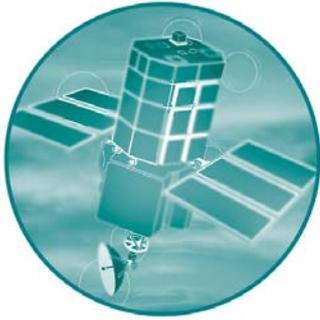


**Defra/Environment Agency
Flood and coastal erosion risk management
R&D Programme**



**Flood Warning for Vulnerable Groups:
A qualitative study**

R&D Technical Report W5C-018/3



**ENVIRONMENT
AGENCY**

Flood Warning for Vulnerable Groups: A qualitative study

R&D Technical Report W5C-018/3

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This report provides us with information about those groups most vulnerable to flooding. It considers their vulnerability in terms of their awareness of being at risk and their ability to respond to and recover from a flood event. The information helps us to target messages to these vulnerable groups to help them prepare for a flood event. It provides useful supporting information for planning communications with and flood warning services for the most vulnerable groups.

Keywords

flooding; flood warning; vulnerable; older people; parents; children; tenants; mapping; socio-economic; flood recovery

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CONTENTS

1.	Introduction	2
2.	Aims and Objectives	3
3.	Methodology	3
3.1	Site Selection	3
3.2	Key Informant Interviews	4
3.3	Selection of Vulnerable Group Categories	5
3.4	Focus Group Discussions	6
3.5	Individual Interviews	7
4.	Area Findings: Key Informant Interviews	8
4.1	Vulnerability in Stockbridge, West Yorkshire	8
4.2	Vulnerability in Ruthin, Denbighshire	12
4.3	Vulnerability in Woking, Surrey	14
4.4	Vulnerability in Iford Bridge Park, Bournemouth, Dorset	16
4.5	Vulnerability in Bewdley, Worcestershire	20
4.6	Vulnerability in Skinningrove, Cleveland	22
5.	Summary of Findings from Key Informant Interviews	25
5.1	Flood Warning and Flood Event	25
5.2	Vulnerability to Flood Warning	26
5.3	Vulnerability to Flood Event	26
6.	Focus Group Discussions and Interviews with Members of Vulnerable Groups	29
7.0	Summary of Findings from Focus Group and Individual Interviews	30
7.1	Pre-Event Issues	30
7.2	The Autumn 2000 Flood Events	34
7.3	Post-Event Issues	40
7.4	Flood Warning Issues	45
7.5	Local Issues	49
7.6	Participants' Perceptions regarding Causes of Flooding	52
8.	Conclusions	54
8.1	Vulnerability identified by Key Informants	54
8.2	Vulnerability identified by Focus Group Discussions and Individual Interviews	55
9.	Suggested Recommendations	60
9.1	General Recommendations	60
9.2	Before Flooding Occurs	61
9.3	Immediately Prior to Anticipated Flood Events	63
9.4	After a Flood Event	63
	References	65

Appendices:	Phase One Interview Topic Guide
	Phase Two Focus Group Topic Guide
	Research Site Information

1. INTRODUCTION

This document constitutes one element of a four-part Final Report of research commissioned by the Environment Agency that examined vulnerability with regard to flood warning. The concept of vulnerability was addressed in three distinct ways; in terms of likelihood of being flooded; in terms of certain groups being less aware than others to be aware of flood warning; and in terms of certain groups being less able than others to respond to flood warning and to cope with flood event. This report covers the qualitative component of the study; it addresses vulnerability with regard to flood warning awareness and response, and vulnerability during flood event.

The qualitative research was conducted in two parts, the first of which served to inform the second: Phase One examined vulnerability to flood warning and flood event with reference to groups suggested by key informants in six areas within England and Wales where severe flooding had occurred in Autumn 2000; Phase Two examined flood warning response and event impact amongst four of those categories identified by key informants as particularly vulnerable. Phase Two also addressed public perceptions of Environment Agency flood advice and warning artefacts and examined perceptions with regard to the underlying causes of flooding in the United Kingdom and beyond.

Research aims and objectives appear in Section 2. Section 3 briefly reviews the methodologies adopted in both phases of the study: (Phase One) site selection and key informant interviews; and (Phase Two) group category selection, focus group and in-depth interviews. Section 4 details the principal research findings for each of the six areas preceded by a brief profile for each site. A synthesis of key findings from this first phase is given in Section 5.

A brief introduction to Phase Two of the study appears in Section 6; for clarity, the aims and objectives of this phase of the research are reiterated here. Section 7 summarises the main research findings from focus groups and interviews conducted during the second stage (a detailed account of the findings for Phase Two appears in a Project Report submitted to the Agency on 14/5/2004). Finally, Section 8 draws conclusions from the key research findings before making recommendations for enhancing flood warning awareness and response and reducing the adverse effects of flood impact.

Site information and copies of the Interview and Focus Group Discussion Topic Guides are presented as Appendices to this Report.

2. AIMS AND OBJECTIVES

This research aims to provide a detailed understanding of whether some groups within the population are particularly vulnerable to floods and, if so, to explain why this is the case. It will also develop recommendations for improving the content and dissemination of flood warnings for these groups.

The concept of vulnerability is addressed in three distinct ways: in terms of certain groups being more likely than others to be flooded; in terms of certain groups being less likely than others to be aware of flood warnings; and in terms of certain groups being less able than others to respond to flood warnings. Vulnerability in terms of flood event and its aftermath were also examined.

The purpose of Phase One of the qualitative research was both to inform the second phase and to satisfy three principal objectives:

- to identify whether or not there were particular vulnerable groups within certain sites severely affected by the flood events of Autumn 2000
- to examine whether certain groups were less likely than others to heed or respond to flood warning
- to examine whether certain groups were more vulnerable to the effects of flood event

Phase Two addressed three research issues from the perspective of flood victims themselves, drawn from the chosen areas:

- understanding levels of flood-risk awareness within certain vulnerable categories
- understanding ability to respond to flood warning within these groups
- understanding particular difficulties experienced with regard to flood event and its aftermath within these groups

3. METHODOLOGY

The qualitative research study was planned in two stages:

- 1 site selection and in-depth interviews with key informants
- 2 focus groups and in-depth interviews with members of vulnerable categories identified in the first stage

3.1 Site Selection

In order to satisfy the relevant aims and objectives detailed above, it was first necessary to determine suitable areas for data collection. In order to provide access to sufficient numbers of interviewees, it was agreed that sites should fall into the category of a 'large' flood (defined by Environment Agency as containing in excess of 100 properties flooded during the relevant period). Sites were to contain target populations and to have as wide a regional and geographic spread as possible, include areas of social deprivation and social exclusion, allow for a range of locations and property type, and represent the diversity of flood event types according to the Environment Agency's categorisation (i.e. tidal; main river; non-main river). In addition, they should provide examples of flood warning successes and failures.

After discussion with the Environment Agency and, in particular, officers having responsibility for the sites in question, the list of sites chosen for primary data collection was as follows:

North East Region (Northumbria area).
Skinningrove, Cleveland.
(Coastal Site; Rural Village; Non-main River)

North East Region (Ridings area).
Stockbridge, Nr Keighley, West Yorkshire.
(Suburban; Main River).

