four overall project objectives:

(1) Review the current issues surrounding flood risk communication and lessons learnt from other countries or disciplines.

(2) Co-create, with members of the public, ways of helping individuals and communities to:

   a) better understand flood risk

   b) link risk to appropriate action

   c) feel empowered to take action

(3) Help agencies adopt a consistent approach to conveying risk and likelihood, enabling them to join up their subsequent activities.

(4) Produce recommendations from members of the public and stakeholders on resources which are likely to result in positive changes to how people think and act in response to flood risk.

The results of the dialogue project will inform:

- the way that the Environment Agency presents its new maps of flood risk

- the way it coordinates with other agencies over these kinds of communications

- the communication activities of other agencies involved in flood risk communication

The project is intended as a basis for authorities and agencies working with communities at risk of flooding to be more consistent and joined up in their communications and action, and to develop a more outcomes focused approach.

1.3   Dialogue process

3KQ, Collingwood Environmental Planning and Osprey Communications were commissioned to design and run the dialogue process. Working with the project Oversight Group (see Section 1.5), the project team designed a multi-stage process, beginning with a literature review and working in three stages of stakeholder input and reflection either side of a three-stage public dialogue process across five locations.

Key elements of the dialogue process included:

- carrying out a literature review focusing on public understanding of, end engagement with, flood risk

- developing a workshop structure and materials, informed by the literature review and stakeholder input via a key providers workshop

- organising two stages of public workshops

- holding a final stakeholder event seeking response and actions as a result of the dialogue outputs

Members of the public were recruited to be broadly representative of each of the five locations. Locations were chosen for geographical diversity and to represent a mix of locations that had relatively recent experience of flooding (Oxford and York), and those that were at high risk of flooding but with less recent experience (Leicester and Newtown). Skegness was originally chosen as somewhere that had not experienced flooding, but the recent tidal surge – although not leading to any direct impact on homes – meant that participants in this area had a heightened awareness of flood risk compared to those in Leicester and Newtown. A total of 95 participants attended the first two sets of dialogue workshops, with 28 participants from across all locations returning for a combined third workshop.

The multi-stage process is summarised in Figure 1.1. Dialogue 1 and Dialogue 2 make up Stage One of the process and Dialogue 2 forms Stage Two. (NB The terms 'Stage One' and 'Stage Two' should not be confused with the 'Stages 1, 2 and 3' of progressive scenario of flood communication and awareness discussed in Section 2.3.) See Appendices 1 and 2 for a more detailed methodology. See Appendix 3 for a summary report of the key providers workshop and Appendix 4 for a summary of attendance at each public dialogue workshop.
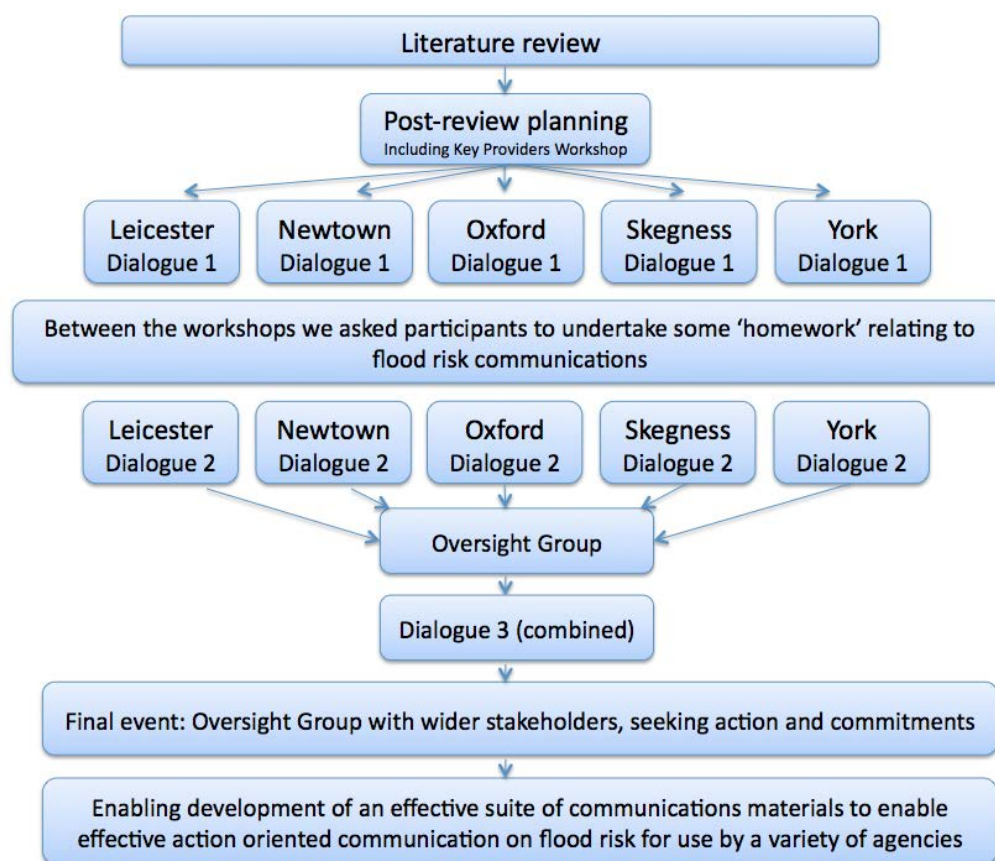
Figure 1.1   Flood risk communications public dialogue process

1.4 Dialogue workshop materials and wider communications

A temporary web portal (http://floodriskdialogue.org) (Figure 1.2) was designed to sit alongside the dialogue workshops to make it easier to share information and to act as a resource for project partners, dialogue participants and the general public.
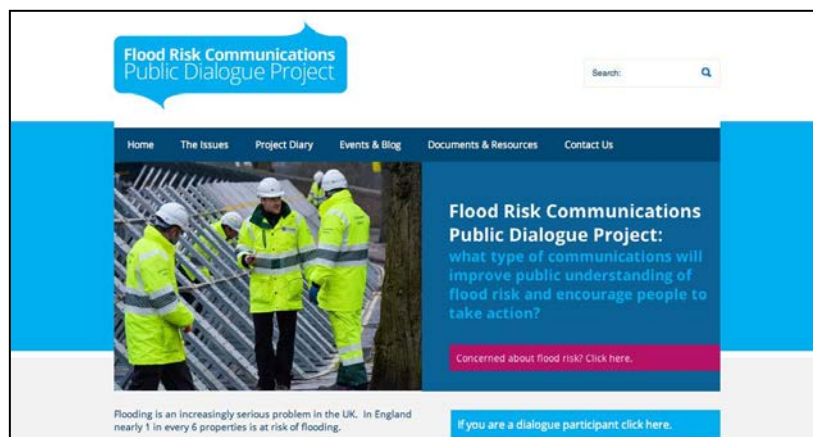
Figure 1.2   Flood risk communications public dialogue website

Workshop materials designed to stimulate discussion, provide information and capture responses are a central part of the dialogue process. The project team selected a range of stimulus material for the workshops, with input and guidance from the Oversight Group. Materials were selected or adapted from those already in existence, enabling participants to respond to actual flood risk communications in realistic scenarios. See Appendix 5 for a more detailed list of workshop materials.

1.5 Roles and responsibilities

A range of different organisations and individuals were involved in the public dialogue process, including:

- Project Oversight Group – a group of stakeholders including the most important providers of flood risk communications, providing overall guidance and accountability to the project

- Environment Agency project manager – the project's main contact at the Environment Agency, working with the project delivery team to ensure the project was managed effectively

- Project planning subgroup – a subset of the Oversight Group responsible for decisions around timing and delivery of the project

- Project delivery team (3KQ, CEP and Osprey Communications) – a consortium of dialogue, engagement and communication organisations working with the Environment Agency to deliver the project

- Members of the public – participants in the dialogue project brought together in a range of locations to discuss responses to current flood risk communications

- Specialists – stakeholders from a range of organisations involved in flood risk communication and resilience, present at dialogue workshops to interact with members of the public and to provide input and hear what

members of the public thought first hand – many specialists present at the dialogue workshops were also members of the Oversight Group

2 Findings and outputs from Stage One workshops

This section summarises the dialogue findings in relation to the project objectives outlined in Section 1.2.2. The first section focuses on the literature review, while the remaining sections summarise outputs from the public workshops.

Key questions asked of participants are marked like this, alongside comments on specific materials. Quotes from both participants and specialists are contained in boxes. Any specific dilemmas or questions arising are also highlighted, along with references to any further discussion.

2.1 What do we already know about flood risk communication?

Project objective 1: Review the current issues surrounding flood risk communication and lessons learnt from other countries or disciplines.

A literature review was carried out and supplemented by interviews with key providers in flood risk communications in England and Wales: the Environment Agency, Met Office, Flood Forecasting Centre and Cabinet Office.

The review defined flood risk communication as a social process made up of a number of different components (message, sender, audience, social context of the communication), all of which affect the nature, form and impact of the communication. The purpose of the communication is to create awareness and prompt action to prevent or reduce the possible negative impacts of flooding. However, the evidence demonstrates that there is no direct causal relationship between the transmission of information about the risk of flooding and people taking action, individually or collectively, to manage that risk.

The review outlined a number of social factors that influence response to flood risk communication and mapped the current flood risk communication system in England. It summarised a range of techniques that are currently being used to communicate flood risk including flood risk maps, games, educational activities, videos, images, infographics, numbers and written communications, as well as projects testing innovative approaches such as the Sustainable Flood Memory Project. It also identified techniques for communicating flood warnings including mobilising police officers to knock on doors, site sirens, loudhailers or other amplified messages, electronic message boards (for example, at roadsides) announcements in public buildings and shopping centres), automated messages to subscribers and media announcements.

The following key issues for current flood risk communication practice were identified via the review. These messages were taken into account in the design and delivery of the workshops, and correlated strongly with the project objectives.

2.1.1 Coverage

There are sectors in society in which people are much less likely to receive information about flooding as they do not use either traditional or new communications channels.

Multiple online 'reservoirs' with useful information mean that members of the public cannot easily find the information they want: an alternative would be to have a single,

joined up portal. For some practitioners, this is not seen as really a problem of coverage, but more one of understanding (see below).

'People saying "we weren't told" – but there is a point at which the providers can't do any more, there will always be people who say that they didn't hear the message.'
Key provider interviewee

2.1.2 Communications practice

Failure to implement good practice, for example, in relation to the language or flood alerts, may be associated with a lack of training for people on the ground.

2.1.3 Understanding risk

Many practitioners feel that the main problem for the communication of flood risk is related to how people understand (or fail to understand) risk. This is reflected in 'segmentation' approaches which suggest that there are some social groups or segments that will never engage with this kind of risk.

2.1.4 Moving from awareness of flood risk to response

Use of social media suggests a change in relationships between key providers and members of the public, with greater involvement of members of the public in sharing and creating information. However, there is some doubt about the extent to which social media are actually reflecting a real shift that could lead to changes in response.

2.1.5 Improved warnings

The research indicates that there is an appetite for probabilistic warnings (that is, warnings that include information about how likely it is that flooding will happen) among members of the public who have experienced flooding, but that warnings involving percentages or, for example 'one in ten' chance are not generally welcomed due to difficulty in interpreting what this means.

There is a need for further research with a broad range of the public to test probabilistic flood warning materials once these have been developed. The research should include both people who have experienced flooding and others who have not to see how their responses differ. Different forms of probabilistic warnings should be developed by experts in communication and graphic design in conjunction with the Environment Agency and the public.

2.1.6 Role of dialogue and participation in increasing understanding of and response to flood risks

Some of the issues raised above require emergency responders to implement actions such as training staff in communications. Other issues could be addressed by using public dialogue to provide insights about proposed changes in flood risk communications, for example, in the case of flood risk maps. It is known that dialogue is a useful way of encouraging engagement with flood risk, so involving local, non-technical individuals in supporting the development of flood risk communication materials could increase their effectiveness.

2.2　Understanding flood risk

Project objective 2a: Co-create, with members of the public, ways of helping individuals and communities better understand flood risk.

2.2.1　Awareness and knowledge gaps

Workshop one at each location had a strong focus on understanding flood risk. Participants were asked the following questions before being asked to look at current examples of flood risk maps and provide positive or negative feedback.

QUESTION	How closely have you been affected by flooding?

Participants described a range of experiences of flooding. At one end of the spectrum, in Oxford, the majority had experienced flooding in their houses. At the other, in Leicester, most had not been closely affected by flooding. Participants in Skegness and York had a mix of experiences, including some direct experience with coastal, surface water and river water flooding, though no-one in Skegness had experienced flooding in their homes. More than half of the participants in Newtown had not been affected by flooding; some had experienced flooding historically or when living in a different place. In Oxford, in particular, discussions of previous experience revealed some participants' concern that the authorities are providing inaccurate information about flood risk, and that there is a need to tailor information to individual circumstances.

'I'm fresh to the subject – no experience at all.' Leicester participant

'There is a need for members of the public to be able to tell the agencies where things went wrong.' Oxford participant

QUESTION	How aware are you of the current risk of flooding in your area? How do you know?

As might be expected, awareness of current risk correlated roughly with previous experience of flooding. Those in Oxford were most aware, with participants in Skegness also displaying a high degree of awareness due to the recent tidal surge in 2013; although this did not affect most of them, it seems the 'near miss' nature of the incident has led to a higher overall awareness. Participants in York tended to be fairly aware as a result of personal experience. Those in Newtown tended to place themselves around the 'mid level' of awareness and those in Leicester were least aware.

Sources of information on flood risk included existing experience – a number of those with experience of flooding said they relied on direct visual observation. This also seemed to correlate with a degree of distrust of information coming from the Environment Agency based on experience of it being inaccurate or mistimed. Others said they knew because of contact with the Environment Agency and information on local media. Some participants said they could see the river from their home, which made them more aware, or said that they had signed up for flood warnings.

'Local radio puts out when there's road closures and things.' Newtown participant

'When it's raining a lot you're keeping your eye out.' York participant

'We think the Environment Agency stay inside in front of their computers and they should come outside and see whether it's actually sunny or actually raining. In the 2014 flood on the Environment Agency Floodline it said that [location] had no properties that were in danger of flooding but in actual fact they were. There is too much generalisation now. Some people are more affected than others depending on things like where a culvert is blocked.' Oxford participant

Questions about flooding

Participants were given the chance to ask any questions they had about flooding. These did not have to be specific to flood risk communication, although most were implicitly linked as they demonstrated gaps in current knowledge about flooding and related issues.

The main areas of questioning were:

- **Roles, responsibilities and coordination around flood risk** – for example, who is responsible for what

- **Insurance** – for example, what kind of insurance can people get in areas at risk of flooding

- **National level mitigation** – ranging from what can and is being done to prevent flooding to comments on specific measures such as dredging

- **Personal action and home protection** – including information about home protection measures such as sandbags

Other lines of questioning included (in approximate order of commonality):

- communication and awareness among the general public

- information and advice, including who to contact for information or in emergency

- determination of flood risk, mapping and prediction

- context and causes of flooding

- what happens in a real-time flood situation

- impact of new developments on flooding

- help for vulnerable groups

- flood warnings

- priorities and funding

- types of flooding

- openness and transparency

QUESTION	What causes flooding in your area?

Participants identified a range of potential causes of flooding including:

- high tides and sea surges

- poor drainage or blocked drains

- high levels of rainwater and flash floods, rivers, groundwater

- burst water mains

- sewage or drain overflow

Other discussions stemmed from this conversation, including concern from participants in York over who they should call in the event of a flood and confusion over the different people involved. There were discussions about probability at each workshop, during which it became apparent that this was a complex topic to convey; some participants also noted the importance of local knowledge in helping prediction and preparation.

QUESTION	Who can give you warnings and advice about flooding?

'Have any of the people on the list ever been scared to death in the middle of the night and not known what to do with the water coming up to their ankles, their knees, their waist and being frightened out of their lives? It's one of the most frightening things that has ever happened to me and I live in fear of it happening again.' York participant

Participants were encouraged to call out any sources of potential information on flooding. These included:

- Environment Agency, including text alerts and Floodline

- Met Office

- local council (although one person said 'not the council')

- neighbours or other residents

- media, including newspapers, local radio, internet, BBC

- police

- Army

- weather forecasts

- Fire and Rescue Service

- social media

- water companies

- Highways Agency

- Coastguard

Participants in Newtown did not mention Natural Resources Wales as a potential source of information.

The need for a single information source or point of contact was a topic of discussion in York and Skegness at this point, though this was before the Environment Agency's Floodline was mentioned, as participants were later asked to find out the phone number for Floodline as part of their homework.

Participants questioned why a 'one stop shop' to go to for information and advice could not be provided. It also became apparent that there were some specific initiatives or organisations that participants were unaware of, for example, local authority community

emergency and flood planning (discussed in Skegness) and the National Flood Forum (discussed in Oxford).

> 'With all those organisations why can't they have one number between them to be able to give us information properly?' Skegness participant

QUESTION	Who would or do you go to?

This was a slightly different question to the one asked above, with participants this time being asked where they would actually go as opposed to where there might be information available. Responses included:

- neighbours
- internet/Google
- 'don't know'
- Environment Agency or Floodline
- water company
- police
- local council
- insurance company (if moving house)
- local flood group

In Newtown, some participants suggested local people in a rural area might be more aware of local issues.

2.2.2 Understanding flood risk and maps

MATERIALS	Flood risk maps

Participants at all workshops spent time discussing 'static risk' flood maps showing annual likelihood of flooding relevant to each location. These included surface water flood risk maps, and river and seas flood risk maps, each of which uses shades of blue to indicate different levels of risk. Participants in Skegness also looked at two additional maps: one depicted the scenario if there was an 'overtopping' of the sea defences (that is, the defences held but the sea came over the top of them) and the other depicted a 'breach' of the sea defences. Shades of red were used on these maps rather than blue.

The range of comments on the maps discussed in plenary sessions are summarised below:

Access
- What about people who don't have computers?
- Some people would not be able to interpret the maps and would need, for example, a booklet to explain everything.

Colour
- There are too many shades of blue, they are confusing and not always clear. A different colour or perhaps red, amber, green would be more helpful.
- Some people said they had no problem with the use of blue – often these were people who were generally comfortable with using maps.

- The maps have too much solid colour – it might be better to use hatching.
- Use of white for 'no risk' areas is unnecessary.
- Why not use black text?
- Colouring is ok.

Communication
- Could put these maps in public places, although this might put off visitors.
- Use the maps to link to other sources of information.

Comparison
- The river maps seem easier to understand.
- The breach/overtopping impact maps are a lot easier to understand [NB these maps were only used in the Skegness workshops].

Complexity
- Simplify the maps.
- Add more detail.
- The keys or explanations are too wordy.

> **DILEMMA**: Simplicity versus detail of maps.
>
> See Section 6.2 for further discussion on flood risk maps.

Consistency
- The map and the accompanying instructions have different terminology.

Data
- Make it clear what data the maps are based on (for example, actual flooding, modelling, and other inputs) and date them so people know they are current.
- Show historical data.
- Remove the references to probability and risk as it will not mean much to most people.

Familiarity
- Overall feeling that people generally had not seen these maps before.

Geographic context
- More geographic context on the maps would be useful, for example, showing landmarks and topography (although this might confuse some people), marking and labelling roads more clearly, naming villages, and showing 'safe places' where people could go during a flood.

Resolution
- It would be useful to be able to zoom further in without losing resolution, for example, to pinpoint properties.

Scope
- Why not have a single map showing the risk of flooding from any source?

Usefulness
- The maps are useful – for example understanding potential issues if buying a house – and give a lot of information, especially for people unfamiliar with the area.
- The maps are confusing or not clear enough.
- The breach/overtopping map is scary.

> 'That 'one in a hundred year' event is very misleading. We haven't had anything for years, then we had three years on the trot.' Newtown participant (NB Though from a Newtown participant, it doesn't necessarily refer to flooding in Newtown.)

MATERIALS Examples of specific comments on different types of map

Breach maps (Skegness only)
- Makes you realise how devastating it could be.
- This would scare people.
- Stronger reaction to red/yellow colours
- What are the uncertainties?

Overtopping maps (Skegness only)
- Could be a good poster for public – for example, in town hall.
- I'm in the red area – I would rather know.
- Why are these not put out publically?

Rivers and seas maps
- Not happy with colour coding
- Bad presentation in colour
- Traffic lights colour code please
- Blue on blue writing is hard to see.
- Too much blue – could use violet. Blue text on blue can't be read.
- Explain what 'high' looks like. Up to my knee? Don't like 3× blue – different colours
- Probably only useful if you are looking at buying a property.
- Not the sort of thing I go online to look at.
- Older people would struggle with the maps.
- Don't dumb down.
- Can we have two views? More detail/less detail
- Seems very straightforward.
- Map is easy to understand and self-explanatory.
- How accurate are these?
- Are there names – houses, villages?
- Is this actual flooding or predicted?
- No topography! Doesn't tell me enough – no contours – where are the valleys? The high ground
- Why not a 3D view like Google maps like street view?
- Can't see local landmarks.
- Where are the flood defences? Mentioned on the key but not on the map.
- Where are the roads?
- Identify 'safe areas'.

Rivers and seas map keys
- Simplifying the key would make it easier to understand.
- Would be good to have pictures as well. If just in writing you can't see things you recognise. List of historical dates when it has flooded would be useful. Would mean more than 1 in 100 and so on. Deals in probabilities, which is always a problem. Iron clad guarantees can't be given.
- 1 in 30 what?
- People read to partway down, then asleep.
- What does 1 in 30 mean? How does 3.3% feel really? Need to explain probability.
- Lots of helpful information regarding each risk level
- Hard to understand.

- How approximate? Same amount across the country? If my house/business/land is on the edge of a line – how much risk am I at?

Surface water maps
- Other colour red/amber/yellow? Colours as Met Office rainfall
- What are these? Stream? Culverts?
- Can this be real-time? Can it link to the maps?
- Can see why there is confusion – blue lines could be confused for river. Different shades of blue confusing. Colour-blind people friendly?
- Need to zoom in further.
- Hard to differentiate between the blues – could other colours distinguish low/medium/high risk?
- Vague – not specific to your home.
- This is much more difficult to interpret than the river maps.
- Explain legend with map, not on a different page.
- Colours too similar – should be more distinct.
- Key colouring ok
- Wording unclear – needs to say flooding rather than rain.
- It's hard to find your own house on these maps.
- Some maps are known locally as inaccurate – don't show reality.
- Need to be told when map has changed.

Surface water map keys
- Would only read first section. Probably would not read the rest – too much info.
- What does 1 in 30 (3.3%) mean I have to do?
- Too much information compared to what a normal person wants.
- Low risk is not 'no' risk.
- Very informative

Figure 2.1 shows examples of flood risk maps – one for the risk of flooding from rivers and sea and the other for the risk of flooding from surface water.
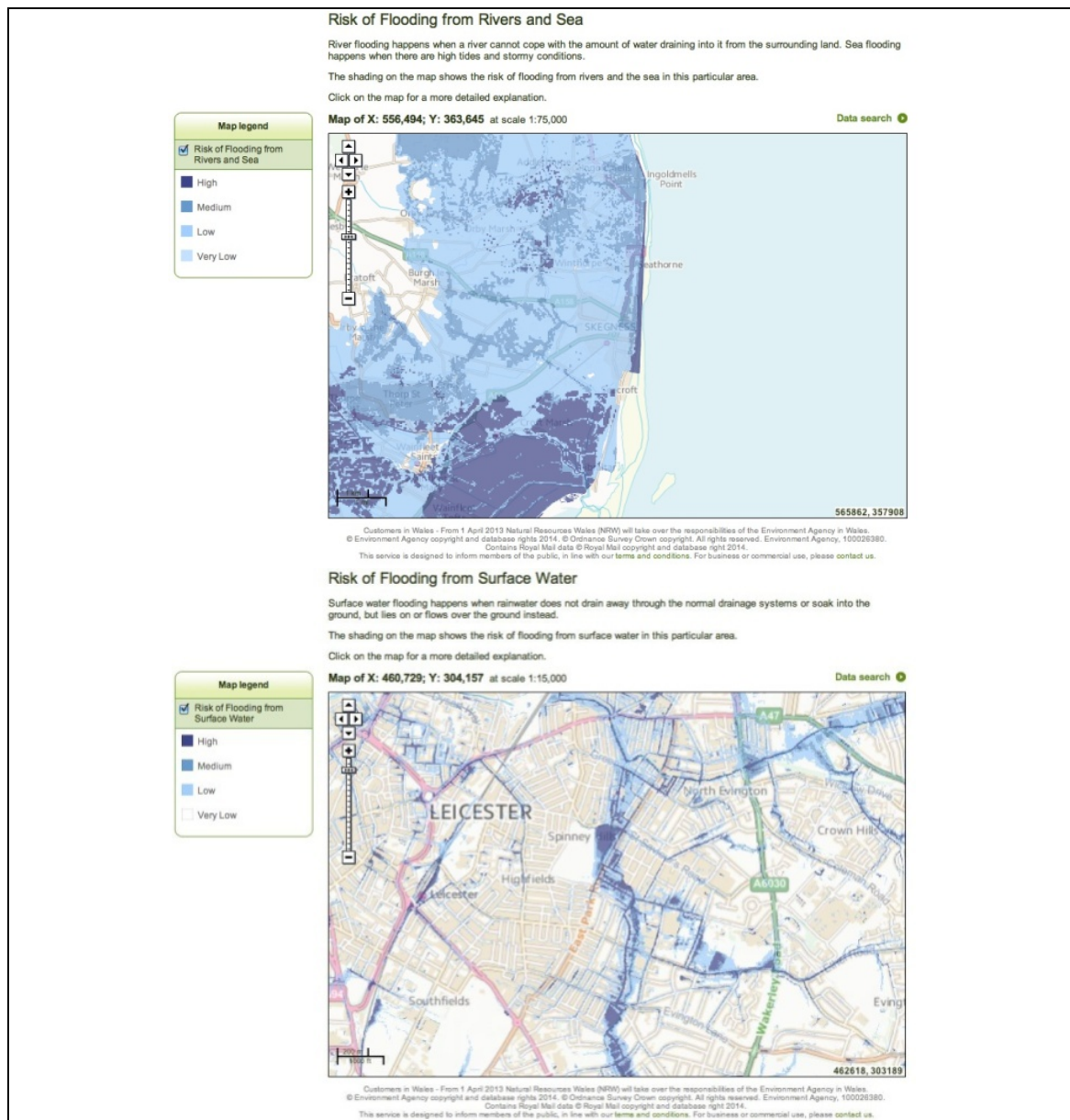
Figure 2.1   Examples of current flood risk maps

2.2.3   Understanding flood risk: ease of finding information

QUESTION: What phone number can you use to get up to date information about flood risk? Find out if you can get a flood warning for your house.

In between the first and second workshops (Dialogue 1 and Dialogue 2 in Figure 1.1), participants were asked to do some 'homework' – finding out the phone number to use and relevance of flood warnings as asked above.

When asked at the beginning of the second workshop whether they had completed this task, the clear majority said 'yes' compared with 15 who said 'no'. In York, Leicester, Newtown and Skegness, most people found out by using the internet, with a few asking people they already know, asking the local council or finding a number in the phone book. Just two people across all these locations already knew the answer. In Oxford, although some people used the internet, most people knew already due to their existing experience. Those participants who did not do the homework tended to say it was because they forgot or were too busy – no one said they had tried and failed.

Those looking online and registering for flood alerts had a mix of experience with the Environment Agency and local council websites. People generally said it was clear or easy, but others said it took a long time or had the potential to be complicated if you did not know what you were looking for, or if you did not have Internet access. One participant said they preferred the Natural Resources Wales website, while another relayed a positive experience of calling Floodline alongside a less positive experience of calling their local council. Many participants found it hard to find information on local authority websites as flooding information is held in multiple locations.

'I looked in the telephone directory and couldn't find it, looking for flood. In the end I phoned up the district council and she gave me two numbers – the Environment Agency number and the National Flood Forum. Within half an hour I'd spoken to all of them. And I have signed up for flood alerts.' Leicester participant

Positive experiences with previous communications about flood risk included reference to a local media blog that captured localised information during floods, and the provision of a fridge magnet by the local council, which contained some basic flooding advice and a list of useful numbers.

'People won't go looking for the information until they're aware that they might be flooded – just like you don't go checking what you'd do if you had a burst main or a fire. You don't just go checking out of the blue.' Skegness participant

2.3 Linking risk to action

Project objective 2b: Co-create, with members of the public, ways of helping individuals and communities link risk to appropriate action.

So as to explore linking risk to action, the second workshop focused on taking participants through a progressive scenario of flood communication and awareness:

- Stage 1: becoming aware of flood risk

- Stage 2: heightened awareness

- Stage 3: imminent threat

Participants were split into three groups to talk through the three stages. At each stage, they were exposed to certain materials related to flood risk. As well as giving their own opinions about the materials they were shown, each group concentrated on considering the materials from the point of view of a different audience: an elderly person with limited mobility, a young student and a single parent family. See Appendix 5 for a more detailed summary of the background information provided to each group describing their specific audience focus.

2.3.1 Stage 1: becoming aware of flood risk

During Stage 1, participants reviewed and discussed materials designed to make people aware of their flood risk.

The materials used to stimulate response and discussion in the 'Stage 1: becoming aware of risk' scenario are listed below. Beneath each one is a summary of relevant comments from participants.

M1: local council leaflet inviting residents to a meeting about flooding
- Make it simpler. It needs to convey urgency and the fact that it's about flooding, not a meeting, so put 'Flooding' or 'Warning' on it in big letters using red text. It's dull and grey – make it stand out more.
- It needs a clear contact number.
- It's ok – quite informative. A lot of it is common sense.
- It's not good – too vague/nebulous.
- A bit bland.
- Unlikely to take notice unless flooding is already a problem.
- The idea of a flood kit is good, but there could be more detail on what to pack.
- Too complicated for elderly people and excludes them through suggestion of getting sandbags and so on.

M2: Public Health England leaflet
- Useful for informing about basic actions, though could include more, for example, what to do with children, fresh water supply, sandbags, protecting precious items. More information on what to do – if a flood was happening you would not need the background information.
- A lot to take in.
- It's colourful and tempting to pick up – the pictures illustrating each point work well. Might be better than the personal flood plan as it's smaller, less dense, more visual.
- It's just common sense, but still probably necessary for a lot of people – though some say there are things listed they would not have thought about.
- Telephone number needs to be more prominent especially for people without internet. Could include information on Floodline and where to register.
- More like a checklist than an information leaflet.
- Too big to pick up from a surgery.
- Too complicated or daunting, perhaps even alarming, for elderly people.
- Attention grabbing without scaremongering.
- Rental properties could have a copy of this in the kitchen. A booklet like this could go in with the council tax bill.

M2a: Natural Resources Wales leaflet
- Provides some reassurance – there's a number to call, though could be more prominent.
- A bit 'busy'. Might be better as bullet points or tick boxes rather than narrative.
- Not clear whether it's a free phone number or not.
- Members of the public might look at this and think 'why have I got to do all the work?
- Gets to the point – clear heading.
- Some of this is common sense.
- Makes you want to find out more about Flood Forum.
- Font is a bit small and blue background makes it difficult.
- Should point out that Floodline is available in Welsh – this might be reassuring for example, for older people.

M7: 'Find Out if You're at Risk' web page
- The map doesn't enable pinpointing of a single property. At least having school and street names would improve it.
- Should include future plans – dredging, upgrading river banks, new housing estates – and historical data for specific areas.
- Some confusion between the different types of map and which should come first.

M7a: Flood Risk Homecheck report
- Are the maps accurate? For example, where one side of the road is at risk but the other one isn't.
- The visual parts are easier to understand than the text – too much information in the text.
- A range of views over whether such a report would put people off buying a house – the feeling that the report would not put people off tended to come from participants in areas with no recent experience of flooding.
- Some people had not heard of this, and expressed uncertainty over whether or not getting the report is compulsory.

M10: Video of river surfing
- It looks like fun. But for people who have experienced flooding it has a different resonance.
- If, for example, a student saw this, they might enjoy the video but think nothing more of it.
- This might be a way of catching people's attention.
- A contrast to later materials (for example, M4 – video of impacts of flooding) – the two together would show the contrast between excitement and the capacity to damage.

M11: BBC weather and Met Office websites
- Not local enough – there has to be localised information.
- Don't trust it as it's been wrong before.

QUESTION	What would you think/feel/do at this stage? How about other audiences?

Participants' own perspectives

Those with experience of flooding said that, before that experience, it was not something they tended to think about; even if they knew flooding happened in the local area, there is a sense that it doesn't seem relevant until the water is in the house. Those without experience of flooding expressed a mix of views encompassing more aware, worried, just being conscious of it, and ignoring it because they did not think it was relevant. Some said if it's not on your doorstep you don't really think about it, or are just relieved it's not happening to you.

The difference in individual risk appetites and personalities seemed to impact how participants responded to this first stage of the scenario. Some people discussed insurance as both a concern, and an opportunity for communication. Others looked at maps, for example, to find out levels of risk – there were comments about the number of different maps for different purposes and the potential for confusion.

> **DILEMMA**: How to show different data layers clearly in the maps, but without causing confusion.
>
> See Section 6.2 for a further discussion on flood risk maps.

Some participants said the Homecheck report would make them think twice about buying, while others said there are so many other priorities that this would not necessarily be first on the list, or that people just buy what they can afford anyway.

Participants in Newtown tended to say that it would be better to have separate documents in both Welsh and English with a sentence on each saying it is available in the other language, rather than a mix in a single document. However, the need for a good quality translation was also highlighted.

Some of those who had been flooded before said that they would not necessarily trust information provided by professionals and would carry out further research themselves (for example, using the internet). Others said the local council would be their first port of call for information, with some adding that there should be local community coordination to get information out about a flood (for example, through a committee).

Across the range of workshops it became apparent that many participants expected to find information on their local authority's website or phone line rather than going direct to the Environment Agency. This links to the earlier point about the current difficulty some people said they had in navigating their local council's website to find flooding information.

Some participants in Newtown said they trusted the Welsh weather forecast more than the BBC national forecast. There was a mix of views from these participants over whether they would call Floodline over, for example, speaking to a friend.

'I would ask them [local council], in the event of flood, what action would be taken locally and is there anyone who's acting locally for the village. I'd want to know if there was a system in place, and that there was someone local to contact in the event that it would happen.' Newtown participant

From the point of view of an older person with limited mobility (materials M1 and M2)

There was a range of views about what an older person with limited mobility's initial reaction would be to communication materials such as M2 (Figure 2.2). Several felt that this type of audience would not think the communication materials were relevant to them, that they were too complicated or for 'other people'. Others felt older people might be worried about new communications on flood risk, using words such as 'anxious', 'confused' and 'scared'.
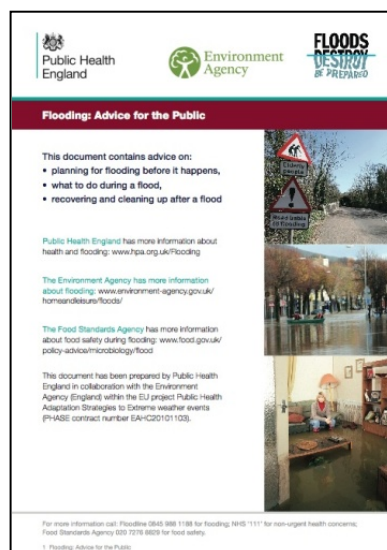
Figure 2.2   Public Health England leaflet (referenced as M2)

There was a strong sense that this audience would need support from someone else – for example, a neighbour or relative – to receive and interpret the information. Some participants, however, felt that an older person might be more likely to have experienced flooding before and therefore might not be fazed by it, but would still struggle to do a number of the things suggested, for example, on the Natural Resources Wales leaflet.

It was felt that direct face-to-face conversation (for example, at trusted places such as hairdressers or church) or someone knocking on the door (perhaps a trusted person) might be a better way to communicate with older people, as well as potentially radio broadcasts.

In terms of communication materials, participants commented that this demographic would probably just want to know which number they should call to talk to someone. There was a strong feeling that the materials were not accessible to older people in terms of the actions they suggest and the focus on using the internet.

Participants discussed what an older person's biggest worries might be at this stage. The focus was 'do I have to leave my home?' and 'what about my possessions?'

Examples of direct comments relating to what an older person might think/feel/do at Stage 1

Older person – stage 1

Not for me – for someone else

Where will I go if it floods?

What is it about?

Will I have to pay?

I haven't got a computer

Is this going to happen to me?

What do I do next?

THINK

FEEL

Panicky – looking for help

Curious

Worried / concerned

No urgency

Scared

Ring / rely on daughter

Ask friend/ neighbour for help

Phone local council

Do
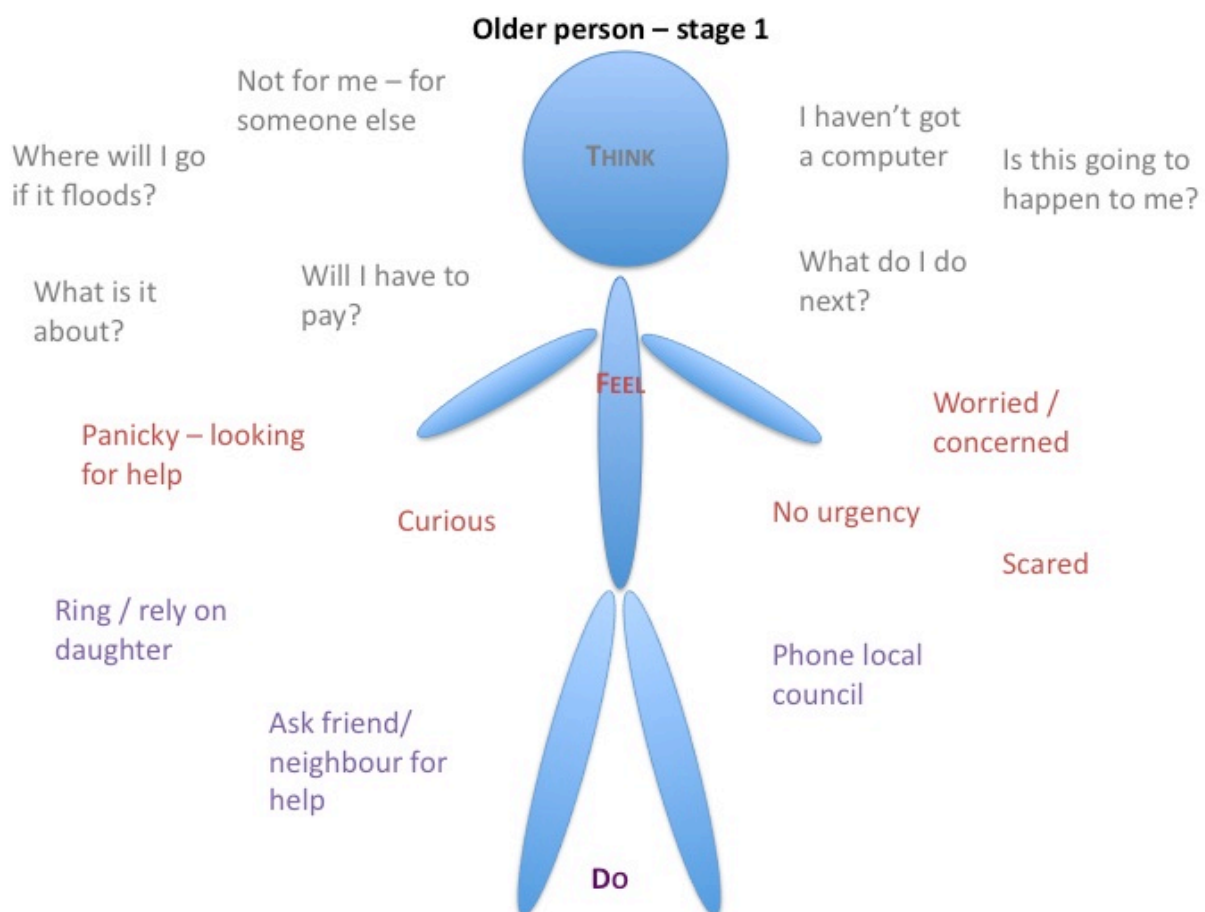
From the point of view of a student (materials M10 and M11)

There was a strong sense from some participants that students with no experience of flooding would not think about it and would not think it was relevant to them. These participants felt students might be slightly worried about key possessions, but would not worry about a rented property they did not own. Others said there might be specific

worries related to individual needs – for example, health and access to medication, or access to the sports field – or if they knew someone who had been flooded before.