Wales.
Ruthin, Denbighshire.
(Rural Small Market Town; Main and Non-main River)

Midlands Region.
Bewdley, Worcestershire.
(Semi-Rural Large Market Town; Main River).

Thames Region.
Woking, Surrey.
(Urban; Main River)

South West Region.
Iford Bridge Park, Christchurch, Dorset.
(Coastal Site; Mobile Home Park; Suburban; Tidal and Fluvial; Main River)

3.2 Key Informant Interviews

The interviews contained within the preliminary phase of the study sought to shed light on the following topics:

- Dissemination of flood warnings and problems or limitations arising
- Whether or not certain groups were less likely than others to heed flood warnings
- Factors that constrained or informed warning response
- The consequences for individuals of not receiving/heeding warnings
- Whether or not particular socio-economic characteristics contributed to the risk of flooding (both the likelihood of being flooded and the experience of flood event)
- Whether or not particular types of accommodation were more adversely affected by flooding than others (both the likelihood of suffering flood and the residents' experience of flooding)

In order to address these questions, data collection focused upon people likely to have detailed knowledge of the social aspects of flood events, with a particular emphasis on the flooding of Autumn 2000. The purpose of key informant interviews was threefold: to seek answers to the points outlined above by determining what, if any, groups of people are particularly vulnerable in terms of flood warning and flood event; to gain insights into those aspects of flood-related vulnerability that might not have come to light from a reading of the published material; and to inform decisions regarding the second phase of the project, including appropriate recruitment strategies and suitable topics for focus group discussion.

3.2.1 Identifying Key Informants

In all cases, the first point of contact was a local Environment Agency officer with responsibility for flood warning. Where appropriate, more than one Environment Agency officer was contacted. Drawing on information obtained from Agency staff and the published literature, further interviews were conducted in each area with members from the following organisations and institutions as appropriate:

- Emergency Services
- Emergency Planning Officers
- Social Services
- Other Local Government personnel
- Emergency Reception Centre Managers
- Voluntary Organisations
- Flood Wardens
- Parish Council representatives
- Community Action Groups
- Representatives of minority ethnic groups

Decisions regarding appropriate interviewees were in part informed by the specifics of flooding in each of the chosen sites. In order to spread the net as widely as possible, informants were found by adopting a ‘snowballing’ approach (see Arber; 2001). Initial contact with Environment Agency officers often yielded suitable contacts within Local Authorities, emergency services and local flood action groups; these in their turn made other proposals for key informants. In some cases, the number of contacts suggested was such that time and budgetary constraints made it necessary to restrict the amount of interviews.

3.2.2 Key Informant Interview Methodology

In-depth interviews were conducted with 78 key informants; the majority lasted between one and two hours, conducted either in the individual’s home, workplace or other suitably neutral setting. Where time or distance was prohibitive, interviews were conducted by telephone. Having assured informants of confidentiality, interviews were tape-recorded and transcribed wherever possible.

As key informants would, by definition, be likely to introduce new and relevant topics, sessions were viewed as an information-gathering exercise rather than as a series of structured interviews; thus the interview guide listed topics areas rather than pre-determined questions¹. This approach enabled interviewees to address issues in their own terms, allowing particular areas of interest or importance to be identified, and variations between sites to be highlighted. There were three principal areas of discussion: the role and experience of the informant and the informant’s organisation in relation to flood events; their understanding of vulnerability in relation to flood and flood warning; knowledge of other suitable contacts, relevant research and how best to make contact with people in vulnerable categories.

3.3 Selection of Vulnerable Group Categories

Following the completion of Phase One, a list of vulnerable categories was compiled from which to select suitable groups for further research. It was intended that category choice should reflect the interaction of variables likely to affect vulnerability to flooding, and

¹ A copy of the Interview Guide is appended (see Appendix One).

acknowledged that there would inevitably be some overlap between several of these categories; people on low income, for example, are more likely to be socially disadvantaged, live in rented accommodation, and be uninsured. It was therefore decided that one group of people be included for whom none of the characteristics of vulnerability listed above would apply; with this suggestion in mind, Bewdley was chosen as the area likely to furnish relatively affluent participants. After consultation with the Agency, four categories of vulnerability were chosen for investigation:

- older people (frail older people where possible, and to include one group of mobile home residents)
- parents of young children (including one group of single parents)
- 'new' residents (i.e. less than two years in their current home)
- people with disability

3.4 Focus Group Discussions

3.4.1 Recruitment of Participants

Where possible, local knowledge was used to assist in the recruiting of participants; this was first done by approaching key informants from the earlier phase. Though the intention was to include participants from all six research sites, it proved impossible to recruit people in Stockbridge; this was explained by recruiters (all of whom had acted as key informants) as being due to a general lack of public interest, a reluctance to dwell upon a past traumatic event and a feeling that little would come of any further research involvement².

In all sites apart from Bewdley, the focus was to recruit members of lower socio-economic groups since both published literature and secondary analyses had identified this as a potentially vulnerable category. All participants were to have experienced some degree of flooding within the past two years.

In order to overcome practical difficulties, it was planned that a series of individual interviews be conducted with disabled people, with the addition of one focus group to be held in a Woking centre. Because there were insufficient local people meeting the necessary criteria, the plan for a group discussion was discarded and further individual interviews were added. Recruitment of interviewees was undertaken in conjunction with key informants, other research contacts and the Agency.

3.4.2 Focus Group Discussions

In order to access the views of as many people as possible, focus groups were chosen as the primary investigative tool. As the topic area was a particularly sensitive one with many diverse issues to be discussed, it was decided to conduct two focus discussion sessions with each group, a research design particularly suited to the discussion of a wide or sensitive range of issues (see Macnaghten et al, 1995; Walker et al, 1998, Burningham and Thrush 2001). In addition it provides an effective means of building trust between the facilitator and group members, thus eliciting more detailed data than might otherwise be possible.

It was intended that focus group discussions be conducted with a total of nine groups, three drawn from each of the chosen categories of vulnerability, and covering all research sites. In

² It appeared that this area had already been the subject of some earlier research.

the event, the number of ‘new’ residents available allowed for only two groups to be recruited; a supplementary group of parents was therefore included. As mentioned above, only five of the six research areas were included in this second stage. The final list was as follows:

- three groups of older people (Iford Bridge Park; Skinningrove; Bewdley)
- three groups of parents of young children (Woking; Skinningrove; Ruthin)
- one group of single parents of young children (Ruthin)
- two groups of ‘new’ residents (Bewdley: Woking)

3.4.3 Focus Group Discussion Methodology

The majority of focus groups contained between six and ten participants; in some cases, however, last-minute illness or recruitment difficulties resulted in a shortfall. Each participant was offered a small financial incentive for giving up their time.