There was a mix of views over whether it would be too early at this stage for a typical student to worry or plan – the point was made that it is hard to gauge and really depends on the individual, with one participant suggesting students are more conscientious about things like insurance now than in the past. Some said this demographic might want to know more, for example, by engaging with social media and talking to friends, asking their landlord about contents insurance, or speaking to their university. Others said students would be too busy focusing on other priorities and would do nothing, or that they might enjoy videos of river surfing but that was about it. One or two participants leapt to the assumption of immediate action at this stage, but it was clarified this part of the scenario was just about initial awareness.

Examples of direct comments relating to what a student might think/feel/do at Stage 1

Student – stage 1

Not high on priority list

Think about laptop and TV

Won't happen to me

Doesn't care about risk to property as renting

Pretty cool – but will forget about it

Not worried

Conscious, wants to know more

Dismiss it

Worried

Nothing special

Bury head in sand

Ask friends, twitter, Facebook

Find out if he is at risk

Have a look and move on

Nothing

Contact landlord about contents insurance

Call university

THINK / FEEL / Do
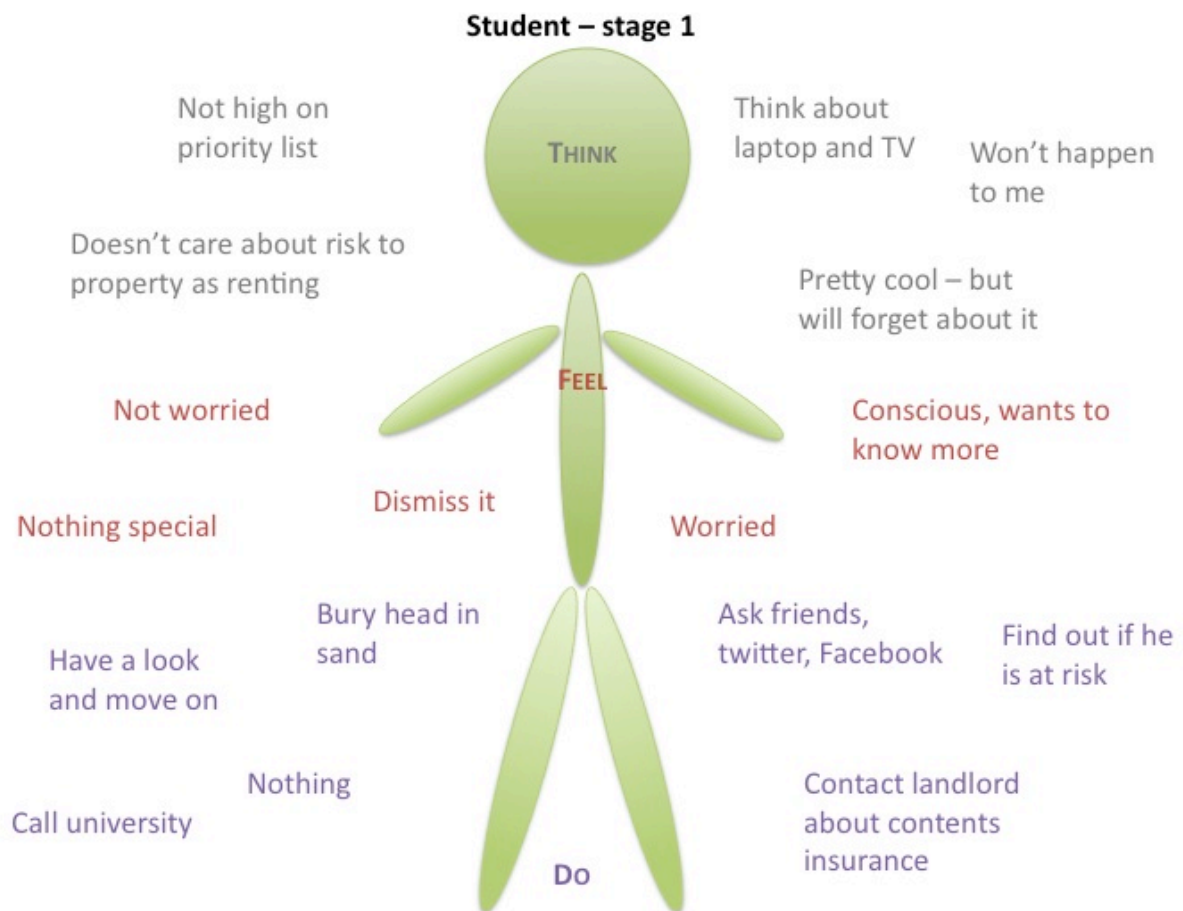
From the point of view of a single parent family (materials M7 and M7a)

Participants expressed a mix of views on the reaction of a single parent family to the materials. Many participants thought the parent would be slightly (or even very) concerned, and suggested reactions included doing further research online, speaking to the estate agent, posting on a local community Facebook page to find out what others knew, asking the school or other support network, finding out about insurance costs.

QUESTION: How do we account for different risk appetites in communicating the need for preparedness or action?

See Section 5.1.4 for a further discussion of 'reality versus fright' and Section 6.6 for a further discussion on flood warning services.

The main concern for this demographic, it was suggested, would be the safety of the children.

When discussing the impact of a Homecheck report indicating flood risk, some participants said that once a person had decided to go ahead with the house purchase, they would probably put flooding to the back of their mind or forget all about it, as the heart often rules the head. It was felt to be unlikely that this demographic would spend money investing in home protection such as water pumps. Participants suggested it was the purchaser's own responsibility to find out about the risk.

As with other potential audiences, participants said that, overall, a person's reaction would depend on their individual appetite for risk.

Examples of direct comments relating to what single parent might think/feel/do at Stage 1
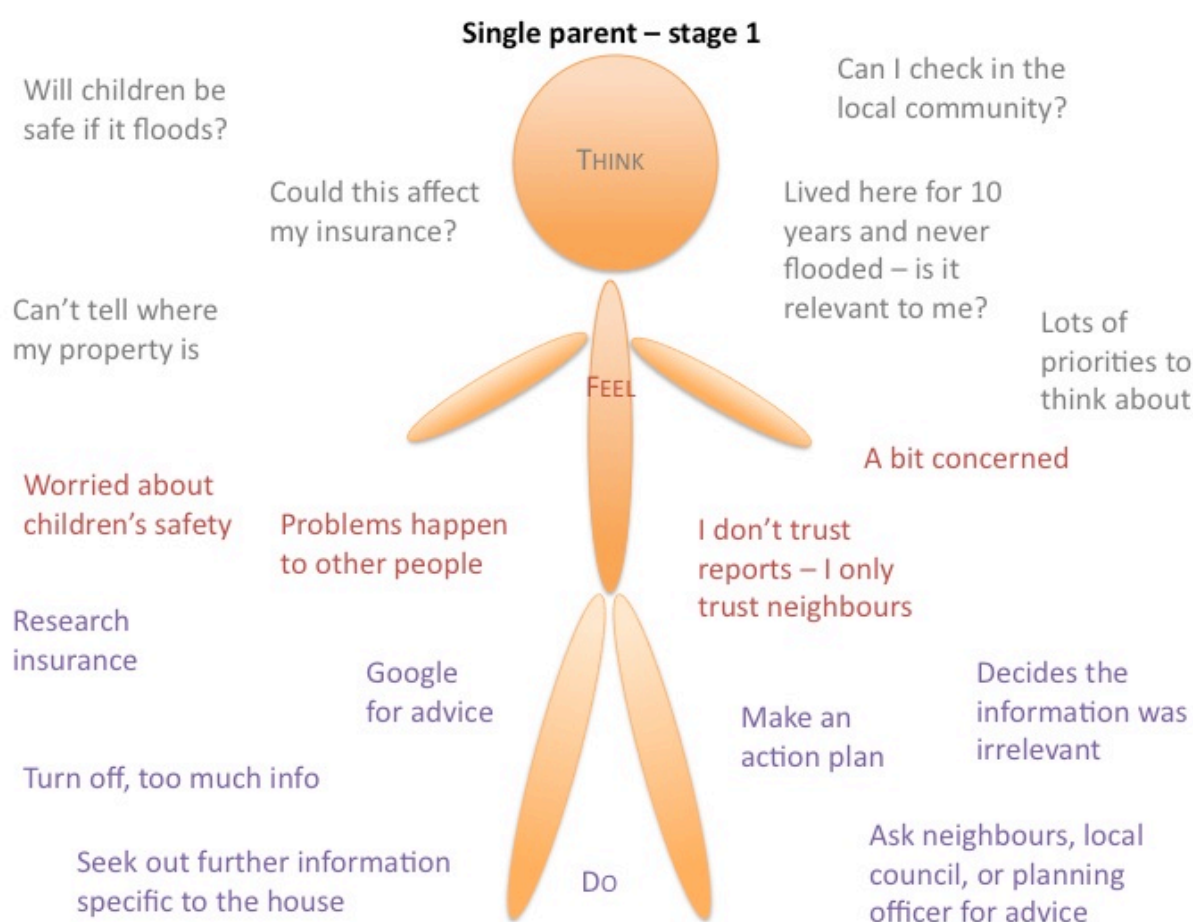
Ideas and actions

There were a number of specific suggestions for future communications arising from this session (see Section 3.3).

2.3.2   Stage 2: heightened awareness

During Stage 2 participants reviewed and discussed materials designed to help the public become prepared for flooding. Figure 2.3 shows one of these materials, the Environment Agency's 'Flood Destroys' poster.

Figure 2.3   Floods destroy poster (referenced as M3)

The materials used to stimulate response and discussion in the 'Stage 2: heightened awareness' scenario are listed below. Beneath each one is a summary of relevant comments from participants.

M3: Environment Agency 'Flood Destroys' poster (Figure 2.3)
- Mixed views on effectiveness of the images. This is pretty unlikely to resonate with students, but would probably with families (especially the teddy bear) or older people (for example, memories in photographs). Different images will connect with different demographics, for example, a picture of a laptop (or phone, or Playstation), a piece of furniture, a dog swimming in the front room, a local street name, focus on property damage as a lasting effect, or a picture of a tree and flood mark once the flood has gone down. It would probably be a struggle to find one image that affects everybody.
- Could be quite emotional for some people. For some this was frightening, while others felt perhaps a level of scare is needed. Swapping the main line for 'Be prepared, flood destroys' might help.
- Could be more impactful – for example, make the 'underwater' section blue to clarify it is water with items floating, give more context. Or even showing the water as more dirty and filled with sewage. Something like 'could this be you?' or 'it's devastating if you lose them' might be a helpful addition, and the focus should be on lives rather than objects. Moving 'Flood destroys, be prepared' to the top of the poster instead of 'Home sweet home' might help.
- The simplicity is good.
- These posters could be used on bus stops, as bookmarks, community notice boards or local shops, Mumsnet, Facebook.
- Similar to the 'Think Bike' posters, which were effective.
- There is a different number from Floodline on this poster.
- Doesn't provide any practical help in terms of what to do – is all 'doom and gloom'.

M4: Video on impacts of flooding
- Good video – practical with good advice. Useful to know what actually happens. Makes it real – accurate, not shocking.

- Surprising or shocking for some – it could leave them feeling helpless and overwhelmed, or perhaps frighten vulnerable groups such as elderly people. For others it might act as a catalyst to action (that is, being a little frightened might be necessary). A number said that seeing this would have made them more aware or prepared – for example, encouraging contact with the Environment Agency, council and insurers to find out more about potential actions.
- Doesn't provide any further advice on what to do before or during flooding, or 'what next' after those initial steps.
- Describes things you can't show in a photo – for example, the smell.
- Combine this with the river surfing video to show the contrast.
- Higher impact than written materials.

M5: Call to Environment Agency Floodline
- On hold for a long time.
- Stuck to script, not very personal. Difficult to get information tailored to specific needs – for example, elderly people, those without the internet, other languages, other formats.
- A different experience in Newtown, where participants felt the person taking the call sounded very helpful and not scripted. However there was still confusion over some of the information given (for example, in relation to probabilities).
- Lack of detail about what to do next to get follow-up information and how to contact local Environment Agency offices.
- The different options might be confusing (for example, surface versus river flooding).
- Very friendly/approachable and tried to be helpful.
- The caller should have their risk level explained rather than just being told 'you're high risk' or 1 in 100 versus 1 in 30. Or could say 'this is when your area was last flooded and this is why'.
- There is sometimes a difference between the level of risk shown on the flood risk map and the level of risk given by Floodline for a specific postcode.

M8: Personal flood plan
- A good (or even great) idea and fairly straightforward – though some said they probably wouldn't do one.
- Many people had not heard of this.
- Useful to have a list of numbers – for example, to put up on the wall.
- Might work well alongside something like the Public Health England leaflet
- Contains things people had not thought of, but also a lot of common sense.
- Mixed views on how widely it would be used – for example, depending on personal sense of relevance, other priorities and so on. Query what is the impetus to filling it out and there is a lot to fill out/too much there. Likely people would fill out as much as they felt to be relevant to them.
- Even in rented accommodation a landlord could fill it in, print it out and perhaps display it on the wall, or include it with the tenancy agreement.
- Various options to publicise this, including with council tax bills (perhaps with the Flood Destroys poster to encourage action), local radio, send one to everyone registered with Floodline, make part of a pack along with a key fob or fridge magnet, use the fire brigade …
- These could be linked to postcode and even pre-filled out by postcode.
- Ideas for additional inclusions included options for where to get sandbags and other flood protection products, where to go to get to higher ground, inclusion of doctor/school/hospital/pharmacist information, what to do with animals, find out how to turn off key utilities, weigh wheelie bin down and use for storage, find access to clean drinking water, take camera, put meat from freezers into bags, phone

insurance company, keep spare credit card, fill in using pencil, and determine next steps.
- Make the section asking who could help you or who you could help more prominent.
- The online and paper versions look different.
- Ensure consistency – for example, mention of polyethylene in conjunction with sandbags but not listed in equipment list, ensure sandbags are listed as an 'if and when' requirement.
- Might prompt people to sign up for flood warnings.
- It could be stored with insurance documents or other important papers.
- Suggestion of an app version positively received.

QUESTION   What would you think/feel/do at this stage? How about other audiences?

Participants' own perspectives

Participants expressed a range of views over how they would feel at this stage. Those with less experience of flooding said they might start to feel a little more worried, and perhaps start to take some simple actions such as moving stuff out of lower cupboards, getting a suitcase ready and signing up for flood warnings – although some said they still would not worry or see the relevance to them.

Hardly any of the participants, including those with existing experience of flooding, said they had made a flood plan and most people had not heard of a flood plan. However, many of those familiar with recent or regular flooding appeared to have some kind of flood plan in their heads based on previous experience. Across the board, participants tended to respond positively to the idea of making a flood plan. However, some said they would not bother with the exception of the numbers or commented, that it was fairly obvious stuff, or that it could be more useful; these tended to be participants with existing experience of flooding. Some of these participants also expressed a sense of inevitability about the occurrence of flood.

QUESTION: What drives people to move from information ('a flood plan is a good idea') to action ('I'm going to read this and think through the questions, and maybe even write something down')?

See Section 5.1 for a further discussion of actions and Section 6 for a further discussion on what type of materials resonate with participants.

A few participants thought the flood plan should be widened into a more generic emergency plan, as this would be useful in a range of circumstances – for example because a flood plan should easily be transposed into a fire plan. Others suggested it sounded like it was for businesses and should be called flood checklist or guidance instead. A number of people said they had plans in their heads, while some said they were not sure what they would do in terms of specific actions related to a flood plan.

'I just keep my eye on the river. To be honest, I don't think there's much you can do. It's still going to flood anyway, and there's still the furniture downstairs and that will get ruined.' Oxford participant

From the point of view of an older person with limited mobility (materials M3, M4, M5 and M8)

Participants thought that the Flood Destroys poster with the photograph might be more effective for this audience, but that the video might cause fright or anxiety, or leave a person feeling uncomfortable in their own home.

<div style="border:1px solid red; background:#f5c6c6; padding:8px;">

DILEMMA: Being realistic without overly scaring people.

See Section 5.1.4 for a further discussion of 'reality versus fright'.

</div>

A clear message as a result of all groups calling Floodline 'on behalf of an older person' is the need to take into account people without a computer and especially to be able to notice when a caller is potentially vulnerable and deal with their call in a different way. This might include establishing who else could help (family, neighbours), arranging a personal visit, and adding a caller to a list of vulnerable people.

It was felt that older people might be left feeling confused after a call to Floodline and would probably not do anything except perhaps call a relative. Participants thought this demographic would need the help of a family member or friend to go through the flood plan. There was a strong message from some participants that talking about percentage risk with this group of people would just lead to confusion.

> 'Fit, able bodied and 84 but with no phone or email – she should go on some kind of register, and someone really needs to go and see this person. It's not about the people we know – they're safe. It's the people we don't know.' Oxford participant

Examples of direct comments relating to what an older person might think/feel/do at Stage 2

Older person – stage 2

Am I insured? What will it cost?

Can't replace photos

THINK

Make sure I have emergency number available

Confused Panic **FEEL** Worried – am I next?