Each group met on two occasions yielding a total of 18 focus group discussions. Meetings were conducted in local, ‘neutral’ venues (e.g. community centres; village halls). The first meeting focused upon participants’ recent experiences of flood, their awareness and understanding of warnings, how they responded to warnings including any difficulties encountered, and how they coped in the aftermath of flooding. The second elicited views on how warning strategies might be improved and included an informal evaluation of Agency material; it also addressed how best to minimise the adverse affects of flood event, and examined perceptions with regard to the causes of flooding in the United Kingdom and beyond.

The focus group discussions were led by an experienced facilitator and guided by participants’ priorities using a free-flowing discussion guide (see Appendix 2). The duration of each group discussion was between one and a half and two hours; all discussions were audio-taped and transcribed prior to analysis using MAXqda.

3.5 In-depth Interviews

Owing to practical and recruitment difficulties, it was decided to conduct in-depth interviews rather than focus groups with disabled people. Eight people were interviewed, drawn from four of the existing research sites³ with an additional two people recruited from Lewes in East Sussex. Each interviewee was seen on one occasion only. The focus group topic guide was used, omitting the informal evaluative exercise; the duration of interviews was between one and a half and two hours. Data were tape-recorded, transcribed and analysed using MAXqda.

³ Iford Park; Bewdley; Woking; and Skinningrove

4. AREA FINDINGS: Key Informant Interviews

This section of the report summarises findings with regard to vulnerability drawn from key informant interview data collected in the six research sites. Site profiles are provided for each area. These include: a brief account of Autumn 2000 flood event and flood warning⁴; population figures from the Neighbourhood Statistics website (referring to resident populations in mid-1998 and based on Electoral Wards); an indication of social deprivation in the form of scores and rankings from the Jarman Index of Deprivation⁵ (computed from Census Ward statistics). The Jarman index was chosen as the preferred tool as it gives a composite score based on eight variables, most of which are shown in the literature as likely to increase vulnerability to flood event: unemployment; overcrowding; lone pensioner households; lone parents; born in New Commonwealth; children under five; low social class; and one year migrants. Scores appear as negative or positive numbers, with a mean score of 0; the higher the score, the greater the level of deprivation. Rankings are numbered from 1 to 9363; high numbers indicate high levels of deprivation. Site information appears in Appendix Three.

4.1. Vulnerability in Stockbridge.

4.1.1 Site Profile

Stockbridge is a suburb of Keighley to the west of Leeds and comes under Bradford City Council. Keighley is an old industrial town and much of the property in Stockbridge was built to house foundry workers. Flooding occurred within the Keighley North Ward, the resident population of which in mid 1998 is given as 15,800 people (23 per cent aged under 16; 57 per cent between 16 and 59; 19 per cent aged 60 and over). The ward is a very deprived one (Keighley North is ranked 8379 in the Jarman Index, with a score of 23) with a high proportion of the population belonging to a minority ethnic group; 78.6 per cent are white; 16.4 per cent Pakistani; and 3.9 per cent Bangladeshi. In the suburb of Stockbridge, the population is roughly 50% Asian and 50% white. There is also a fairly high proportion of older people in the area, most of them owner-occupiers.

Flood warnings were disseminated by the automated voice messaging service (AVM) some two hours before the River Aire breached the wall of a public house and floodwaters entered the area, remaining for up to one week. These warnings were suggested by one key informant as being issued too late for sufficient preventative action to be taken. No Flood Warden scheme was in place at the time. In total, approximately one hundred residential properties in Stockbridge were affected by the Autumn 2000 flood event. Many evacuations were necessary with emergency services using boats to transport flood victims. A rest centre was opened in the town.

⁴ From Environment Agency regional and central reports (Lessons Learned: Autumn 2000 Floods)

⁵ The Jarman Underprivileged Area (UPA) Index: Jarman (1984) Underprivileged areas: validation and distribution of scores. BMJ 289: 1587-1592



View of River Aire at Stockbridge

4.1.2 Vulnerability regarding Reception of Warnings and Ability to Respond

Few informants here had much to offer regarding flood warning vulnerability, principally because their dealings were primarily with the period following the flood warnings. Certain points were raised, however, and are discussed here.

Some sections of the older population appeared to be particularly vulnerable in terms of their response to flood warning; one older disabled woman was reportedly found in her waterlogged home several days after the flood having been unable to raise the alarm. Deaf or confused older people were reportedly bewildered and frightened by people banging on their front doors to alert them to the imminent flooding.

Families with young children were also observed to be particularly vulnerable, especially where there was a lone parent or a large number of children. Not only were children distressed, there was the added problem of adults being unable to take necessary action with youngsters in tow.

Effective reaction to flood warning was said to be far less easy for people who live alone, partly because it was difficult or impossible to save furniture or other items and partly because anxiety levels were reported as being greater; this category included single parents with dependent children. Other informants spoke of a lack of knowledge or education preventing people from taking an active part in minimising flood damage or reacting appropriately. Disability, whether physical or mental, was said to impede effective response; deaf people were said to be at particular risk of not receiving telephone warnings, especially those issued during the night. One informant said:

“it doesn’t matter how many times you push stuff through the door, it’s the ‘phone call that alerts you to the flood”.

Disseminating warnings amongst minority ethnic groups is not necessarily a simple matter. Although the Environment Agency produces flood warning literature in several languages, including those spoken in the Stockbridge area, literacy levels in its Asian community were reportedly low, especially amongst older people. A local Environment Agency officer added that foreign language information was distributed only on request; non-English speakers may either be ignorant of its existence or be uncertain how to access it. Similarly, radio and television broadcasts were said to be unlikely to reach all sections of the community. There was only one Asian radio station in the catchment area; it was said by one informant to have been unwilling to broadcast the flood warning. Radio listening was apparently not part of the daily life of Asian women.

4.1.3 Vulnerability to Flood Event

The two extremes of the age spectrum were said by many of our informants to be especially vulnerable in terms of the Stockbridge flood event. Some children were reportedly disturbed for a considerable time after the flood, particularly during heavy rainfall, and were anxious about returning home in case flooding recurred. Many informants said older people were also very vulnerable, particularly in cases of frailty or where there was no friend or family member living nearby; many did not want to leave their homes and were fearful of losing their belongings. The heterogeneity of both age groups was highlighted; some children and older people did not appear to suffer as severely as others.

Findings show that people with fewer resources tended to be especially vulnerable to the adverse effects of the Stockbridge floods: those without nearby family or friends; people with reduced physical or mental resources (pre-existing instabilities, were to have been exacerbated by the flood events); the unemployed or those on low income, making it more likely possessions were uninsured; or those with sole responsibility for young children. There was said to be a high proportion of single mothers in the area. Several informants mentioned an *“us and them”* attitude, prevalent for a long while after the flood event; victims covered by insurance were in many cases angered at what they saw as the irresponsibility of the uninsured. One informant stated:

“the sad fact is that it is the already vulnerable members of society who are the most vulnerable in any flood experience”.

In addition, the most vulnerable were described by one informant as being the *“last in the queue”* in returning to their homes since contractors tended to work more quickly for the more assertive flood victims. In many cases older people were the last to return. One unexpected issue came to light during discussion with an informant who dealt with charitable distribution after the flooding; it appeared that a credit company persuaded several householders to apply for credit in order to replace goods, many of whom then incurred considerable debts.