Horrified, terrified in response to the video

Worried about losing sentimental valuables

Reassured by mention of low risk on call to Floodline

Get help Talk to daughter or neighbour

Call number on poster

Nothing

Do
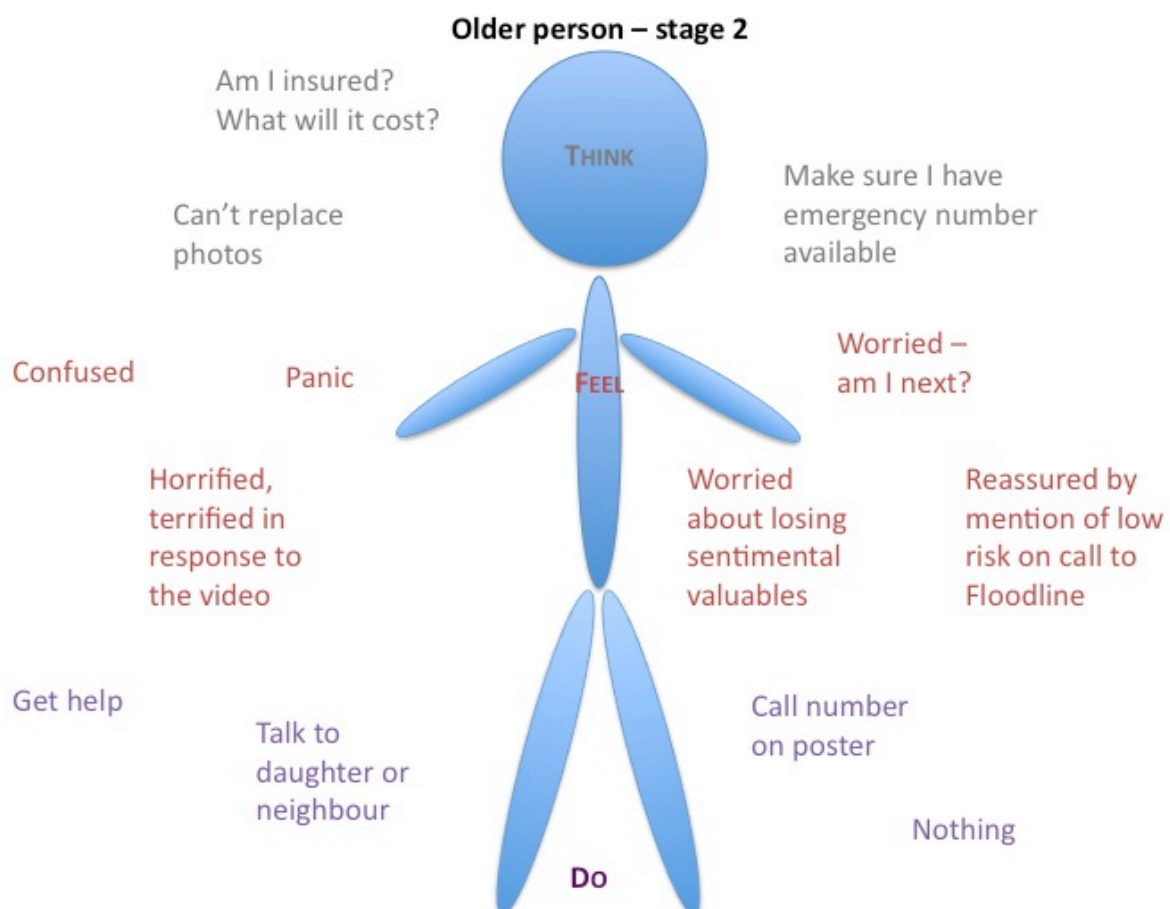
From the point of view of a student (materials M3, M4 and M8)

Materials such as the Flood Destroys poster and, to a lesser extent, the video were felt by some not to resonate with students, particularly those living in rented accommodation. Others disagreed and thought that at this point this demographic might start to take the threat more seriously, perhaps readying themselves for action (for example, place to put valuables and laptop, ensuring supply of medicine is safe). These participants suggested specific actions that students might take at this stage, including carrying out an online search, as well as talking to friends or family, university, and the landlord or estate agent. Some commented that, at a younger age, people are less likely to worry about this kind of thing. Others said a student would be unlikely to see the poster in the first place.

When presented with the personal flood plan, some participants felt that students might use it as a loose guidance for what they should do if things were to get serious – for example, flood kit, essential documents and passport, mobile phone, medication – as not everything would be relevant to a student. Others thought the tendency would be to ignore it and focus on other priorities – such as playing on the Playstation – or assume their landlord was dealing with it. One participant suggested there could be guidance to put useful numbers on your mobile phone (for example, insurance). Again, participants said it would depend on what type of person the individual was.

Examples of direct comments relating to what a student might think/feel/do at Stage 2

Student – stage 2

THINK

Ignore
Where would I go in a basement
Thinks university or landlord should do something
Is my health at risk?

What do I have that is worth anything and what would I do with it?
Takes it seriously / thinks about going

FEEL

More worried
Slightly more panicky

More confident

Get a flood kit ready / make action plan
Ring Floodline

Contact letting agent or landlord to ask about flood risk or insurance
Contact university
He would think it was a good idea but might not do it

Contact parents
Procrastinate
Look at Twitter / social media

Do

From the point of view of a single parent family (materials M3, M4 and M8)

Participants felt this audience might be concerned by the posters and video – particularly the link between the teddy bear and children – and that this would prompt single parent families to find out more information such as where they might go if it

happened and what they could do to mitigate, or to think twice about buying somewhere based on the Homecheck report.

Actions such as moving furniture upstairs were felt to be too much for a single mother to do on her own. There were a range of views about whether this demographic would be likely to make a flood plan. Some said it would be likely, or that the individual would need to know they were at risk before being motivated to make a flood plan; others said this audience might not make one because of other priorities such as looking after the children.

Examples of direct comments relating to what a single parent might think/feel/do at Stage 2

Single parent – stage 2

Why did I buy the house?

What should / can I do?

THINK

Who could prevent this – council?

Depends how close to house purchase (having seen home report then)

Is the school at risk and does it have a plan?

FEEL

Thinking about insurance

Worried about children / being on her own

Remaining optimistic for now

Panic

Teddy on poster and germs in video – would shock / make nervous

Find out more about actual risk

Prepare an emergency plan

Start thinking about actions / where to go etc

Phone up local council for information

Move!

Sign up to flood warnings

Do

Ask neighbours, about history of flooding
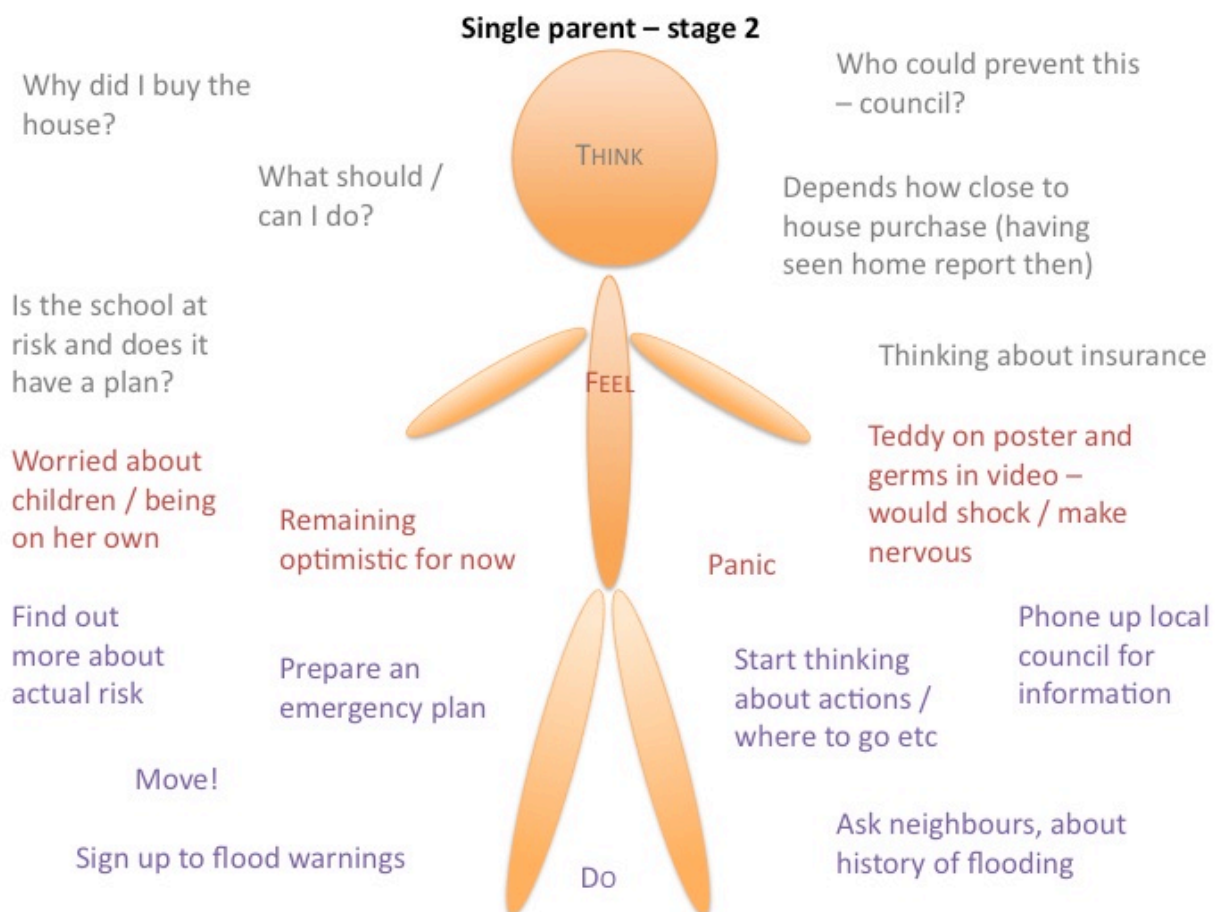
Ideas and actions

There were a number of specific suggestions for future communications arising from this session (see Section 3.3).

2.3.3 Stage 3: imminent threat

During Stage 3 participants reviewed and discussed materials and communications issued during a flood event with the aim of making people take action to mitigate flood impacts.

The materials used to stimulate response and discussion in the 'Stage 3: imminent threat' scenario are listed below. Beneath each one is a summary of relevant comments from participants.

M6: Phone warning (via Floodline Warnings Direct) from Environment Agency
- Any elderly person getting this in the middle of the night would be frightened. In fact, many people could be frightened by it.
- Would appreciate the warning.
- The warning doesn't give you much time. Could it provide an estimated time?
- How do you listen to it again?
- Are there options for other languages?
- The area at risk was a bit unclear.
- There should be advice on follow-up and what to do if things get worse.
- Information was given too quickly, difficult anyway but would be especially difficult for the hard of hearing. An option to be repeated would be good.
- Use a recorded voice not a computerised one.
- A lot of information, including the phone number twice, which is good.
- Speak more slowly and say clearly 'This is a flood warning, please listen carefully, please have a pen and paper ready. Stay calm. This call will be repeated in 20 minutes. Look at your personal flood plan'.

M9: Text flood warning
- Some preference for sending it to everyone within signal area rather than having to sign up for it (for example, opt out versus opt in).
- This could lead to panic for those people not prepared.
- Needs to indicate whether action is required, and if so what and when.
- Perhaps include a recognisable logo or phrase (for example, flood destroys, be prepared).
- The phone line listed (Floodline) is annoying due to the use of keypad numbers, but when information is eventually received, it is useful. Could get jammed though if everyone calls.
- Could it say more? It could, for example, give flood warning low/medium/high as texts one, two and three – this might help people take notice.
- Some confusion between flood alert and flood warning

M12: Met Office tweet on local flooding
- Agreed it was a good idea to tweet, but that it needs local information, for example, 'in your area'.
- It is worth saying 'be prepared for possible flooding' as part of the tweet.
- Useful to show all affected areas.
- Confusion over the colours (maps were blue – this is yellow).
- Unclear what it means – provide a link for further information or detail.
- Consider appropriateness of hash tags: #rain was not thought to be useful

M13: Weather and flood warning symbols
- Some people more familiar with these than others. Some felt the symbols were fine and they were used to using them, or that they did the job they needed to.
- Confusion over the difference in colours for the Met Office and Environment Agency symbols – suggestion of consistent use of red, amber and perhaps yellow – green is irrelevant in terms of warnings and encouraging actions. Traffic light colours are more understandable to people. Red is good for a warning.

- One set of symbols track from worst to best scenario, and the other set is the other way up.
- Confusing to show the severe flood warning symbol as a way of showing 'no severe flood warnings' – perhaps in these circumstances the symbol should just not appear.
- Perhaps too much information – people just want to know about their own home.
- It's only easy to tell the difference between the symbols when you see them all together. Some wanted words/further explanation as well as symbols.
- Difference between weather warning and flood warning – can these be done in a combined fashion?
- Used by some people with experience of flooding as a gauge – for example, look upstream to see what's happening, help to gauge when the worst is over.
- You will never please everyone, whichever symbols are used.

| QUESTION | What would you think/feel/do at this stage? How about other audiences? |

Participants' own perspectives

Participants with experience of flooding expressed mixed views on the warnings. These ranged from them prompting action among individuals and communities, being a useful tool, to being inaccurate or mistimed in the past. Some questioned the usefulness of warnings on a very local level (for example, where local weather varies a lot). It was generally felt to be better to be warned and nothing happen that the other way around, especially if it gave people more notice to take action, though some participants said they got so many warnings they became blasé about them.

> **QUESTION**: If some previously-flooded communities are disconnecting themselves from reliance on authorities, how do their communication needs differ and what do they need in terms of information, support or networking?
>
> See Section 5.2 for a further discussion on different types of audience.

Invariably, the combination of flood warnings and local knowledge and observation is used by these participants to gauge the level of action required and, if necessary, to take actions as individuals and communities. A number of participants recounted examples of specific actions taken by them and in partnership with other local people in response to flooding, generally without reliance on the authorities for help. This ranged from knocking on each other's doors to putting flood protection measures in place.

Participants without experience of flooding indicated they might panic at this stage, depending on their level of preparedness, and would start to take actions such as moving furniture and gathering together essential items. There was a common message that protecting your home is your own responsibility, as well as concern that there were systems in place to identify and help vulnerable people – some said they would check on vulnerable neighbours themselves. Some participants said that they would want a clear message over whether or not to evacuate as part of the warning.

Some participants discussed differing attitudes to risk, for example, the fact that some will only do something when they see the water coming up. As with other conversations, there was a sense that people often relied on their own observations to make assessments of risk.
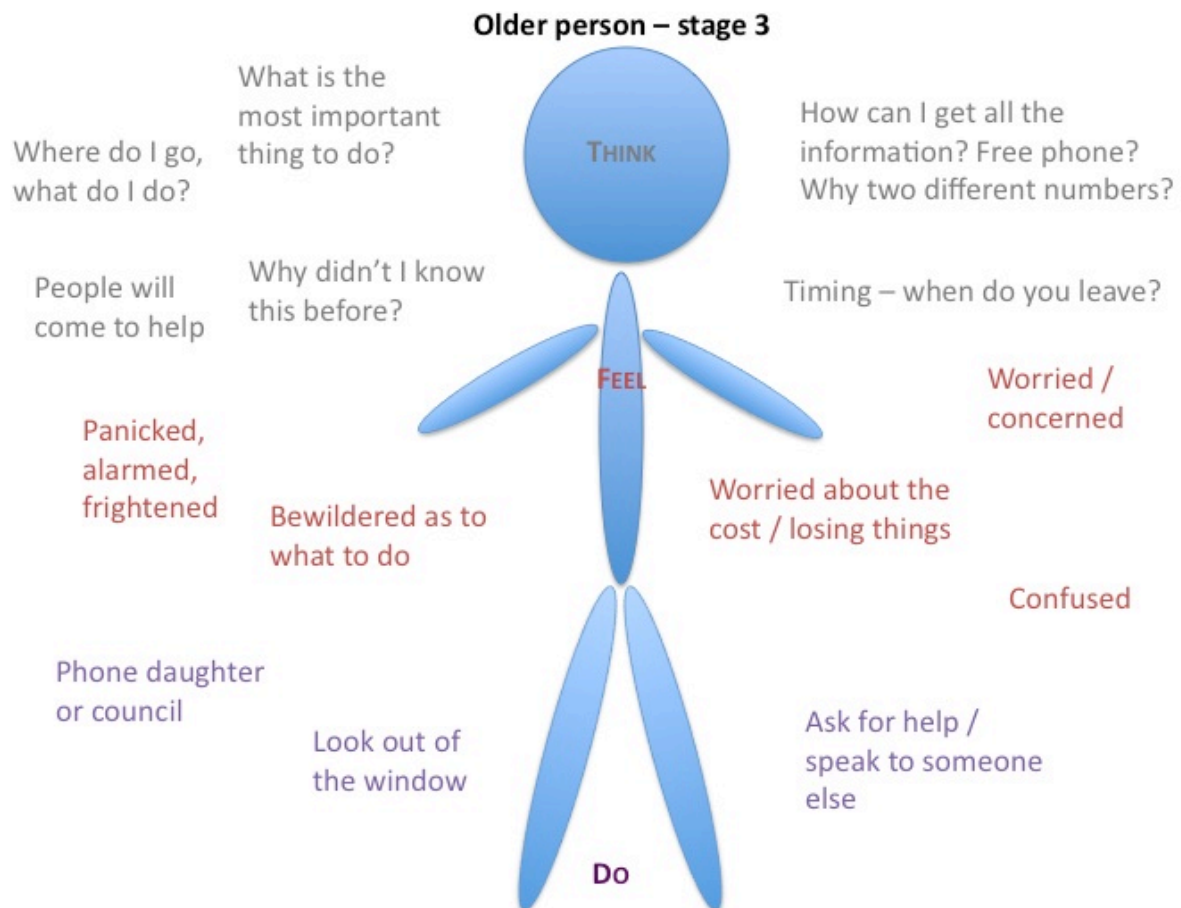
From the point of view of an older person with limited mobility (materials M6 and M13)

There was a common feeling that at this stage older people would need some form of help or support, particularly in relation to moving furniture, knowing where to go, and so

on. One participant suggested relatives might receive flood alerts on behalf of older people and therefore would already be informed. Participants commented that this demographic would most likely be worried about the cost, leaving their home and valuables, and knowing who to call.

Without tailored advice or support, it was felt that older people might be bewildered as to what action to take. Participants said this demographic would be likely to call a friend or relative, or perhaps look at their flood plan if they made one, or that they might just sit and wait for someone to knock at their door.

Examples of direct comments relating to what an older person might think/feel/do at Stage 3

Older person – stage 3

THINK

What is the most important thing to do?

Where do I go, what do I do?

How can I get all the information? Free phone? Why two different numbers?

People will come to help

Why didn't I know this before?

Timing – when do you leave?

FEEL

Panicked, alarmed, frightened

Worried / concerned

Bewildered as to what to do

Worried about the cost / losing things

Confused

Phone daughter or council

Look out of the window

Ask for help / speak to someone else

Do

From the point of view of a student (materials M12 and M13)

Participants thought a student receiving the Met Office tweet might not know what the tweet meant or what to do as a result. And might not need to do anything beyond what they had already done in any case if it is a yellow level. They thought that, depending on the circumstance a student might talk to their flatmates, call the landlord, and keep an eye on the weather. Some people thought there might be a degree of panic or worry, especially in the case of students with chronic illness such as asthma; others felt this demographic would simply listen to the news and look online for flood warnings. Others said that, if a student had signed up for warnings, they probably have some sense of responsibility.

If an individual then got a red warning, or if they looked out of the window and saw concrete proof of flooding, the feeling was they would kick into action and pack to go and stay somewhere else for a few days, or at least take their laptop and go upstairs. There was some debate over the degree to which students would get involved in what

was happening around them in the local community. Some participants said they thought a student might take messages more seriously if they came directly from their university or college.

Examples of direct comments relating to what a student might think/feel/do at Stage 3

Student – stage 3

THINK

Disassociation of surge with weather

Why hasn't anyone informed me?

Might be vulnerable because of asthma

What does severe mean – how deep?

It might not be me

Might be taking it more seriously

FEEL

More scared

Might not be very worried

If sees rain will start worrying

Anxiety might make asthma worse

Bury head in sand

Ask friends, twitter, Facebook

Find out if he is at risk

Have a look and move on

Nothing

Call university

Contact landlord about contents insurance

Do

From the point of view of a single parent family (materials M9 and M13)

Several participants felt that a single parent's response to the text flood warning would be to feel unsettled or to panic. People said specific actions might be look for the flood plan and start to enact it (if they made one), call Floodline, think about getting sandbags, call the school, and call other parents or interact with online forums.