Vulnerability amongst Stockbridge’s minority ethnic community was highlighted; this was said to be a very underprivileged group with a high proportion of families on income support or without employment. Rest Centre users appeared to be isolated by language and cultural differences, even though help was available. One informant explained that it is not the habit of this group either to have insurance cover or to ask for outside help, partly for religious

reasons, partly through a lack of knowledge of the system, and partly because there is a cultural preference for self-reliance especially amongst the older generation.

Several informants said that all flood victims were vulnerable in some way; psychological distress, exacerbated by the length of time taken to revert to normality, was highlighted as a major hardship. The disaster caused loss of dignity, pride and privacy (all of particular importance amongst the Asian community). Many informants extended their definition of flood-related vulnerability to include themselves and their co-workers; Local Authority and voluntary staff were upset by the anger and misery that confronted them. The speed with which the flooding occurred in Stockbridge only added to the degree of trauma experienced:

“there was a lot of emotion...people had been wrenched from their homes. They had to leave everything behind. All the things they’d had around them for a lifetime were destroyed and some people had lived in those houses all of their lives”.



View of Stockbridge

4.1.4 Identifying Vulnerable People in Stockbridge

Informants were asked whether or not they knew of any databases or equivalent that might contain lists of vulnerable people; apart from information already held by various Council departments (e.g. Housing; Social Services) there was no record of vulnerability in terms of flood or similar disaster. Though the problems of keeping such a database up to date were appreciated, interviewees considered a list of vulnerability was of vital importance in an emergency situation. Information on establishments containing vulnerable groups, old people’s homes and so forth, was readily to hand and Local Authority emergency plans took account of such institutions in their crisis procedures.

4.2. Vulnerability in Ruthin, Denbighshire

4.2.1 Site Profile

Ruthin is an attractive, small market town set on and around a hill in the beautiful North Wales rural border country. It is largely dependent upon tourism and agriculture and has a population of approximately 4,500. There is almost no minority ethnic presence. Ruthin is given an index of 6.74 in the Index of Deprivation, and ranked 779 out of a total of 865. It lies in the Upper Clwyd catchment.

There were no flood warning systems in place at the time of the Autumn 2000 floods, There was, however, a flood watch for this section of the Clwyd and information was passed via the media to the County Council and received by some of the local residents. Flooding occurred three times during the period, resulting in damage to some two hundred and fifty properties. Causes were given as main and non-river; a principal cause of flooding was a culverted length of ordinary watercourse running beneath the lower part of the town. On three occasions in Autumn 2000, the culvert roof (i.e. road surface or manhole covers) burst open. Fluvial flooding aggravated the situation during one of these events, causing additional evacuations. Flood waters reached first floor level in some areas. A rest centre was available for evacuees.



Culverted watercourse in Ruthin

4.2.2 Vulnerability regarding Reception of Warnings and Ability to Respond

Apart from people who were ill or those with hearing difficulties, no particular vulnerabilities were mentioned with regard to receipt of flood warning. One informant said:

"in the early hours of the morning, everybody is vulnerable".

When considering ability to respond appropriately to warnings, findings highlighted various groups as being especially vulnerable: the old and infirm; those with emotional vulnerabilities; and people with hearing impairment. Here again, not all older people were classed as vulnerable; many displayed a 'wartime mentality' that carried them through the

worst of the trauma. Vulnerability amongst older people seemed to be dependent upon state of health, personality characteristics and social support network.

One unexpected category of vulnerability was made up of people reluctant to leave their homes; affluent householders with “*posh properties*” reportedly refused to evacuate in order to protect their property. This was said to cause considerable concern amongst police and housing officers on the scene.



View of River Clwyd, Ruthin.

4.2.3 Vulnerability to Flood Event

Distress and vulnerability amongst Ruthin residents were exacerbated by four flood events in one year: adverse effects were said to be common and long-lasting. Subsequent rainfall was said to engender feelings of panic amongst residents; older people were afraid to leave home in case flooding recurred; many young children were anxious and suffered from nightmares. The loss of seemingly small items, soft toys or suitcases of memorabilia for example, was a cause of particular distress.

Vulnerabilities mentioned by Ruthin informants included: low-income groups, especially those without insurance cover; single householders of any age, particularly those described as “worriers” or those with few social contacts; young children; and disabled, frail or sick people. Older people, particularly those living alone, were classed by most informants as very vulnerable.

Many Council informants included themselves as vulnerable, speaking of the difficulties and dangers of working in flood conditions, of their sympathy for the flood victims, and of householders’ anger and aggression directed against them. The responsibility of knowing that the response they delivered would impact upon some five hundred people was a heavy one:

“Highways are not generally an emotive issue, but all that has changed since Autumn 2000”.

The repeated nature of Ruthin flooding meant that many relief workers dreaded having to face the public during these emergency situations, even though they empathised with residents' feelings. This appeared to affect the social life of many of our informants; some spoke of feeling "*as if you've got the plague*".

4.2.4 Identifying Vulnerable People in Ruthin

Beyond the information held by Social Services, there did not appear to be any database of flood-related vulnerability. Several informants spoke of the need to build such a database from past flood experiences so that homes at particular risk could be protected; others suggested gathering information on flood victims and the effects of flooding. In general, it was agreed that a pro-active response was required. One interviewee suggested that a database be made available for all County Council staff.

4.3. Vulnerability in Woking, Surrey.

4.3.1 Site Profile

Woking is a large town to the north of Guildford, under the control of Woking District Council. The properties hit by the Autumn 2000 floods lie in a major urban area contained within two wards: Kingfield and West (the majority of affected properties); and Mount Hermon East. Population figures as at mid-1998 for Kingfield and West are 5,400 (21% under 16; 59% 16-59; and 21% over 60). Population figures for Mount Hermon East are 4,900 (19% under 16; 61% 16-59; and 20% over 60). Woking has the highest minority ethnic group population in Surrey at 5.4%; the majority are Urdu, Spanish and Italian speaking. For the two wards in question, minority ethnic population is 9.8 per cent of the total Mount Hermon East population (6.1 per cent of which is Pakistani) and 4.4 per cent for Kingfield and West (0.6 per cent Indian). Jarman Index of Deprivation scores are as follows: Kingfield and West ward: -1 (rank = 4897); Mount Hermon East ward: -7 (rank = 3628).

Though a flood watch was in place for the River Wey catchment (including the Hoe Stream), no direct warning system existed at the time of the Autumn 2000 flood events. Warning of flooding in the Woking area reportedly came late; information in the form of leaflets to at-risk households was disseminated by the Borough Council prior to the flood but some residential roads were mistakenly omitted. The Hoe Stream flood constituted one of the severe floods of the period with cause of flooding given as main river, with addition problems from sewage discharge and surface water. At least one hundred and forty two properties were affected with several households evacuated; here again, a rest centre was made available.