Others said they hoped this demographic would react, but that they might need some specific guidance as part of the text indicating what actions should be taken. There was one suggestion that if the text was not received, there would be no realisation of anything being wrong. As before, participants thought the first priority would be the children. They suggested single mothers might ask friends and neighbours for help, for example to move items of furniture.

Examples of direct comments relating to what a single parent might think/feel/do at Stage 3

Single parent – stage 3

THINK

What to do with the kids? Are they safe?

How to get out? Sandbags?

Where's that flood plan gone?

What does the warning mean? How soon?

Are insurance policies up to date?

Why haven't I though about this earlier?

FEEL

Frustrated due to length of message

Worried about the security of the property if she's not there

Panic

Might need a prompt – e.g. immediate action required

Get in emergency supplies: water, food

A bit worried, agitated

Ask neighbours for advice / ideas

Find out more information / number to ring

Rely on neighbours for help – e.g. moving valuables, furniture

Might leave if has somewhere to go

DO

Ideas and actions

There were a number of specific suggestions for future communications arising from this session (see Section 3.3).

> 'Information is percolated down through the various agencies – it starts at the national level and comes down to the local level. The local council should have an informed local committee, so someone would be the contact and they'd tell their immediate neighbours. I think we're all responsible for communicating risk.' Newtown participant

3 Analysis of Stage One dialogue outputs

Stage One consisted of the first two sets of dialogue workshops held in five locations (Leicester, Newtown, Oxford, York and Skegness) attended by a total of 95 participants.

3.1 Empowering people to take action

Project objective 2c: Co-create, with members of the public, ways of helping individuals and communities feel empowered to take action.

This section reviews the outputs from the dialogue results and considers the implications for the public taking action to mitigate the impacts of flooding. Six issues are highlighted.

3.1.1 Barriers

A number of barriers to action became apparent during the course of discussions. These included:

- previous lack of accuracy of information – for example, weather forecast

- 'it won't happen to me' attitude – differences in individual risk appetite

- lack of community coherence/higher levels of isolation and more diverse communities

- confusing and conflicting information

- too many sources of information/too many organisations

- lifestyle might get in the way – for example, moving house, new school, other things going on

'[The district council] held a flood fair a few years ago, every year. The Environment Agency was there, Severn Trent didn't bother turning up though. The main people there were different companies selling flood devices, sand bags, gel filled bags, door barriers. So unless you knew what you were looking for it wasn't any good.' Leicester participant

'No matter how much data there is, you believe local people from history but they can't see into the future.' Oxford participant

3.1.2 Previous experience

Previous experience and local knowledge appear to be a big driver in the willingness and ability to take action. This included personal experience of flooding and having friends or family who had been flooded. Some participants said they watched the weather to gauge the need to take action. The message that 'unless you see it coming

QUESTION: What can usefully be communicated while the flood is actually happening?

See Section 6.6 for a further discussion on timing of messages.

up the driveway you won't think about it' came up a number of times across different workshop sessions. Others thought that experiencing 'a little bit of flooding' might be enough of a catalyst.

> 'When we built our house my husband built the stables really high because he'd seen the flooding before.' York participant

3.1.3   Community action

Discussion around community resilience and coherence cropped up repeatedly across all five locations. There was a sense that flooding could bring communities together into a state of collective action, but also that more connected communities might be naturally more prepared to deal with flooding. Several participants said they felt community spirit was not as strong as it used to be (for example, during wartime) and that people do not communicate as much as they used to.

> **QUESTION**: How can overall community resilience to flooding be enhanced in at risk communities that have not yet been flooded?
>
> See Section 5.2 for further discussion.

Flood wardens were the topic of some discussions. Their role and responsibilities were discussed – some felt it would be a lot of responsibility to take on that role. However, a couple of participants said they wanted to sign up as flood wardens as a result of attending the dialogue. Some participants commented on the importance of the information and assistance provided by flood wardens, though there was some debate over whether they would be trusted if people did not know them, and a question over whether they would be useful prior to a flood, or only when an incident is occurring.

Participants with experience of flooding seemed to have a clear sense and expectation of community action in the event of a flood, due to a 'community memory' of past events. Participants in York said they would be prepared to go and talk to another community about their own experiences with flooding. It was less clear whether participants less affected by flooding would be willing to attend a local meeting on flooding.

> **DILEMMA**: Those with experience of flooding might be willing to share their experiences, but are other communities receptive to their messages?
>
> See Section 5.2 for further discussion.

Participants, particularly those in Newtown, discussed local percolation of messages, for example utilising a community council to filter information through the community.

> 'I never have signed up to the flood warning – I'm not on the computer and I thought that was the only way to get it. I live next door to someone who always knows – people knock on my door and let me know what's happening.' Oxford participant

3.1.4   How much information is too much?

Comments about the need to provide a realistic picture of the impacts of flooding cropped up repeatedly. Several participants said that seeing something like the video outlining response to flooding (material M4) would prompt them to take action. However, some participants suggested that care needed to be taken so as not to scare people. This was particularly true of discussions about specific groups such as elderly people, who may not know what to do as a result of hearing all about impacts. This links to the point below about the need to follow information on impacts with information on actions.

> 'Don't play down the risk by saying the risk is low (if they are genuinely at risk).'
> Skegness participant

3.1.5 Combine information on impacts with information on actions

A number of participants touched on the issue that they want to know what to **do**, particularly, for example, in relation to messages about the impacts of flooding – that is, don't just tell us it could be bad, empower us to do something about it. Many participants highlighted the usefulness of knowing specific actions that could be taken before, during or after a flood. Others suggested specific mechanisms or measures that might encourage actions to be taken, including:

- using children as a medium for the message – 'pester power' – but being careful not to frighten them

- have a similar service for flood mitigation as exists for fire prevention

- utilise evening meetings in the local community centre or church hall

- use local media – for example, interview someone from the Environment Agency

- have 'flood watch' similar to neighbourhood watch

- get the message across that prevention is better than cure, or prevention saves lives

3.1.6 Local, relevant, repeated

In several conversations participants highlighted the need for localised, relevant information, so that people could gain a true picture of their own situation, and also to make communication relevant to individuals. Others suggested that hearing the same message through a variety of channels would help to raise awareness and prime people for action.

> **DILEMMA**: Can a 'one-stop shop' (advocated by some participants) also cater for up to date locally relevant information needs?
>
> Not resolved in this dialogue, but see Section 6 for a further discussion on what kinds of materials resonate with participants.

3.2 Communicating risk and likelihood

Project objective 3: Help agencies adopt a consistent approach to conveying risk and likelihood, enabling them to join up their subsequent activities.

There were consistent findings and a series of suggestions on how to address the challenge of communicating risk and likelihood.

3.2.1   When and what, not if

Many participants commented that detailed
information on risk and probability was not helpful
or did not mean anything to them. There was
often a feeling that if it was going to happen –
based on the idea of when, rather than if – it was
better to be prepared than to know what the risk was.

DILEMMA: Tell people what the risk
is, or tell them what to do about it?

See Sections 5.1 and 6 for further
relevant discussion.

'We're worrying about something we've got no control of. Surely what we should be
doing is look at things we could be doing.' Leicester participant

'They seem obsessed about the probability of it flooding rather than saying if it happens
this is what you should do. When people talk about fire they don't go on about the risk.
They just say 'this is what you should do to stop it happening, but if it does happen this
is what you do'.' Skegness participant

3.2.2   Knowing who to call

A common theme arising during
discussions of specific materials was the
need to have a clear, single telephone
number that people could call for
information and advice. Participants
appeared to have a variety of
experiences with finding the right number
to ring – some found the right number
straight away, while others got stuck and
ended up asking someone else (for
example, the local council).

QUESTION: How do we know which of these
suggestions would work? E.g. is there
relevant research we can draw upon, or do
we just need to test them out?

See Sections 3.4 and 5.1 for some overriding
principles, and Section 6 for a further discussion
of what types on materials resonate with
participants.

There appeared to be little knowledge of the fact that people could contact their local
Environment Agency office for information. Knowledge of Floodline was enhanced by
the homework task and discussion during the Stage 2 scenario (see Section 2.3.2), but
existing knowledge of the Floodline number appeared to be limited and to occur only in
those areas with recent experience of flooding.

3.2.3   Ideas for communication

The workshops elicited a huge range of suggestions from participants, including
improvements to existing mechanism and new ways of communicating flood risk they
thought might work. These are listed by theme below.

Ideas for communication around flood risk

Flood plans

- Have a flood plan in every home, even currently low risk areas.
- Consider different flood plans for different types of people – for example, business
  people, students.
- Make it compulsory for landlords to make a flood plan for rented accommodation.
- Consider a generalised 'emergency' plan.
- Utilise council tax or insurance information to get plans out to people.

Rental properties and landlords

- Specific warnings for people renting a holiday home – for example, automated systems to warn people of rising levels, visual images of cars underwater, copy of Public Health England leaflet in the kitchen of rental properties (although some people commented it was down to the individual to look after themselves).
- Duty on landlords or letting agents to tell tenants about flood risk, and perhaps even have a flood plan on the wall (although this raises concerns about saleability) – see also the point above about compulsory flood plans for landlords.

Local mechanisms

- Better advertising more relevant to specific communities – for example, local papers.
- Put a board with LED lights in local community meeting places such as shopping centres – these could constantly show the risks and people would get used to it.
- Inclusion of flood content in council newsletters.
- Village workshops focusing on actions and mitigation.
- Get people to come along and talk at neighbourhood watch meetings.
- Local ambassadors or a group of people to call upon in flood situations.
- Key workers should go out to community centres once a week.
- Word of mouth is always effective but need the right information.
- Put in place mechanisms for getting out information locally, for example, through a village committee.
- Put information on community council websites.
- Use local points such as community centres, libraries, local hairdressers, WI, neighbourhood schemes, or even local champions.
- Empower local people to give out information.

Historical accounts

- Historical accounts of flooding for specific buildings and records of surface flooding.
- Show real past stories on a regular basis.
- Use pictures of historical flooding, for example, on community notice boards, so that people know how bad it might get.

Children and students

- Educate kids at A-level stage – those who will be moving into their own properties.
- Do more on flooding with school children generally, although this would be unlikely to get onto the school's agenda in low risk areas.
- Educate people in schools and universities – if this happens, here's what you do, and here's who you call.
- Automatically register students for a flood app. Have flood information at the freshers' fair.

Specific communication ideas

- Use a clip of a water bomb being posted through a letterbox as a potential viral video.
- Use imaginative images.
- Design something that shows water levels in a house compared with the river and height of house above the river.
- Produce an advert showing how bad it might get – for example, water coming up through toilets.
- Messages on bus stops, bus tickets or the buses themselves.
- Messages on milk bottle tops, beer mats, back of toilet doors.
- Use more visual methods – for example, virtual landscape with water, a dynamic flood map.
- Fridge magnets and pens with phone numbers on.

- Have a constant feed of information via different channels/methods – for example, local pub, notices in the park, back of toilet doors, community boards/signs, local radio sessions on flood risk.
- Leaflets through doors may work for some people but not others – depends on how it looks, what the obvious message is, and who picks it up.
- Utilise social media – for example, viral videos, twitter hashtags, sponsored texts and links on social networking sites.
- A one-stop shop with flood risk information from all relevant authorities, including information on local mitigation – a single point of contact, and a joined up approach.
- Universities to have a central place for information.
- Include a section on the national weather forecast just on flooding.
- Look at insurance companies as a potential way to educate people, as the need to pay money might prompt attention or action [this was in contrast to a general lack of trust in insurance companies suggested by several participants].
- Target communications to specific people and address them personally to increase the chances they are taken notice of.
- Consider using the video or something similar more widely to communicate impact.
- Tell people more about the work of the Environment Agency before and after flooding.
- Use loudspeakers on cars like in the general elections, or even flood sirens.
- Tell people more about surface water flooding.
- Flood prevention week – 'keep your feet dry' or 'wear your wellies to work' day.

Vulnerable people

- Add a clear message to communication materials: do you know a neighbour who might need help.
- Consider how to ensure a single list of vulnerable people in a specific area in the event of flooding.
- Locate vulnerable people in high risk areas and send them a pack of information and a flood kit. Work with organisations such as AgeUK. Also schools and people with mental health issues.
- Introduce a separate track for Floodline tailored towards vulnerable people.
- Provide a tailored number for vulnerable people to call so that they can feel confident in phoning and receiving tailored support and advice.

Mapping and warnings

- Stop talking so much about probability and risk.
- Coordinate colours between the Environment Agency and the Met Office.
- A map showing your area with hotspots to show whether you were at risk.
- A system that enables you to put in your postcode and it will tell you what action you need to take.
- On the Environment Agency website, make it clear that 'last updated on 12 December 2008' refers to the last warning issued rather than when the web page was last checked and updated.
- Use a simple symbol, for example, 1 fish = low risk, 5 fish = high.
- Link likelihood of rain with making a flood checklist – for example, on local broadcasts, or send everyone at risk something in the post. Perhaps a specific localised TV advert to make people think it could actually happen.
- Include specific actions as part of flood warnings.

Welsh language

- Those sending out information in Wales could ask customers which language they want it in to avoid sending both languages.

- Make information available in Welsh and English, but enable people to register their preference to avoid wasted paper.

Principles – see section 5.1

'I saw a picture of my street with people rowing down it, which really makes you think.' York participant

3.2.4   Flood marks

Some groups discussed flood marks and a way of embedding the notion of risk into people's minds based on historical flooding activities. Those participants that discussed flood marks seemed to think they were a good idea. There were some suggestions for specific enhancements, including provision of visual context – for example, marking of 0.3–1.5 metre flood levels next to an image of a car door – and the potential for lamp-post art incorporating water levels. Others added caution that members of the public might not understand flood marks and that such marks do not take into account the speed of flood water, which could be relatively low height but very fast.

3.2.5   Expected sources and responsibilities

Across the board, participants indicated they would expect some kind of information on flooding from their local authority. Some commented they would not think to call the Environment Agency, while others said they would expect messages from within the local community, or from local media such as the radio.

QUESTION: What is the landlord's responsibility and what is the tenant's, in relation to taking action to be prepared for a flood?

Not resolved in this dialogue, although Section 3.3 contains a relevant message about communicating directly with tenants rather than relying on landlords.

There was a lot of discussion about landlord responsibility (private and council) for ensuring tenants are informed about flood risk and, for example, ensuring sandbags are available if needed.

A number of participants, especially those with existing experience of flooding, highlighted the importance of personal responsibility, often in conjunction with good localised information and a wider institutional responsibility to provide support, information and resources.

'Too much of a blame culture as well – blaming the council – but it's a force of nature. If I choose to live in a flood risk area, I have chosen to do that.' York participant

3.2.6   Trusted sources

All of the groups discussed trusted sources of information. The range of organisations or sources participants said they would trust included:

- emergency services
- word of mouth / local community / central community figures
- friends
- voluntary organisations

The Environment Agency and local councils elicited a mix of responses, with some participants saying they would trust them and others querying information they had received in the past that was inaccurate or poorly timed. Some participants said they would be less inclined to trust insurers, water companies and local councils, though these were not strong messages – with the exception of insurance companies.

3.3   Recommendations

Project objective 4: Produce recommendations from members of the public and stakeholders on resources which are likely to result in positive changes to how people think and act in response to flood risk.

The messages and dilemmas scattered throughout this report provide a good overview of the areas likely to be covered by recommendations. In particular, see the communication ideas in Section 3.2 and the more detailed discussion of prototype materials in Section 6. In addition, participants at both Stage One workshops spent some time reflecting on messages for the key providers. Here are some of the things they said:

- Use local knowledge to inform flood risk and build a relationship with local people.

- Make information and advice local and relevant.

- Make messages clear and concise, and visual – think about designing for greater impact.

- There should be a joint approach between agencies at a range of levels, for example, standardised colour coding, a combined app, a single message, a single phone number, recognisable branding and ironing out duplication.

- Different people have different communication needs, so use the full range. For example, consider the needs of vulnerable groups such as the elderly who may not have internet access, create visual materials for those who cannot read, and have ways of communicating with tenants rather than relying on the landlord.

- Utilise local people and communities to get messages out.

- Promote the flood plan – for example, send one to every house in a flood risk area, streamline to an emergency plan.

- Don't focus on risk.

- Talk in normal language, like you would at home – make it simple.

- Undertake a big marketing or advertising campaign nationally and/or local radio campaigns.

- Focus on children – education and pester power.

- Consider new or enhanced channels, such as sending information to homes with council tax, flood proofing DIY SOS programme or videos, TV ads.

- Show people it's not just about rivers – it's also about surface water, burst mains and so on.

- Provide people with more advice on home protection and flood-related products.

3.3.1 Other areas of concern not directly related to flood risk communication

Throughout the dialogue process, participants raised a number of areas of query or concern in relation to flooding, but not direction related to flood risk communication. These included:

- new developments – flood proofing these, and concern about their potential impact on flooding and apparent lack of restriction in relation to flood risk areas. Also the need for information on new developments that might affect people's own property and clarity over how local people can influence the planning process, for example, by providing local knowledge on flooding that could affect new developments.

- blockages of ditches, drains, watercourses – who to go to for help / who to report it to

- obtaining insurance in areas at risk of flooding

- discussion of specific measures and kit that individuals could use to protect their houses (for example, air bricks and sand bags)

4 Changes in attitudes and understanding – Stage One workshops

At the start of the first workshop in each location, participants were asked to place sticky dots on four scales relating to the following questions:

1. How much, if at all, do you know about flooding?

2. How concerned are you about flooding happening to you in future?

3. How confident are you that you know how to find information about flooding if you needed to?

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'

These questions were then repeated towards the end of the second workshop. The results are shown below, by location, with a brief summary of any related discussions in each case.

It is interesting to note that, even in areas recently flooded, a number of participants at the beginning of the first workshop said they were unsure where to go for information or did not know a lot about flooding. This potentially has implications for how people are communicated with after flooding events.

4.1 Leicester

Start of workshop1 = red dots; end of workshop 2 = blue dots
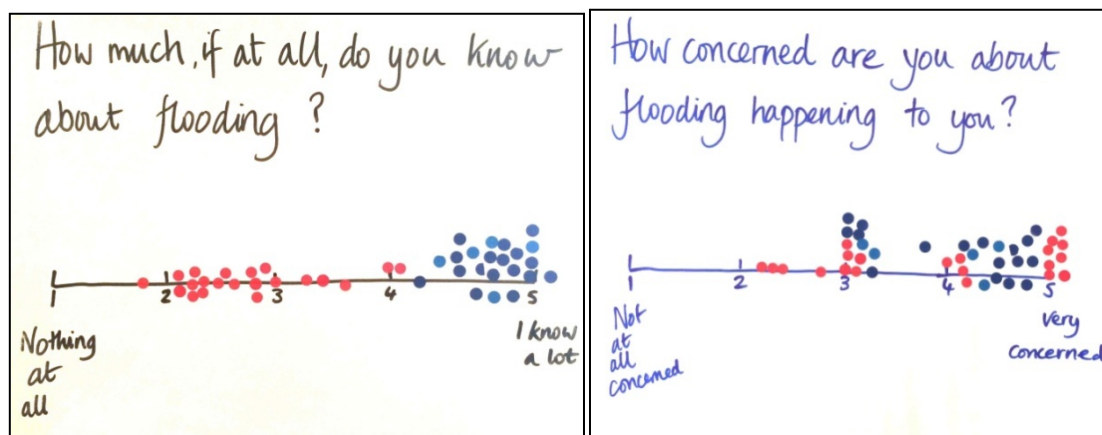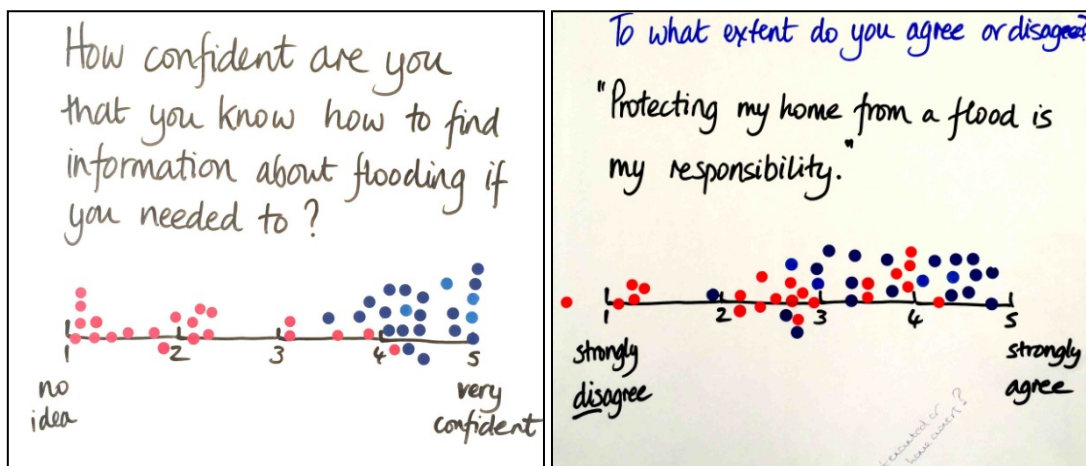
1. How much, if at all, do you know about flooding?