Houses near the Hoe Stream, Woking

4.3.2 Vulnerability regarding Reception of Warnings and Ability to Respond

Apart from those households where prior flood-warning literature was not distributed, no particular vulnerabilities in terms of receiving warning were reported. This was not the case with regard to warning response, however. Informants reported older people as being very vulnerable, especially those living alone; where there was warden support in sheltered housing, for example, a support mechanism was already in place. Many older people were said to be very confused and some were difficult to deal with, particularly over evacuation even where there was three foot of water in the property. Pet owners (of whatever age) were also reluctant to evacuate because they could not find their animals; many were distraught at the thought of leaving their pets. Families with very young children and single mothers were also reported vulnerable in terms of their ability to respond appropriately to warning.

Informants highlighted restricted mobility as a factor which increased vulnerability; one disabled informant said that being a wheelchair or walking-frame user hinders rapid exit, heightens fear levels and prevents a person from saving any household goods.

Findings suggest that many people in this area, even those outside previously identified categories of vulnerability, were at risk because of their preconceived ideas about flood events; one interviewee said that some residents knew the flood was imminent but believed there was ample time to save themselves and their belongings, “*then, whoosh, it’s too late to grab anything*”.

4.3.3 Vulnerability to Flood Event

Once again, most informants from the Woking area felt that anyone seriously affected by flood becomes vulnerable. Particular categories, however, were similar to those mentioned by interviewees from other sites. The Hoe Stream area is one that houses many low-income families. Some had no insurance cover (insurance premiums cannot be claimed as a valid expense for benefit purposes), others had several small children and yet others were single-parent families. Children were frightened, and confused older people were also especially

badly hit by the event. Illness in a family caused additional hardship and anyone with no family support network was especially vulnerable; most of those using the rest centre fell into this category. Again, informants said that it was the most disadvantaged and most unsupported members of the community who were hardest hit by the floods.

The flood event also took its toll on relief workers here. Rest centre staff had little sleep over the two-week period and there were many reports of ill-health afterwards. One informant raised an important point not covered elsewhere. Although the flood events of Autumn 2000 did not affect the Women's Refuge, had they done so inhabitants would have had to be moved out of the Borough to a place of safety. This would raise the issue of notifying friends or family, letting them know the women were safe whilst keeping their whereabouts secret. It was felt that such an eventuality should be considered in any future emergency planning.



Houses near the Hoe Stream, Woking

4.3.4 Identifying Vulnerable People in Woking

Databases of vulnerable people held by Social Services were apparently not made available at the time of the flood. A Local Authority informant subsequently compiled her own list of vulnerability based on information gathered from past records and from the experiences of Autumn 2000. This information was considered to be of great importance in delivering a rapid and effective response in any emergency.

4.4 Vulnerability in Iford Bridge Home Park

4.4.1 Site Profile

Iford Bridge Home Park (Iford Park) is situated adjacent to the River Stour on the Christchurch /Bournemouth and is essentially a suburb of the city. It lies on the tidal reach of the lower Stour, on an undefended bend of this main river. Iford Park is a small, residential mobile home park containing some eighty permanent park homes situated beside the River Stour in Iford, a small conurbation adjacent to Christchurch. The park lies within the

Littledown ward, which scores -2 on the Jarman Index and is in a relatively affluent area. There are four mobile home sites on the flood-plain in this area, two of which are partially protected by a flood defence scheme; the Environment Agency recently conducted a survey with regard to possible flood defence schemes for Iford Park.



View of Iford Bridge Park and River Stour

A particular problem exists in that the park is classified as containing temporary housing even though residents (almost all owner occupiers) live there permanently. The site is licensed by the Social Services department of Bournemouth Borough Council, though the license refers to overall numbers of homes permitted rather than planning issues. The site is being incrementally redeveloped by the new owner, with newer, high-specification homes being erected on raised foundations and surrounded by brick walls. Several informants (including Environment Agency staff) felt that this flood protection is at the expense of the older, lower lying properties which many owners have inhabited for forty years or more.

Until recently, the site had two types of license: one for permanent homes; the other for touring caravans. Some forty per cent of bases were originally occupied by tourers, almost all of which have been superseded by permanent homes. This is said to have placed a considerable pressure on the infrastructure of the site.

Flood warnings for the River Stour were issued in the last three months of the year 2000, though no serious flooding occurred until December. AVM services were available at the time and a site flood warden scheme already in place following the flood event of 1999. Minor episodes of flooding occurred in October and November 2000 but flooding was at its worst in December when some thirty properties were evacuated; a rest centre on higher ground adjacent to the park was utilised.



Mobile Homes in Iford Bridge Park, showing raised brick walls

4.4.2 Vulnerability regarding Reception of Warnings and Ability to Respond

Findings suggest that the flood warnings received throughout Autumn 2000 caused great concern amongst park residents, affected by an event earlier in the year that had caused damage to property; many of them self-evacuated on receipt of these warnings. Following this series of ‘false alarms’ and minor flood events, the AVM warnings of December 2000 resulted in many different interpretations, thus causing considerable confusion on the site:

“it didn’t matter what reassurance there was, residents still felt compelled to go somewhere and seek shelter. They probably put themselves at more risk going out in the dark with all their possessions that they would have staying put”.

Whereas a local Council considered that residents’ anxiety levels on receipt of flood warning were low because of the gradual build-up to the flood event lasted days rather than hours, enabling people to acquire a “*particular perspective*” of the event, information gained from other informants belied this view. Older residents, defined by one informant as being those over eighty years of age, were said by some to be particularly badly affected by flood warnings. Many were reportedly confused about their meaning and there was much conflicting advice within the site about what action should be taken. Darkness heightened anxiety levels and compounded vulnerability when, as happened in Autumn 2000, the electricity supply was cut off. One informant said that some of the older residents were very reluctant to leave their homes; one older woman refused altogether. The evacuation of another man of 96 was hampered both by his own mobility problems and by his size – he was said to weigh in excess of twenty stone.

Iford Park residents were reportedly particularly disadvantaged with regard to taking appropriate action on receipt of flood warnings, even where mobility was not impaired; unlike a house, or even a bungalow, a mobile home offers little storage space where furniture or household goods can be removed from floodwaters. The fabric of these homes, too, renders them prone to permanent damage.

4.4.3 Vulnerability to Flood Event

Informants with first-hand knowledge of Iford Park initially reported that no particular group stood out as being more vulnerable than any other. There were many older people on the park, all were retired (the lower age limit for residency is 50) and there were only a few cases of disability at the time. Not all residents were said to be dismayed by the flood events, particularly where homes were on higher ground and therefore unaffected. After discussion, the following categories were highlighted: people with impaired mobility, visual or hearing impairment; those with heart conditions; and the old (75 years or more). All informants felt that those without a social network of nearby families or friends were at particular risk.

One informant spoke of vulnerability in terms of resources: financial; social; physical; psychological; or any combination of these four attributes. He believed that some people had sufficient resources to cope relatively well with the effects of flood whereas others did not, singling out the mentally ill as being particularly disadvantaged at times of disaster. Lack of insurance cover also rendered home owners more vulnerable. An informant spoke of a retired couple who had sold everything in order to buy their home but could no longer obtain cover:

“everything’s tied up in there and if they’ve got no insurance and it floods that’s it... that’s real vulnerability”.

Findings suggest that the principal issue of vulnerability in Iford Park centered on the nature of the site itself. These mobile park homes, though inhabited on a permanent basis, are categorised as temporary structures. It is also difficult to fit (or store) individual temporary flood barriers. In addition, the Borough Council views this private site as one property, a ruling which has adverse effects for the provision of sandbags. There were also issues of isolation and stigma; relationships with the wider community did not seem to be easy and the park was reported as being isolated from the rest of Iford (for instance, no-one outside the park knew of the 1999 flooding until two days afterwards) and the status of park home residents within the community is said to be low. Most residents, nearly all of whom were of retirement age, had their entire capital tied up in their home yet as the site was blighted by its flood history, resale was said to be difficult. There was also a considerable fear of post-impact crime and looting amongst site residents, and of recurring flood:

“ a feeling of helplessness, that is one of the main things. That is always there, that worry and that fear”.

4.4.4 Identifying Vulnerable People in Iford Park

The site warden was fully aware of the special needs of people on the site; she and her residents’ committee (a group totalling four people) each took responsibility for a quarter of the site, thus ensuring that the needs of this small community were well served in times of emergency.

It appeared that no Local Authority databases of vulnerability existed specifically for Iford Park. Were any residents registered as disabled or needing special care, it was considered that

they would be listed with Social Services. Informants commented that General Practitioners could also be used as a source of information, particularly as it is current government policy to forge links between Social Services and Primary Health care providers.

4.5 Vulnerability in Bewdley

4.5.1 Site Profile

Bewdley is a semi-rural market town to the west of Kidderminster on the River Severn within the Wyre Forest District Council. There are two Wards: Bewdley; and Wribbenhall and Arley (on the east of the river) both of which were flooded. It lies in an indicative fluvial flood plain in a fairly rural area. The resident population of Bewdley in 1991 is given as 9,009 residents. The population tends towards the older age groups and there is much housing for the over fifty-fives; two recent riverside developments were built before last year’s floods, one of which provides sheltered housing. Bewdley is a relatively affluent area, ranked 6161 in the Jarman Index of Deprivation (with a score of -16). Minority ethnic presence is extremely small.

Flood warning in the form of an AVM service was available for Bewdley at-risk households though, in the Autumn 2000 flood event, the usual six hours’ lead time was reportedly reduced. Flooding here was described as the worst for fifty years, impacting upon the entire region. Cause of flood was given as main river with one hundred and forty properties flooded. Many evacuations were necessary and a rest centre was made available in the town.



Flood defence under construction on the River Severn, Bewdley

4.5.2 Vulnerability regarding Reception of Warnings and Ability to Respond

In terms of receiving warnings, informants considered that hearing impaired people, and those who were sick or disabled were the most vulnerable. Fear and anxiety on receipt of warnings also rendered some older people at risk.

Warnings in this area provided sufficient time for some preventive action to be taken. Informants reported that it was the old, the disabled or sick and parents of young children who were particularly vulnerable in terms of taking appropriate action. People living alone, and those with sole responsibility for young children at the time, were especially vulnerable. One category of vulnerability not mentioned elsewhere was those people relatively new to the area, those in rented accommodation for example. Tenants were often said to belong to low income groups and to be without household insurance. Older newcomers were highlighted as being particularly at risk; Bewdley has a high proportion of older residents.



View of River Sever, Bewdley

4.5.3 Vulnerability to Flood Event

As with other areas, a pattern of vulnerability emerged whereby the following groups were reported as being most at risk: the old and the very young (with the caveat of heterogeneity repeated here); families with young children; sick or disabled people (although many were well catered for by family or Social Services); low income groups; those living alone; and people with poor social networks. Tenants and newcomers constituted additional categories of vulnerability with regard to the event and its aftermath.

Because of Bewdley's high-profile flood history, many longer term residents (including older people) were well acquainted with a "*flood routine*"; one informant spoke of an older woman putting one breeze-block on her manhole cover and another on her toilet seat. Several people were said to accept flood risk as a part of life in the town.

4.5.4 Identifying Vulnerable People in Bewdley

Though no Local Authority list of vulnerability existed for Bewdley at the time of data collection, the local Flood Action Group has since compiled a database of vulnerable persons in the town who are at risk of flooding; this is frequently up-dated. Residents registered as disabled or needing special care are also listed with Social Services.

4.6. Vulnerability in Skinningrove

4.6.1 Site Profile

Skinningrove is a small village situated on the coast to the south east of Middlesbrough. Although it is in a fairly rural setting, there is a large steel works next to the village. It lies in the ward of Lockwood and Skinningrove. Resident population for the whole ward in mid 1998 was 5,300 (21% under 16; 58% aged 16-59; 20% aged 60 and over). Population for the village itself is approximately four hundred. The area is an extremely deprived one, with a Jarman score of 20 (ranked as 8134 out of a possible 9363 wards). There is almost no minority ethnic presence in the village; the proportion of minority ethnic population in the North East is only 1.4 per cent.

Since the watercourse was not classified as main river, there was no warning system in place for the Autumn 2000 events. Flooding occurred twice within a matter of weeks and was extremely swift and severe on both occasions, with damage to some hundred and seventy properties. Cause was given as ordinary watercourse; a small beck above the village had recently been channelled, with the result that its base became scoured and flooding was rapid. The North Sea is gradually encroaching on the entire coastline and flooding can be aggravated by tidal waters, though this was not said to be an issue in 2000. There were many evacuations during both flood events; a rest centre was opened above the village.



Skinningrove Beck, showing damage to grille

4.6.2 Reception of and Ability to Respond to Flood Warning

Since no official warnings were issued here, there was little discussion on this topic apart from the comment that a lack of adequate warning time (coupled with the severity and force of floodwaters) left everybody at risk. Local informants considered that because the village is a small one and community spirit is strong, residents would take it upon themselves to ensure everyone received as much warning as possible. At the time of the 2000 events, people who lived alone, the old, sick or disabled were not only warned by neighbours of impending flood but were helped to safety and wherever possible some of their belongings moved out of harm's way. As with all other sites, it was the older people, the sick or infirm and those who lived alone or had young children who were said to have particular problems in responding quickly in the face of imminent flood. Single mothers, pregnant women and those alone with their children faced additional difficulties. There were instances where people with pets initially refused to leave their homes and many older people were equally frightened of leaving, often because they were fearful of the floodwaters.

The issue of local knowledge and its importance was raised by several informants here; Skinningrove has very particular flood-risk circumstances. Information that may be vital for one area was reportedly often lost in the desire to produce warning material suitable for more general use, omissions that can lead to problems of mistrust between local residents and Agency officers '*on the ground*'.