'All the information we got here.'

'When we were told we were in a flood risk area. I felt I had to look for more information.'

'Also to be flooded you don't need to be near a river or a stream.'

2. How concerned are you about flooding happening to you in future?

'I'm still very concerned, but I've always been concerned.'

'I got concerned after seeing the lady with the house flooded.'

'For me – I now know where to get information, so I moved it away from very concerned as I know I can get help.'

'I did the same – more knowledge about where to get information from.'

3. How confident are you that you know how to find information about flooding if you needed to?

'Because of the forum, today'

'The information is still fragmented. We have Floodline but you have still got to know what to do, contact councils and so on. You still have to find that information, especially if you are not on the Internet.'

'There is too much information.'

'I know where to get it from but by the time I look – knowing myself – I'd be at panic stage and would leave it too late.'

'I'd go to the council – I trust local information.'

> **DILEMMA**: Making information available for different needs and interests, while avoiding information overload and consequent confusion.
>
> See Sections 3.3 and 5.1 for some overriding principles, and Section 6 for further discussion on what type of materials resonate with participants.

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'.

'I was strongly disagreeing and now I've moved it up. I think it's both – agencies and community – it shouldn't all be us and it shouldn't all be them.'

'I moved mine. I put strongly disagree before as there are still things the council could do to make it better, but have moved up to 3 as I can do stuff to my house if I can find out what products are available.'

'I moved mine very slightly towards strongly agree – there is an understanding the council should do stuff for you but with all the other responsibility they have at that time of crisis, you won't be towards top of list, for example, compared to power stations and so on You've got to take responsibility for your own property. You might expect some advice and help but they won't come along and built a wall around it.'

'Mine's in the same place – I think everyone says the council should put this and that in place, but if we're having a flood it's up to me to keep my house safe. I put it around the 4 mark. It's like making sure your doors are locked.'

'Protecting your home is not just bricks, it's knowledge too. Bigger organisations can get that information out there.'

4.2   Newtown

Start of workshop1 = red dots; end of workshop 2 = blue dots
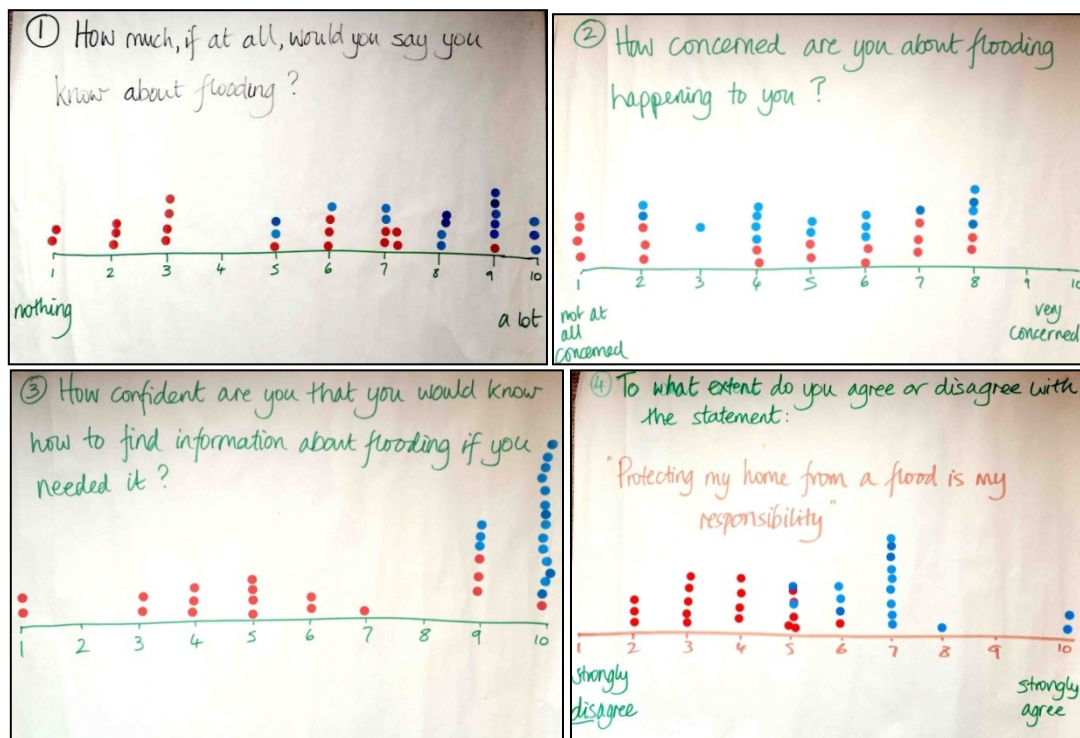
1. How much, if at all, do you know about flooding?

'We've covered everything.'

2. How concerned are you about flooding happening to you in future?

'I've gone from 2 to 3 – I felt really safe before but now I've learned more I don't feel so safe!'

3. How confident are you that you know how to find information about flooding if you needed to?

'Very – you've told us where to get the info.'

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'.

> 'I'm still unsure about whose responsibility it should be. I feel the government should do more.'
>
> 'I think we all need each other – it should be a joint thing between the authorities and individuals.'
>
> 'I think it is the owner's responsibility – make sure he's got somewhere to go to if it floods.'
>
> 'I live in rented accommodation, so I think my landlord is as responsible as I am. He should inform me about these things.'

4.3   Oxford

Start of workshop1 = red dots; end of workshop 2 = blue dots (raw data)
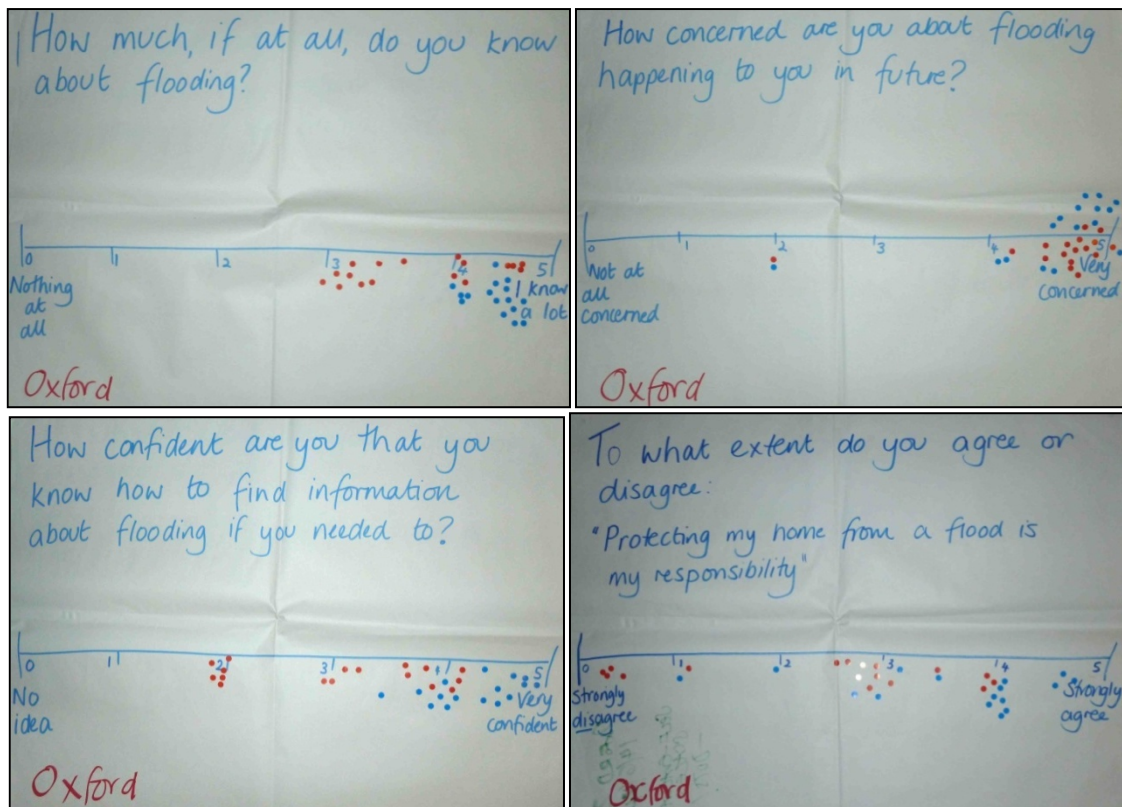
1. How much, if at all, do you know about flooding?

> 'We learnt more about how it works than how to stop it.'

2. How concerned are you about flooding happening to you in future?

> 'I'm still concerned about flooding in the future because I really don't think government is doing enough to support the environmental services – would like to see a minister for flooding.'
>
> 'I think along the same lines – I'd rather see more action than talks.'

'I would be less concerned if I thought the planning people would take more notice of what the Environment Agency told them about new development.'

3. How confident are you that you know how to find information about flooding if you needed to?

'From my personal experience talking to people and talking to some Environment Agency people I've found new websites, other places I can go to for more information.'

'I didn't know there were apps and other things on the Internet.'

'The flood plan was useful.'

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'

'We've learned more about flood risk.'

'I didn't move my dot because I do think it's my responsibility but because I am in a mobile home I don't have full responsibility for everything around me.'

4.4   Skegness

Start of workshop1 = orange dots; end of workshop 2 = green dots (raw data)
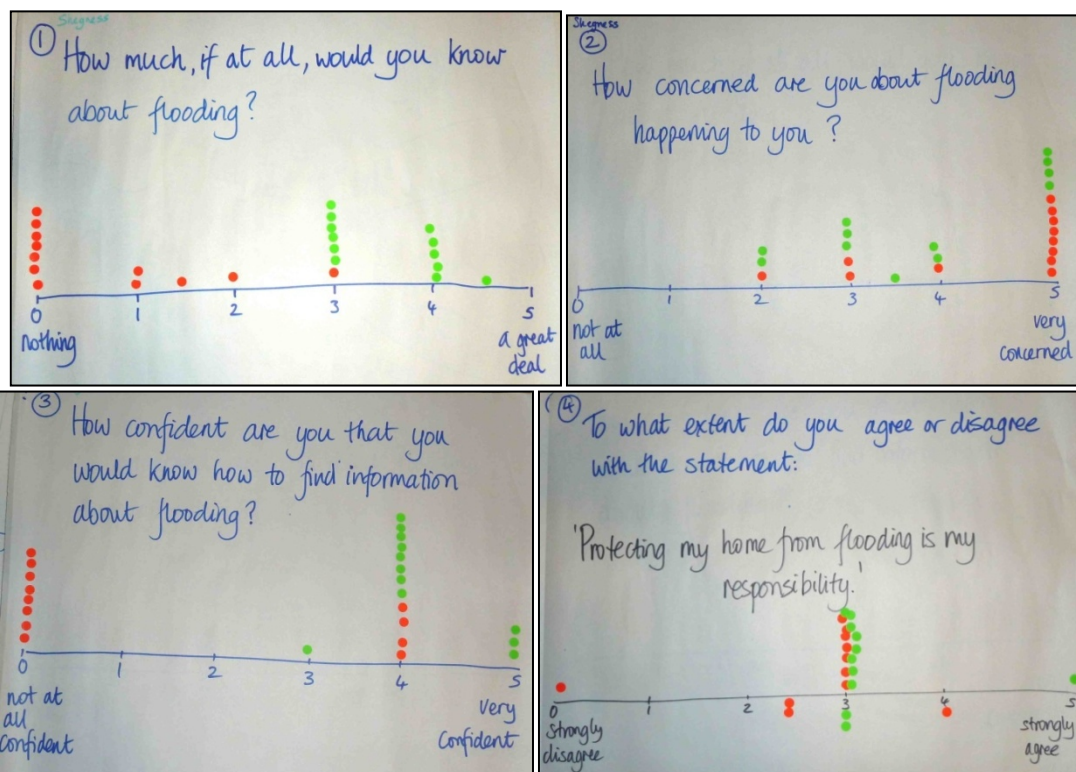
1. How much, if at all, do you know about flooding?

'We'd have been bored if there was any more information.'

'Could have been given more info about surges.'

'If we'd have covered more information we'd need to be here for longer.'

2. How concerned are you about flooding happening to you in future?

'Mine's changed because I was very concerned because I knew nothing about it. I'm less concerned now because I know what to do about it. Also I know it's not a tsunami now.'

'I'm always going to be concerned – my dot stayed in same place.'

'I've found out that where I live is in a low risk zone so I'm less concerned about that now.'

3. How confident are you that you know how to find information about flooding if you needed to?

'More relaxed now that we know more.'

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'.

'Mine's in the same place – it's half my responsibility and half the authorities. I'll protect my property and they should protect the land that my house is on.'

'When you pay council tax they should protect your home.'

'If the council asked for extra money to deal with flooding every month I'd pay.'

'It takes two parties – the council and agencies should pass the information on, and it's my job to be aware and learning more.'

'I strongly agree that it's our responsibility to protect our own home. The council is already doing its bit.'

'But are they doing enough? It's no good us doing stuff they're not doing anything.'

4.5   York

Start of workshop1 = dark red dots; end of workshop 2 = orange dots

1. How much, if at all, do you know about flooding?

Public dialogues on flood risk communication
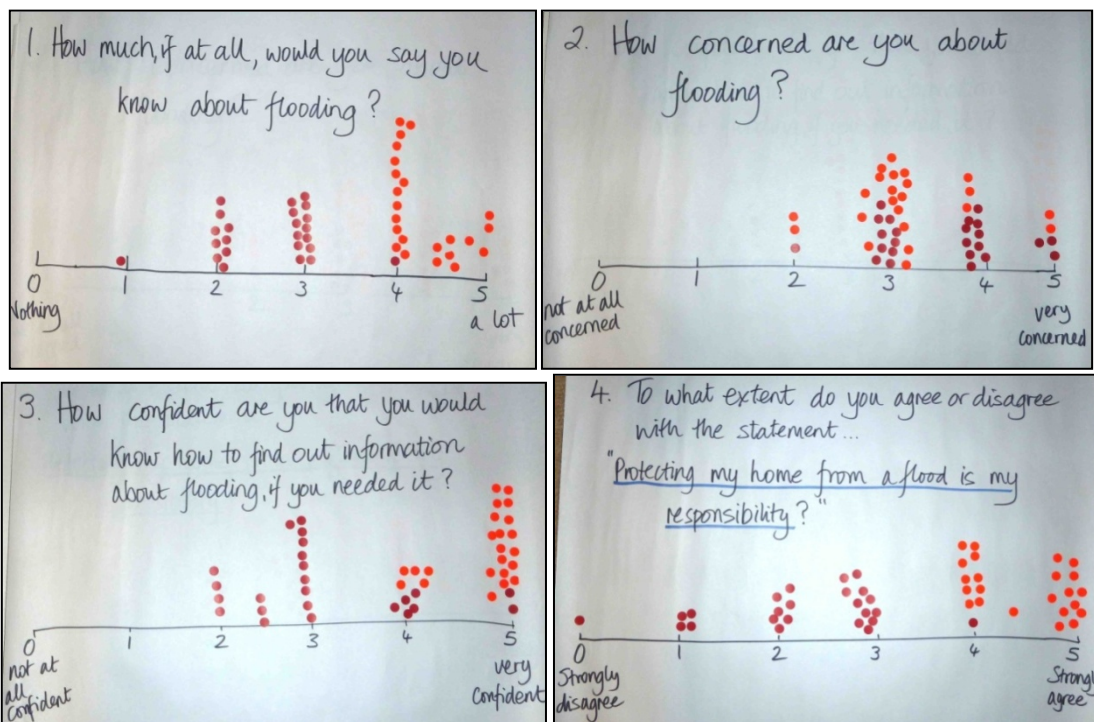
> 'We've learned a lot.'
>
> 'We've learned from people who have been flooded.'
>
> 'It's good having a specialist so we can ask them questions.'
>
> 'I have a stronger sense of empowerment now on how to deal with flooding.'

2. How concerned are you about flooding happening to you in future?

> 'I'm less concerned now because I know a lot more now.'

3. How confident are you that you know how to find information about flooding if you needed to?

> 'I feel a lot happier about it now I've done my homework. The homework worked!'

4. To what extent do you agree or disagree: 'Protecting my home from a flood is my responsibility'.

> 'Since we've been talking about it, it comes down to what you can do for yourself. You can't hold back the flood. You've got to look after yourself, pets, things in the house... That's the least you can do.'
>
> 'Be prepared.'
>
> 'Good to know what other people are thinking.'
>
> 'Even if you can't stop it, info is a good tool.'
>
> 'Apart from a few people who've been flooded, most of us have only spent a few minutes thinking about flooding until now. Now we've spent 10 hours doing it so we know a lot more now.'
>
> 'Talking about it is very good.'
>
> 'Need to get the information out there – the red dots have moved over to the far end now that we've all talked about it, so that shows that info is important.'

4.6   Awareness of responsibility

The participants' awareness of flood risk, actions and impacts increased as a consequence of attending the two public dialogue workshops. The changes in flood knowledge experienced by participants had an impact on their perceptions of responsibility. The participants discussed how flood risk was a joint responsibility between authorities and the public. Many participants moved their dot between the beginning of workshop 1 and the end of workshop 2 as they felt that they understood more what their responsibilities were.

5 Overall messages from the Stage One workshops

5.1 Cross-cutting themes

A number of cross-cutting themes arise from the various Stage One workshop outputs.

5.1.1 Accessibility

Throughout the conversations, the requirement to make information accessible to groups of people with particular needs was highlighted.

This was especially true of elderly people, with a number of comments around lack of access to internet, isolation, lack of mobility, and fear or lack of awareness overriding action.

> **QUESTION**: Should there be different 'communication pathways' provided for audiences with specific needs (for example, people without the internet, vulnerable people)?
>
> See Section 5.1.1. and 6 for further discussion on accessibility in relation to specific materials.

Other specific accessibility needs included people with hearing or visual impairment, those with no Internet access, people who do not speak English as a first language.

Ways of making information more accessible included having a non 0845 number and provision in different formats such as phone and print.