4.6.3 Vulnerability to Flood Event

The two extremes of the age spectrum were said to be especially vulnerable in terms of the flood events in Skinningrove, and the speed with which the flooding occurred in the village added to everyone's experience of trauma. Disabled people, the unwell, those with reduced mobility and hearing impairment, were also badly affected. Families with young children were very vulnerable; owing to the severity of the flood and the number of evacuations, families were sometimes separated, placing additional stress on already traumatised victims. Findings show that many residents, particularly the older generation, were anxious about

crime and looting, and adverse long-term after-effects were common amongst all groups regardless of age. Social support was said to act as a buffer and those people without such networks (though there were few reported in Skinningrove) were more vulnerable than those with family or friendship groups.

4.6.4 Identifying Vulnerable People in Skinningrove

Given that Skinningrove is a small and close-knit community, the needs of those vulnerable in times of flood or other emergency are well known. The local Flood Committee has compiled a database of vulnerable persons at risk of flooding in Skinningrove which is regularly updated. No such Local Authority database existed at the time of data collection, although residents registered as disabled or needing special care were known to Social Services.

5. SUMMARY OF FINDINGS FROM KEY INFORMANT INTERVIEWS

Before summarising findings from our key informant interviews, it is important to mention three caveats. First, the findings and recommendations contained within this section are founded on an accumulation of information gathered from a relatively small number of key informants at each of our chosen sites; the information given should not be seen as a definitive account of events. Secondly, whilst our informants did not offer themselves for interview, they did agree to be seen and therefore constitute something of a self-selecting sample; it is, however, notable that not one person refused to be interviewed. Thirdly, these findings do not purport to present an exhaustive catalogue of flood-related vulnerability, nor do we claim that they are necessarily applicable to other geographical areas. Since the information gained from these interviews does, however, offer support for both the body of published literature and our secondary data analysis⁶, it is considered that we can have a fair degree of confidence in our findings.

The findings described above bear out the published material in that it is those people who are already socially disadvantaged in some way who were also found to be particularly vulnerable in terms of reacting appropriately to flood warning and suffering from the experience of flood. Data from key informant interviews support the notion that actual levels of loss (which may be small) are greatly increased where there is an inability to make good those losses or to maintain or restore acceptable living conditions (e.g. Cutter 1996). Our findings also lend support to the notion put forward by Weichselgartner (2001) that natural disasters are indeed an interaction of physical change and social conditions and thus more accurately interpreted as social phenomena. Perception of risk (see Tunstall and Parker, 1999; Tunstall et al, 2000) was found to have a bearing on actions taken on receipt of flood warning; our findings bear out the fact that the probability of risk (i.e. flooding) is frequently underestimated.

The findings contained within this report also support those uncovered by the secondary analysis of existing data⁷. For example, single householders were reported as being less likely to be able to take avoiding action than households with two or more adults; this did not merely apply to older people but also to young, single parent families. People in lower income groups were also reported as being less able to cope with the aftermath of flood. Families with young children were also hampered in terms of taking action and those newly resident or never before flooded were reported as being more vulnerable, both in terms of acting on flood warning and in terms of taking action. Prior experience of flood, though reported by some key informants as having a debilitating psychological effect, does appear to enhance certain relevant coping skills.

5.1 Flood Warning and Flood Event

Circumstances pertaining to flood warnings and flood events varied considerably over the six sites of interest. What emerges as a key finding strongly, is the need to consider local issues and to retain (or reinstate) local action rather than adhere solely to a national initiative. Much valuable information is held by local residents, by officers at regional Environment Agency

⁶ See companion reports: R & D Project W5C-018/1 and R & D Project W5C-018/2

⁷ See companion report: R & D Project W5C-018/2

offices and by staff within Local Authority, voluntary and local emergency services. This is information with a vital bearing on circumstances relevant to local flood events.

5.2 Vulnerability to Flood Warning

Few informants had much to say on this topic as most had dealings with the flood event and its aftermath rather than with stages prior to flooding; however, certain categories emerged as being considered particularly vulnerable with regard to reception of and response to flood warning. Findings cover both these areas and echo those in the body of published literature.

5.2.1 Reception of Flood Warning

Those seen as vulnerable with regard to the reception of warnings included the following: minority ethnic groups (especially where language was an issue); older people who were confused; those with mental or physical illness; and disability, including hearing impairment (deaf people were considered at particular risk of not receiving telephone warnings, especially if issued at night). Other informants spoke of a lack of knowledge or education that prevented people from taking an active part in reacting appropriately to flood warning (and thus minimising flood damage).

5.2.2 Response to Flood Warning

Categories reported as vulnerable in responding to flood warning included the list above but also covered: all types of disability and impairment, whether physical or mental; families with young children; people new to an area or not previously flooded. Those who live alone were reportedly more vulnerable partly because they found it difficult or impossible to save furniture or other items and partly because anxiety levels were reported as being greater if not shared; this category included single parents with dependent children. Single householders were said to be even more at risk where there was no local network of family or friends.

It is important to recognise that the groups one might expect to be the most vulnerable in an emergency situation (disabled people, for example) are often very well served because they are known to and protected by Social Services or some other organisation.

5.3 Vulnerability to Flood Event

Here again, findings support the body of published literature⁸:

“the sad fact is that it is the already vulnerable members of society who are the most vulnerable in any flood experience”.

Older people were considered particularly vulnerable in terms of coping with flood event and its aftermath, though most informants stressed that they do not constitute a homogeneous group; some coped very well, showing a real stoicism and “Dunkirk spirit”. It was frail, confused or unsupported older people who were particularly at risk. At the other end of the age range, families with young children, especially single parents, were amongst the vulnerable groups mentioned by many informants; many children were disturbed for a considerable time after the event, particularly in cases where evacuation was necessary.

The literature suggests that minority ethnic populations constitute a vulnerable group in terms of flooding; our data supports this view, though it is important to mention that only one such group was discussed (the Asian community in Stockbridge).

⁸ See companion report: R & D Project W5C-018/1

People without resources were said by many interviewees to be especially vulnerable. Resources were defined in many ways: financial (particularly where there was no insurance cover); physical; psychological; and social. This last category, albeit a difficult one to access, includes those people who are unsupported by a local family or friendship network. “Vulnerable adults” was another term used by some of our informants to describe a group who managed less well in flood events; this was not intended to mean abused adults (a Social Services term) but rather to describe an amorphous group of individuals whose general coping skills are poor. Disability and impairment, whether the result of a physical or mental condition, was mentioned by many informants; deafness and lack of mobility were particular problems uncovered by the data.

One type of accommodation found to be especially at risk in terms of flood damage was the mobile home. These structures suffered considerable damage, as did the household contents; residents were also left in many cases with unsaleable homes. The fact that all the residents on the mobile home site under review were older people only added to the difficulties. Whilst not referring specifically to type of accommodation, people new to an area were also reported as being more vulnerable than those living there for some years. Prior experience of flooding did seem to give some degree of protection.