Overall, the message is that set communication methods need to be pre-programmed to be flexible or even (for example, in the case of Floodline) to go 'off-script' once a vulnerable person has been identified.

5.1.2 Actions matter

Communications with clear, direct messages and a strong sense of 'what to do' resonated more strongly with participants than 'wordy' leaflets – as did the idea of making an action-focused flood plan. However, linking message to actions remains a challenge without direct experience (see below).

Many participants were clear that there should be less focus on probability and risk, as they said these figures would be meaningless to a lot of people. There was also a sense from some that people need to know 'we are in this together', that is, they will do their bit but need to know organisations and agencies are also acting.

5.1.3 Historical experience is important

Whether experience is of nothing happening (that is, not being flooded) or receiving information that was inaccurate or mistimed, the common theme appears to be that the historical state is the norm to be overridden. For example, those people not previously flooded do not expect to be flooded in the future, However, this may be due largely to the tendency for people not to want to think about flooding (for example, due to 'optimism bias'), even in some cases when they have been flooded before. In addition, those people who have received poor information in the past from specific sources expect it to remain poor – institutions such as the Environment Agency have to work hard to gain trust, and this trust can very easily be lost.

5.1.4 Reality versus fright

Although there is a balance to be struck between providing realistic information and frightening people, a number of participants suggested that it is better to provide an accurate picture of the impacts of flooding even if it does scare people, as this would potentially kick members of the public into taking action to prepare for flooding. However, for others, there was a fine line between this and just being frightened.

There was an overall sense that, if members of the public were going to be given a strong message about flooding (for example, Floods Destroy posters or a flood warning), this should be accompanied by guidance in relation to actions, so that people feel empowered to do something either in preparation or in response to an imminent threat. It was generally felt to be better to be warned and nothing happening than the other way around, especially if it gave people more notice to take action.

> **Overarching take-home principles**
>
> - Think about the needs of different audiences.
>
> - Don't assume a little bit of information will scare people – telling the truth about risk and impacts is more likely to lead to action.
>
> - Stop talking about probability and risk in mathematical language as it means very little to a lot of people.
>
> - Be really clear with people on what is happening before, during and after a flood, and what actions they should take.
>
> - If you are asking people to take individual actions, tell them (in the same communication) about what local / national organisations are doing too – that is, we're all in this together.
>
> - Focus on making information local.
>
> - Don't just focus on the negative impacts of flooding (for example, posters) – what can people do about it

'It might need to be a bit of a shock factor. At the moment we're all a bit blasé – we've lived here for ages, nothing's happened, I don't need to worry. Maybe they need an actual model that shows if we have this much rainfall, this is what will happen, and you'll see that's my house – that might make you think.' Leicester participant

5.2 Variations

Alongside these common themes, there are some apparent differences between the responses of participants in areas with recent experience of flooding and those without.

5.2.1 The flood literate and flood unaware

There is a clear difference in the awareness and readiness to take action between those who have experienced recent or regular flooding and those who have not. Those who have experienced flooding tend to have their own systems of readiness and local communication in place. Those without recent experience are generally not primed to take action in response to flooding. However, some participants in areas not recently flooded gave the impression of being well organised and networked, suggesting that they might display a good degree of personal and community resilience in the face of such an event.

This raises a more general point around encouraging resilience specifically in relation to flooding versus encouraging more resilient communities in general. There are still a number of measures such as making a flood plan that even those with experience of flooding do not seem to engage with.

However, it is worth considering what the end goal of each communication actually is, and what constitutes action: is the purpose of a flood plan to ensure members of the public fill in all the boxes, or to think through the questions by way of a mental preparation exercise?

5.2.2   Two different audiences?

The 'flood literate' and the 'flood unaware' both have a tendency to fall outside the communication systems of the key providers in different ways.

The flood literate tend to use Environment Agency and Met Office communications as useful tools, but rely heavily on their own experience, local knowledge and observation, whereas the flood unaware tend not to see the relevance of flood communications to them. This raises three questions.

- Are the flood literate and the flood unaware two completely different audiences that need targeting in different ways, or is there some crossover?

- How can the knowledge and experience of the flood literate be harnessed to bring home the reality of flooding to the flood unaware?

- How can these two groups be successfully connected with the local and national level networks of flood risk communication and preparedness?

6　Testing ideas and discussing dilemmas – Stage Two workshop

The Stage Two workshop (Dialogue 2 in Figure 1.1) was held in Birmingham on Saturday 22 November 2014.

The purpose of the workshop was to provide an opportunity for members of the public who attended the first round of workshops – held in Leicester, Newtown, Oxford, Skegness and York – to meet again with specialists in flood risk communication to further discuss issues and dilemmas. Discussions focused on specific communications materials and methods.

6.1　Reflections from Stage One workshops

Participants were asked to reflect back on the Stage One workshops, specifically in relation to any standout memories and anything they did differently as a result of attending.

Standout memories from members of the public tended to focus on learning new things, as well as other aspects such as comparing flood experiences and observations about specific reactions to flooding among the general public or particular demographic groups. Specialists focused on observations, surprises or overall interest in hearing the views of members of the public.

Actions taken by workshop attendees ranged from taking flood preparation measures (for example, noting key numbers, planning, and making physical changes to property) to speaking with friends and family.

'I never realised floods came up through your toilet and that if you're flooded it can be two to three years before you get back into your house because it needs to dry out. It goes out of the news so quickly that you don't hear about the aftermath.' Participant

'As a result of the last meeting I signed up for the flood warning online. It has definitely heightened my awareness.' Participant

Other discussions followed on from the Stage One reflection, including a conversation about issues specific to rural areas (for example, blocked dykes, lack of communication around dredging and payments for set-aside land disincentivising upkeep) and urban areas (for example, general lack of engagement, building on flood plains, increased concreting of gardens and blocked drains).

Jacqui Cotton, Environment Agency, outlined some things that had happened since the Stage One workshops. This includes distribution of the Stage One outputs to relevant teams and organisations, and the feeding of outputs into specific initiatives such as the future flood warning service and flood maps.

6.2　Maps and beyond

In response to feedback from the Stage One workshops, at the Stage 2 workshop (Dialogue 2 in Figure 1.1) the Environment Agency presented some ideas currently in

development including prototypes for new maps. Features of the prototype maps shown to participants included:

- change to colour coding (blue = at risk, changing through yellow to red as risk increases)

- option to add severe weather warnings from the Met Office

- addition of information about what people could do in relation to how quickly the flooding might happen (for example, ranging from 2 hours, to not imminent but general preparation required)

Further options being explored include:

- reports based on postcode (rather than finding your property on a map) with information including flood risk, constituency, local contacts and number of flood warnings that have happened previously

- maps that help people confirm their postcode, which then switches to the flood warning site (current flood warnings and long-term flood risk) followed by actions

- maps that show where flooding has happened in the past, where it might in the future, current flood alert status and so on

It was acknowledged that maps work for some people but not others, and work for some types of information but not others. The Environment Agency confirmed all information would be available via the Floodline number and not limited to the internet.

Key questions raised by the Environment Agency included:

- When and why do you need maps?

- Do you know about the risk of water in or near your home?

- What actions should we focus on and in what order (for example, the ones that make sense, the ones that will have most impact, the ones people are likely to do)?

Comments from participants are summarised below, grouped by theme – several discussions ranged beyond maps.

6.2.1   General comments

Overall comments were positive, indicating the prototypes were an improvement on existing maps. Aside from some concern about how clear they would appear on a computer screen or wider accessibility (see Section 6.2.4), participants indicated the prototypes were easy to follow and clearer than before.

6.2.2   Colours and graphics

Participants said they liked the revised use of colour and graphics in the prototype maps, saying they were much clearer and easy to follow than before.

'The colours were easy to follow. At the maps before we all got a bit confused; that was much clearer. I think you've catered for everyone with that approach.' Participant

6.2.3   Postcode search

The idea of a postcode search function received a positive reaction, with participants liking the level of detail and personalised information. Specific comments included the following.

- It would be good to be able to zoom into your house to see how close it is – this is a familiar function for example, with Google maps. The ability to be address-specific might be helpful in situations, for example, where some properties in a postcode area sit on higher ground than others.

- The option of not using a map at all and just looking at postcode information is important for those not comfortable using maps.

- It would be good to include additional information about the local area such as local contacts and information for house buyers.

- The ability to extend the search area beyond the postcode to find out nearby conditions is good.

- Warnings on a postcode level are a good idea and might encourage people to help neighbours.

6.2.4   Access to information

Access was a central point of discussion, with some concern about the need to access information outside the internet – especially for elderly people – and that although the new maps looked good, people would not know they were there unless they knew where to look.

Alongside the comment from the Environment Agency regarding the availability of information via Floodline, participants discussed a range of other options for informing people without relying on the internet. Suggestions included:

- flood sirens (participants suggested some people still thought sirens existed where they did not)

- members of the community printing maps to show others

- leaflets, with lots of pictures, in surgeries, community information boards, shopping centres and so on

- information with council tax bills

- Floodline explanation on TV

- fridge magnets with key information

- leaflets

- word of mouth / door knocking

There was some debate over whether information always needed to be linked with something positive or not. With respect to the use of statistics and probability, some participants suggested information on when an area last flooded would be more useful.

6.2.5   Phone numbers

There was brief discussion about Floodline, including the fact that the 0345 number is free for the majority of (but not all) callers depending on their call plan.

6.3   Videos

Participants were shown a range of five videos designed to raise awareness and elicit action with respect to flooding. They were then asked to discuss which of the videos would be most likely to prompt action and why/why not, as well as any ideas for improvement. Comments on each of the videos are summarised below, followed by some more general discussion on related issues.

6.3.1   Environment Agency 'Flood house'

There were mixed views on this video, including whether it would be a good advert. Some liked it and felt it was informative, others did not – for example, saying it was a little dull or did not show the extent of devastation. The visual element of the video were generally thought to be good, but participants thought the house could be larger, more realistic or with more detail – for example, where to get the relevant items from and how things like sandbags actually work.

6.3.2   'Breakfast Splash'

Besides a small number of participants who liked this video, most thought it was too jokey and unlikely to lead to action as the issue did not seem serious enough. Some felt it needed to contain more information and be more clearly about flooding.

6.3.3   Personal stories

These videos were popular with participants because they engaged the viewer in human stories, which felt real. Views differed on which video was best or most likely to lead to action – though most preferred Amy's or Thomas' story.

Participants said they liked a combination of emotional connection and practical suggestions (impact and information), but that care needs to be taken to ensure the messages coming across are realistic.

Comments specific to each video are summarised in Table 6.1. Overall suggestions for improvements to the three personal story videos were as follows.

- Combine them, so that the overall video might connect with more people. Or run a few different videos as part of an overall campaign, showing different types of flooding and different types of people.

- Add pictures or video clips of their homes before, during and after. Show real footage of repairs and protection measures.

- Be aware of the expectation some elements of the videos might set – for example that the Environment Agency would knock on everyone's door.

- The purpose of each video needs to be decided – for example, raise awareness or take action?

Table 6.1   Summary of comments about the three personal videos shown to participants

Title	Storyline	Comments
Amy's story	Significant flooding with a fast onset	• Engaging, emotional, heartfelt, realistic, effective • Good advert, gets the message across

		• Not helpful for prevention – doesn't say much about what people can do • Frightening at first • Good to explain the destruction following the flood
Pamela's story	Water seeps in overnight	• Relatively few comments specific to this video – some liked the emotional impact, others felt it was scaremongering
Thomas' story	30 cm of water arriving and leaving rapidly	• Particularly good at providing information about preventative and preparative measures and other information such as grants • Some people found this less emotionally engaging than, for example, Amy's story; others though this was the better video

6.3.4   Communication channels for videos

Participants discussed the range of media channels than might be used to communicate and follow up on the videos. Some participants said they thought TV and radio were most impactful – for examples on a primetime slot with a captive audience. There was also some discussion of costs and whether a prime slot was worth it, when money could be spent elsewhere such as on forecasting.

Other suggestions included Facebook and YouTube videos, links from flood warning pages and maps, and an app.

The need to follow up videos with further information on what to do or who to contact was stressed. Some participants thought taking the videos to schools or activities such as community bingo would be a good idea.

6.3.5   Younger people

Participants discussed young people and how the videos would work for them – for example, younger people tend to be regular Internet users. Participants pointed out that younger people needed to know this information too (for example, when living at university) and could act as a conduit to informing their parents.

The idea of bringing the topic of flooding more explicitly into schools (for example, Environment Agency visits, topics related to the environment) was raised, although the materials would have to be engaging for younger people – for example, a video featuring a young family.

6.4   Printed materials

Participants were shown a range of printed materials including posters, letters and a leaflet. They were asked questions about audience, effectiveness and response in relation to each material. Participants' comments are summarised below.

6.4.1   Three posters showing flood impact in a lounge, toilet and alley

Participants generally liked the concept of the posters, although they suggested the images might need work (for example, toilet poster – solution not clear enough; lounge poster – show personal items). One suggestion was the use of photos local to each area so that people could relate to them better; another was to use more emotive images. The combination of possible impact with mitigating actions was well received, though some participants would like to see further information on where to get the relevant equipment. Suggestions for specific poster locations included the back of buses, newspapers or magazines (though one participant said magazines were too easy to flick through), at doctors' or dentists' surgeries. Comments on specific posters are summarised in Table 6.2.

Table 6.2   Summary of comments on three posters shown to participants

Scene shown on poster	Comments
Flooded lounge	• Colour of the water is a shock. • More impactful than the alley as inside the house. • Include more personal memorabilia. • Really illustrates the devastation of flooding. • Ensure messages are consistent between posters. • A better message might be 'get advice on how to protect yourself by phoning these numbers'.
Flood water from a toilet	• People do not realise flood water comes up the toilet. • Not necessarily clear what the measure in the picture is (the toilet stopper) – could include information about where to buy one, or a better picture. • 'A flood doesn't always knock at the door' is a good message, though could be more obvious (that is, it could come up the toilet). • Everyone has a toilet so this is personal and effective / suitable for everyone. • Some debate over whether the key message should be awareness raising or action.
Flooded alley	• Better to be a local/familiar street, or could have an image of a street full of skips. • Feels like somebody else would do something for you – would not necessarily drive individual responsibility. • Quite a scary image as brings home the devastation. • Not necessarily clear the image relates to flooding. • Could include more personal items and do more to imply the value of prevention. • 'Communities can stop a flood' is a good message, but need to be clear what support is or is not available (for example, funding, prevention, clean up).

6.4.2   Letters

These were well received. There was strong agreement that letters should be personalised and come in an envelope (possibly with council tax letter), with a clear purpose – for example, 'our maps show your home is in a flood risk area'.

Participants tended to like the combination of information and images – for example, pictures are useful for those who do not speak English and the inclusion of a checklist is a really good idea – but cautioned against too much information (that is, keep it relatively short) or too little information (for example, too many pictures compared with text).

6.4.3   Lostwithiel leaflet

This leaflet on flood actions groups produced for the town of Lostwithiel in Cornwall was generally well received – some felt it to be short and simple, others commented it was a lot to read. Participants commented it should be clearer that communities can get support for setting up a flood action group and it also needs to be clear who produced it. The leaflet was felt by some to be good for doctors' surgeries, but perhaps not for the internet due to the volume of information, although the link to social media was well received.

'The challenge is to get people aware, not so much to get the detail across – I'd read it now because I'm aware and interested. This is probably not useful for raising awareness.' Participant

6.5   Health impacts of flooding

Participants were asked to compile a list of possible impacts of flooding on health. They came up with the following:

- drowning

- illness (for example, from contaminated water)
  - diarrhoea
  - asthma (from the damp)
  - pneumonia

- eye infections from spores from the damp

- elderly people on their own and falling

- broken bones

- general slips/trips/falls (for example, in mud and on moved paving stones)

- electrocution

- gas inhalation

- mental health issues
  - stress/anxiety
  - panic attacks
  - depression
  - anger

- insomnia

- heart/angina attacks

- hypothermia

This was followed by a presentation from Public Health England which acknowledged the similarities between the list drawn up by members of the public and its own list (see Table 6.3) and asked participants to think about the issues that were most impactful on them and their friends, family and community. Participants were given three sticky dots each and were asked to place them against the issues in the Public Health England list which they felt to be most impactful or worrying. The result is shown in Table 6.3.

Table 6.3   Ranking by participants of health issues on Public Health England's list

Issue	Number of dots
Hygiene issues related to cleaning your flooded home: sewage and/or debris in your home, cleaning surfaces properly and so on	20
Safety of food and drinking water	18
Mental health issues	16
Loss of essential services: utilities, internet and so on	9
Electrocution	5
Pet safety	5
Having an accident from contact with floodwater: touching a hidden sharp object, becoming stranded in your car, drowning and so on	4
Tummy problems from contact with floodwater*	4
Access to healthcare and medications	2
Presence of rodents, insects or other pests	2
Injuring yourself when moving things to a higher place	1
Carbon monoxide poisoning	1
Mould in your home	0
Other:	3
• Safety of belongings left behind in property • Financial implications – Insurance premiums hiked up? Not being insured? What happens I am not insured? Accommodation if I can't move back into house?	

Notes: * Was moved up to be included with hygiene issues and safety of drinking water.

Three issues stood out as being of particular concern to participants:

- hygiene issues related to cleaning a flooded home

- safety of food and drinking water

- mental health issues

Mould, carbon monoxide poisoning and injuries caused by moving things to higher places received the least attention. The Public Health England representative noted that their evidence suggests changes in access to healthcare, infectious diseases and carbon monoxide poisoning have potentially the greatest impact on health.

Participants commented that perhaps there needed to be more information given about what happens after a flood to highlight risks such as the potential for carbon monoxide poisoning. This was followed by a short discussion about mental health issues and

counselling, including references to psychological first aid and the need to balance preserving mental health with avoiding 'medicalisation' following disasters. Participants suggested flood buddies (people who have already been through flooding) and support groups might be a good idea.

Overall, there was a feeling that prioritisation of these issues would be different depending on the person and circumstances.

6.6   Future flood warning service

Participants discussed what a future flood warning service might look like. There were mixed views over frequency of warnings – for example, some people who had more experience of flooding wanted more warning than others with less flooding experience. The issue of false alarms was raised, with the suggestion that members of the public sign up for the level of frequency they desire.

Participants noted a range of actions they might need reminders for including to:

- switch off electricity
- take possessions upstairs
- check vulnerable neighbours
- have useful items to hand
- check essential documents and phone numbers
- refer to a flood/action plan

Suggestions for local information included:

- water levels compared with historical levels
- closures of roads/schools/other services and shops
- safe areas
- local council actions
- timescales
- useful phone numbers

More detailed comments in response to specific questions are summarised in Table 6.4.

Table 6.4   Summary of comments about a future flood warning service

At what point and how frequently would you need a flood warning?

- 12 hours, 24 hours where possible especially for a serious flood (for example, to start putting things upstairs without panicking, to allow a day to prepare)

- Earlier warnings help people to prepare and source, for example, sandbags.

- 4–6 hours is enough time to do something if there are several people in the house, but may not be enough time for some people.

- Count down over intervals the day before by way of regular updates – for example, an update four hours later saying whether the water has receded or not.

- Risk with too many alerts or too early is that people may start to not believe it or become complacent – depends if it has happened to you before or not.

- Better to err on the side of caution and keep people informed regularly, for example, as alert changes to warning or if the risk has lessened, with an idea of the level of certainty (for example, low, medium, high chance is preferable to probability or even percentages) – but warning too early sacrifices accuracy and increases the chance of false alarms.

- Mixed views on false alarms: some felt these helped to raise awareness, others said it wastes time preparing and causes complacency.

- Some would like as much warning as possible even if there is low certainty; others want a warning only with a fairly high level of certainly.

- Instead of saying you 'will be flooded', say there is a risk and use the red/amber/green system – everyone understands that.

- Amber could be at, say, 24 hours, with red at 6–8 hours.

- If the area has never been flooded before, perhaps give more warning to enable preparation; perhaps less time is needed for those with experience of flooding.

- Overall, there has to be a balance struck (timing and certainty).

What would you like to be reminded to do?

- Take medication (could there be a list of vulnerable people including those on life-dependent medication?).

- Switch off electricity and gas.

- Have candles, batteries and torches ready – also other things to find quickly such as mobile phone and charger, blankets, bottled water, snacks.

- Block toilets and vents.

- If you don't have a plan, being reminded to implement your plan could cause panic – but if you do, making the link to it is good.

- How to deal with hygiene issues.

- Move valuable possessions (including examples, for example, children's photos).

- Reminder about elderly neighbours and ensuring people nearby are ok.

- What to do with animals/pets.

- Check important documents.

- Reminder to look at local flood plan if one exists (for example, reminder of who has a 4x4 vehicle and so on).

- Move if they need to (rather than leaving it up to individuals, tell them if they should move, and the possible consequences of not doing so – but have to be careful for example, not to move elderly people unnecessarily).

- Cover air bricks with cling film, put flood gates up and so on.
- Could people design their own checklist of reminders in the event of a warning?
- Know the emergency numbers (though may be too late by then).

What local information would be useful to you during a flood?

- Location of safe places to go
- Useful telephone numbers (for example, helpline, local council, police station, chemist and so on) and radio station
- Closure of hospitals, schools, pharmacies, post office and other key services
- Location of nearest GP
- Which areas to stay away from, including road closures
- Knowing what the local council is doing generally and to help you
- Information on timescales
- Current state compared with historical flooding (for example, comparative river levels across different dates)
- Where to get sandbags and so on
- Whether your house or postcode will actually be flooded (not just local area)
- What help is available and what you can do to help others, including information about nearby vulnerable people who might need assistance (if they had signed up to enable their location to be shared) – also what about homeless people?
- Available community services
- What happens to mail?

What other information would be useful to you?

- How confident the Environment Agency is about the information (for example, might happen, very likely, definite)
- Phone in on radio to share knowledge
- Advice for people who are not insured

6.7 Message to go out with insurance renewals

Participants discussed the possibility of flood information being included in insurance renewal letters. There was a fair degree of scepticism about this idea due to a lack of trust in insurance companies (for example, using this as an excuse to push premiums up), although some participants were very supportive of the idea.

The need to make a link to actions that can be undertaken to reduce premiums was raised, as was the need for endorsement by a trusted agency (or even the information coming direct from a trusted agency rather than via the insurance company).

Other comments included the need for personal messages, a formal look (rather than too many pictures) and the need to avoid any information looking like a sales pitch.

Participants discussed a range of specific information that they would like to see included should this communication method be developed – this is outlined in Table 6.5.

Table 6.5   Suggested information for flood information with insurance renewals

Status	Suggestion
Must include	• What your flood risk is
	• Actions people can take to minimise risk and achieve discounts on premiums
	• Whether you are covered for flood damage or not
	• Reassurance over premium caps or that this will not affect insurance
	• Where to find out more (including phone numbers)
	• Service agreement (what the insurance company provides)
	• Emergency contacts for insurance
	• Where to get a flood pack
	• Help with pet care
	• Plain English writing with clear small print (for example, exclusions)
	• Encourage a flood action plan and other preparation measures
	• Information on grants
	• Advice on preparing insurance claims
	• Photo (for example, of toilet with flood water coming out of it)
	• Options for different languages
	• Historical local references
	• Addressed personally
	• Explain capping of premiums under Flood Re ends in 25 years and what needs to be done. Capping refers to placing an upper limit to the price that insurers can charge for flood insurance premiums.
	• Ensure people are treated with courtesy when submitting a claim
Nice to include	• Discount vouchers for flood defence products
	• Premium reductions related to specific protection measures
	• PDF version of the letter online
	• Encouragement to shop around for insurance, or a comparison site for insurers in flood areas
	• Link to National Flood Forum
	• Practical information – what to do in the event of a flood and what to do to prepare
	• Advice on preparing insurance claims
	• What the government is already doing regarding flood defences
	• Average cost of being flooded
	• Flood plan checklist/flood plan (A4 sheet) including all the useful phone numbers
	• Pictures on the back
	• Another version to go out with water/council tax bills

Status	Suggestion
Must not include	• No jargon – must be customer friendly • Nothing alarmist or scaremongering – that is, must not give the impression premiums will go up • Do not include irrelevant or inaccurate information • No 'Dear occupier' – must be personal • Not a sales job / not lots of other leaflets
Must have/ nice to have (unclear)	• Shock factors/stories/images (something to make people think it can happen to them) • Clear language • Information about what works in terms of measures • Explain changes to flood insurance (Flood Re) • Explain what the cap means/how it works • Reassurance they are working with the Environment Agency/ endorsement from Environment Agency/ using up to date Environment Agency information and maps • Insurance companies to commit to being flexible/keeping up to date • An equivalent to a 'no claims' bonus if not flooded for years

Further discussion occurred around the inclusion of photos or visual images. Participants tended to think their inclusion was a good idea – some said the back of the letter was a better place for inclusion to avoid it looking like junk mail, but the point was also made that images were useful for non-English speakers so might be better on the front.

A couple of participants suggested opening lines for the letters, including 'I thought it would never happen to me' and 'did you know your house was 2 metres away from flooding in 19…'.

It was pointed out that those people who are not insured would not receive the letter.

'If you already know the letter's coming because you've learned about it from another source [that is, a billboard or TV campaign] then you'll know to look out for it, and you're more likely to read it. Because otherwise it might get lost in all the other bumf that the insurance company sends out with the renewal notice. Billboards in bus stations always catch my attention. It could link to a wider advertising campaign that tells you to look out for the information that will be coming with your insurance renewal.' Participant

6.8 Final words and reflections

At the end of the combined Stage Two workshop, participants spent some time reflecting on the day and the overall process. Several participants noted specific things they had learned or commented on the overall level of learning. Others said they would take specific actions away such as signing up to flood alerts, or emphasised specific suggestions such as including flood risk information with council tax bills or treating flood safety like fire safety.

'I have found the dialogue very educational and will pass on information to my local community.' Participant

The volume of information coming out of the dialogue was noted as a positive, but also a challenge in terms of the Environment Agency and others being able to take everything forward.

Several participants reflected positively on the degree to which the Environment Agency had demonstrated it was listening by taking actions between the workshops and commented on the resulting levels of trust and confidence in the Environment Agency.

Participants were encouraged to leave their email addresses if they wanted to be sent the final report. They were encouraged to stay engaged by keeping in touch with the Environment Agency as they develop new materials, and with Sciencewise if they were interested in taking part in a potential panel to discuss a wider range of issues. All but one of the participants left their email address with a view to staying in touch.

'You have taken all the ideas on board from the previous workshop and produced a less complicated map – it's very clear and concise.' Participant

'Nice to know they're listening!' Participant

7 Turning outputs into action

Members of the Oversight Group and other key stakeholders met in February 2015 to discuss the dialogue outputs and to consider future actions as a result. The key process points and messages are summarised below.

Following a recap of the project inception and process, attendees reviewed the outputs of the dialogue, focusing on six main themes:

- awareness and preparedness

- roles and responsibilities

- flood risk data

- weather and flood warnings

- communities and vulnerable people

- insurance and property level protection

Discussion points in relation to each theme are outlined below in Sections 7.1 to 7.6.

This is followed in Section 7.7 by a list of current actions (things that have already happened or are in the process of happening) and future actions (proposed actions that are likely to happen, and possible actions that require further discussion) discussed or agreed by meeting attendees and by other stakeholders who were consulted outside of the meeting.

7.1 Awareness and preparedness

This initial conversation covered a range of topics, starting with the issue of risk. Attendees recognised the fact that members of the public participating in the dialogue had a clear view that mathematical risk should be avoided in communications, although a sense of, for example, low, medium and high risk would be acceptable. This was in the context of the desire from dialogue participants to receive more localised and historical information so as to better visualise risks and potential impacts.

Attendees noted that flood plans were received positively – albeit with a disconnect between liking the idea and actually making a plan. However, it was suggested that the process of looking at a flood plan might be as or more valuable than producing one.

Attendees discussed existing work on mapping and the need to more generally consider how to improve communications – both to raise awareness and encourage people to act – based on the dialogue outputs.

Local authorities and, more widely, risk management authorities were identified as important audiences for these messages.

7.2 Roles and responsibilities

Attendees spent some time talking about the apparent lack of knowledge and understanding of roles and responsibilities at all stages of the process – before during and after a flood, and including individual responsibility. They discussed the need to provide clear guidance on who does what and through multiple channels.

Specific challenges around local authorities were also discussed, including the multiple roles relating to flooding and a lack of consistency regarding uptake of previous initiatives (for example, the Extended Floodline Project).

7.3   Flood risk data

The Environment Agency's ongoing work to revise flood maps was discussed, with the caveats that:

- members of the public do not tend to browse this kind of information

- there needed to be more work around the trigger points that lead people to look for flood information

Attendees talked about some specific potential options around particular mapping features before moving on to discuss flood apps, and the difficulties in retaining control over data use and quality.

The idea of linking property level information with community engagement to enable ownership and empowerment was received positively, although it was suggested finding resources to support this could be a challenge.

7.4   Weather and flood warnings

Attendees discussed the balancing act between giving full and frank information and scaring people – for example, the dialogue outputs indicate people would like to be given the full picture (even if this causes anxiety) as long as this is linked to action and a sense of accuracy, whereas current literature suggests that anxiety and alarm are likely to lead to disempowerment. This led to further discussion about false alarms and the similarities or differences between fire and flooding. Some attendees stressed the importance of localised approaches, for example, referencing the increasing presence of localised systems created by communities or groups and the need to engage with community groups to reach a wider range of people.

7.5   Communities and vulnerable people

There was some discussion of internet use and accessibility issues (for example, elderly people and those in lower socioeconomic brackets). Attendees talked about the importance of making it easy for friends, family, neighbours and local community hubs (for example, hairdressers) to pass on information to those who may not have internet access or aptitude.

The issue of landlord versus tenant responsibilities was also discussed.

7.6   Insurance and property level protection

Attendees discussed existing activities in relation to Flood Re, alongside the issue of apparent lack of trust in insurance companies reflected in the dialogue outputs. This was followed by discussion of the need to more clearly demonstrate options for properly level protection.

7.7   Current and future actions in response to the dialogue outputs

Current and proposed or possible future actions in response to or taking account of the dialogue outputs are listed below in Tables 7.1 and 7.2 respectively.

Overall, there was a sense from stakeholders that they had learned a lot as a result of the dialogue and that they appreciated the value the dialogue outputs would bring to their future work.

Table 7.1   Current actions in response to dialogue outputs

No.	What?	Who?
I	Consider future use for additional video footage, as well as Natural Resources Wales footage (including possible funding from Sciencewise).	Environment Agency, Sciencewise
	Natural Resources Wales footage: YouTube Flood Awareness – Joanne's story [1] YouTube Flood awareness – Kathleen's story [2]	Natural Resources Wales
II	Review GOV.UK website for public pathways to flood risk/action information, testing the 'user journeys'.	Environment Agency, Defra and others
	Website improvement works – implementation of Coastal Review Delivery Plan Recommendations: Wales Coastal Review Phase 2 Action Plan Recommendations (PDF, 160 KB) [3]	Natural Resources Wales
III	Take forward dialogue outputs as part of the current work to revise flood maps.	Environment Agency
	Revise flood maps available to public by June 2015 using outputs where feasible (standalone from Environment Agency).	Natural Resources Wales
IV	Carry out further work to better link flood maps and warnings (flood and weather).	Natural Resources Wales
V	Link this work to coastal review recommendations, currently underway (including review of flooding materials, mental health impacts leaflet, videos as media for providing information, overall learning and implications for work in general – see relevant points in future actions below).	Natural Resources Wales, Public Heath Wales, plus Welsh Government (with respect to implications for work in general)
VI	Consider outputs of the dialogue in relation to co-production method to address local flood risk management – Newtown in Wales.	Natural Resources Wales and Welsh Local Government Association
VII	Discussions through Wales Flood Group.	Welsh Government, Natural Resources Wales, Local Resilience Forums

No.	What?	Who?
VIII	Collate a list of existing actions or initiatives.	Environment Agency
IX	Develop these actions into an implementation/action plan.	Environment Agency
X	Find ways of improving people's experience of PLP.	Defra
XI	AXA and BRE are working together to develop a prototype database of properties where PLP has been installed that insurers could use (funded by InnovateUK). If this works, it should help address the issues around the difference that PLP can make.	Defra

Notes: These include relevant processes that the dialogue outputs are already feeding into, and actions that have happened or are already happening.
[1] https://www.youtube.com/watch?v=KXbpVPyH52E
[2] https://www.youtube.com/watch?v=f3jvnks1TNU
[3] http://gov.wales/docs/desh/publications/140722-wales-coastal-flooding-review-phase2-recommendations-table-en.pdf (

Table 7.2   Future actions in response to dialogue outputs

	What?	Who?	When?	Action type
1	Improve signposting and references to property level protection within GOV.UK.	Environment Agency/Defra	12 months	GOV.UK
2	Consider how to best influence landlords to adopt good practice over provision of flood risk information.	Defra, Department for Communities and Local Government (DCLG)	6–12 months	During planned discussions
3	Share findings with the insurance industry.	Defra	6–12 months	During planned discussions
4	Consider roles and responsibilities of different risk management authorities and how these are communicated, in the context of the next revision of the FCERM National Strategy.	Defra, Environment Agency	6–12 months	For discussion with Environment Agency Strategy Delivery team
5	Review National Strategy to clarify roles and responsibilities, including at local level.	Welsh Government	12 months	For further discussion
6	Create opportunities for filming the impact of flood water coming into a house. Opportunities may exist at the Fire Service	Environment Agency, Defra	12 months	For further discussion

	What?	Who?	When?	Action type
	College, BRE in Watford and HR Wallingford.			
7	Give further consideration to communicating the extent of personal responsibility and what people can do for themselves – review current communications and connect to National Flood Forum as an independent body (also consider a video format to set out roles).	British Red Cross Defra, National Flood Forum and Environment Agency	18 months	For further discussion
8	Consider the implications of enabling people to access risk levels for their own properties, alongside discussions about building wider community resilience.	British Red Cross Promote to Local Resilience Forums	18–24 months	For further discussion
9	Start to create videos as media for providing information.	Public Health England	Ongoing	For further discussions
10	Take away overall learning from the project.	Public Health England	Ongoing	For further discussions
11	Consider the implications of dialogue outputs for work in general.	DCLG	Ongoing	For further discussions
12	Consider how local authorities can use the information.	DCLG	Ongoing	For further discussions
13	Discuss possible actions to contribute to a cultural shift within flood risk communication providers.	All stakeholder organisations – Environment Agency to lead	Environment Agency to produce a core narrative (6–12 months)	For individual implementation
14	Discuss how best to communicate key messages to different audiences in local authorities so as to achieve more consistency and encourage good practice.	All stakeholder organisations. Environment Agency to lead	Environment Agency to produce a core narrative)6–12 months)	For individual implementation
15	Consider outputs during future discussions with Flood Re.	Defra	12 months	For ongoing discussions
16	Undertake further work to	Environment	12 months	Joint Environment

	What?	Who?	When?	Action type
	better link flood maps and warnings (flood and weather).	Agency		Agency/Met Office steering group
17	Discuss the use of media and telling stories in context, including communication of forecasting to public, in an effort to achieve better integration.	Met Office, Environment Agency Natural Resources Wales, Scottish Environmental Protection Agency (SEPA), Department of Agriculture and Rural Development Northern Ireland	12 months	Joint Environment Agency/Met Office steering group
18	Discuss how to achieve more consistency of all outward facing messages – include mass media (BBC and so on). NB Joint communications teleconferences (Natural Resources Wales, SEPA, Department of Agriculture and Rural Development Northern Ireland, Met Office) already underway.	All	18–24 months	Joint Environment Agency/Met Office steering group
19	Review and gather more evidence on the issue of warnings causing anxiety and alarm in an effort to further examine some apparent inconsistencies between dialogue findings and current literature.	Environment Agency	18–24 months	R&D
20	Disseminate learning across all local authorities about the key messages for awareness being on impacts and actions.	Project to produce briefing, and work with Oversight Group to disseminate	6–12 months	Specific
21	Use future research to explore the scope for growing visual local data through local authorities or even crowd-sourced contributions.	Environment Agency	R&D project in 2015 to 2016 programme	Specific
22	Future research to determine the	Environment Agency, Defra	Proposal for R&D	Specific

Public dialogues on flood risk communication

	What?	Who?	When?	Action type
	effectiveness of changes to flood warnings through control trials.		programme	
23	Create information on GOV.UK on the roles of each risk management authority.	Environment Agency	6–12 months	Specific
24	Produce core narrative around flood risk communication which can be shared across flood risk authorities.	Environment Agency	6–12 months	Specific
25	Consider ways of capacity building in flood risk communication through established programmes.	Environment Agency	6–12 months	Specific
26	Consider the policy implications of moving to finer resolution flood risk information.	Defra	12–18 months	Specific
27	Test the flooding-related content on GOV.UK against a set of user journeys, the desired policy. outcomes and how effective GOV.UK is in signposting towards this information.	Environment Agency, Defra	12–18 months	Specific
28	Build a cost/benefit evidence base so as to secure resources for raising awareness.	Environment Agency	Underway	Specific
29	Produce a simple document (possibly a joint publication) summarising the roles and responsibilities of relevant organisations.	Environment Agency	6–12 months	Specific
30	Add a prompt to 'print off a flood plan for your neighbour or relative' to the Environment Agency web pages.	Environment Agency	6–12 months	Specific
31	Talk to the private rental sector, social landlords and universities regarding tenant and landlord responsibilities.	Defra, Environment Agency and National Flood Forum	6–12 months	Specific. NFF undertaking some work in Rochdale
32	Consider using a property	Defra,	12–24 months	Specific. NFF

	What?	Who?	When?	Action type
	in an area to demonstrate property level protection – this could also include video.	Environment Agency and National Flood Forum		have some examples used in Southampton
33	Review flooding materials and re-assess the content.	Public Health England	12 months	Specific
34	Produce a new leaflet on the potential of flooding from sewage that provides reassurance to the public.	Public Health England Natural Resources Wales, Public Health Wales, Water Companies (DCWW, Severn Trent, Dee Valley)	12 months	Specific
35	Create a new mental health impacts leaflet.	Public Health England	12 months	Specific
36	Discuss the results with emergency responder user groups.	DCLG/Cabinet Office	6–12 months	Specific
37	Work with Defra to implement post-dialogue action plans.	DCLG	As per specific action	Specific
38	Create a new flood risk map for Wales, incorporating all sources of flooding in one place.	Natural Resources Wales	12 months	Specific
39	Circulate further information on funding opportunities.	Sciencewise	With report	Specific
40	Arrange a nine-month review of the implementation/action plan.	Environment Agency, Welsh Government, Natural Resources Wales	September	Specific
41	Develop a list of contact points/ opportunities to connect members of the public with flood risk communications in an effort to improve awareness, preparation and response, for example, Flood Re, triggers/alerts, emergency responders, fire services and planning.	Defra, National Flood Forum and Environment Agency	12 months	Specific action for Environment Agency FCRM communications teams National Flood Forum is re-thinking its website structure in accordance with this recommendation

Notes: These include proposed actions that are likely to happen and possible actions that require further discussion

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