There was a good deal of anxiety amongst evacuees regarding the possibility of looting or other crime; where electricity supplies were interrupted, the worry was reportedly even greater. Some more affluent home-owners refused to leave their properties at all, fearing that they would lose their belongings to burglars. This small group represented a particular type of vulnerability, given that they were putting themselves at unnecessary risk from flood-waters. Another at-risk category, though again an amorphous one, was formed from those who had become somewhat complacent as a result of flood defence structures, reportedly seeing them as something that would protect them from flooding in all eventualities.

One unexpected category of vulnerability appeared in the form of flood relief workers. These were often members of local authorities or voluntary organisations and, in the main, were people who had dealings with flood victims during the worst of the flood events. Management staff were also affected in some cases, as they empathised with the distress felt by their subordinates as well as being concerned for their well-being.

Several informants, particularly but not solely those from within the Environment Agency, mentioned the public’s perception of what the Agency can and cannot do in terms of flood warning and protection. Many see it as an organisation that can, and should, be responsible for all flood-related issues. Problems also exist between the political wing and Local Authority staff; both seem to look to the Environment Agency to solve their disputes.

Issues of responsibility and legal liability were also discussed in relation to flood wardens. It appeared that the Environment Agency has been trying to obtain a legal opinion on the issue of public liability but has not had much success. If the Agency were to train flood wardens, they effectively become agents for the Agency and have responsibilities under HSE safety regulations. Many people were reported to be frightened of formalisation, even though they might be willing to carry out the role of warden. A suggestion from one informant was that the term Flood Warden, one that implies responsibility, should be avoided; as an alternative, a flood response plan (similar to neighbourhood watch) could be adopted. This could be done by creating partnerships with civic societies, parish councils, pressure groups, neighbourhood

watch groups and so forth. Several informants considered it important to work with local people and local councils (where a body of local knowledge is held); by giving them the relevant contacts and information, they will then become more proactive.

The issue of local knowledge emerged as a very important one; the need for harvesting and using local knowledge was seen as paramount by many informants. Not every area was considered to be best served by an AVM system; the urgency of tailoring warning systems according to geographic conditions and the needs of the local community was stressed. Since communities are not homogeneous, and vary from one area to another; one key informant felt that national AVM flood warning targets are not necessarily the best way forward, suggesting that a national target response of two hours lead time is not always applicable, let alone possible. In some cases, giving a warning by means of a siren or flag was seen as preferable. On-site observation, particularly in coastal areas, was considered important too, with someone with the relevant knowledge and experience to be “*watching each wave*”. Several informants stressed the importance of building up local trust as well as giving local people a degree of control over their own warning systems.

“there is simply no substitute for doing your own thing, taking advantage of local knowledge”.

Whereas they recognised the practical difficulties, sensitivities and issues of confidentiality associated with the compiling of vulnerability databases, most informants considered that such a list was extremely important if they were to be able to offer help where it was most needed. Several people suggested that, rather than involving Local Government, a flood warden or local flood action group might be the best means of accessing, maintaining and administering such information.

6. FOCUS GROUP DISCUSSIONS AND INTERVIEWS WITH MEMBERS OF VULNERABLE GROUPS

This part of the report covers the research that took place during Phase Two of the project. It was informed by findings from key informant interviews conducted in Phase One and deals specifically with vulnerable groups and their response to flood warning and flood event.

Section 7 contains a detailed account of the research findings from focus group and individual interviews, categorised under the following sub-sections: Pre-event Issues; The Autumn 2000 Flood Events; Post-event Issues; Post-event Flood Warning Issues; Local Flood-related Action; and Perceptions regarding Causes of Flooding. Section 8 addresses the original research questions and synthesises the principal conclusions from our findings. Section 9 suggests recommendations for practice based on our research findings. Details of the methodologies adopted in vulnerable category choice, selecting and recruiting participants, data gathering and analysis appear in Section 3. The Interview Topic Guide appear as an Appendix to this Report.

As a result of preliminary research undertaken during Phase One and reported above, the following groups were found to be particularly vulnerable in terms of awareness and ability to respond to flood warning: older people, especially those who are frail; people with disability or those with long-term limiting illness; young carers of sick or disabled people; families with young children; people newly resident in an area; short-term tenants; members of minority ethnic groups; ‘vulnerable’ adults (e.g. those with learning disability or mental health problems); people living alone and those with few social support networks. Four of these groups were chosen for further examination (see Section 3).

7. SUMMARY OF FINDINGS FROM FOCUS GROUP AND INDIVIDUAL INTERVIEWS

What follows is a summary of the principal findings from focus group and individual interviews. For clarity, these are presented in six discrete parts.

The first three sections report findings directly relevant to the flood events of Autumn and Winter 2000/2001. Section 7.1 addresses topics pertaining to the pre-impact stage, examining participants' pre-existing levels of flood-related knowledge, awareness and preparedness. Section 7.2 covers the flood events and their immediate aftermath. It explores: participants' receipt of and responses to flood warning; barriers to appropriate action; participants' actions and responses during the impact period; evacuation and the emergency services; and a summary of factors found to increase vulnerability during this period. Section 7.3 covers both the early and longer-term post-event periods; topics covered include: accommodation; the recovery process; emotions and physical health; social capital; and post-event levels of flood related knowledge, awareness and preparedness.

The remaining sections cover issues concerned with flood warning, flood defence (including local flood related action) and understandings of causality. Section 7.4 reports actions taken on receipt of any subsequent flood warning and findings connected with Environment Agency warning systems and literature; an informal evaluative exercise was conducted with all focus group participants. Flood-related action at a local level is discussed in Section 7.5; this includes an examination of barriers and incentives to participation in such action. Local flood defence and flood warden issues are also included here. Finally, Section 7.6 briefly describes participants' perceptions regarding local, national and global causes of flood, and possible individual mitigating action.

A full report of findings from the focus group and individual interviews can be found in a Technical Report entitled "Detailed Findings from a Qualitative Study of Vulnerability to Flooding". It is important to note that all findings are necessarily based upon post-hoc reports⁹ and thus reflect both the passage of time and the long-term effects of the flood experience.

7.1 Pre Event Issues

All participants were asked about both their locality and their property in terms of their perceptions of flood-risk prior to the events of 2000/2001. Apart from those in Bewdley, the data clearly show that few people in any category considered either their property or their immediate locality to be at risk. For the majority of participants, low levels of awareness appeared to be grounded in ignorance; very few people had any prior experience of flood. Findings are reported in two subsections in order to allow for some comparison between the perceptions of new residents' and other groups.

Flood-related knowledge, awareness and preparedness of New Residents:

The two New Residents groups were asked what they knew of local flood issues before buying their houses. Although no-one in the Woking group had ever been flooded before, several people had made enquiries prior to purchase. It appeared that none were alerted to

⁹ Collected some two years after the flood events.

any risk. In one case, legal searches had revealed details of flooding in 1968 but the solicitor in question had failed to pass on the information:

*M: He thought that it was a long time ago and not worth worrying about
(New Resident: Woking)*

This ignorance of the facts for new homeowners, shared by all in the Woking group, was suggested as “*the main reason*” underlying their complete lack of awareness regarding potential flood danger. Since none of them knew they lived on a floodplain, they saw no likelihood whatever of serious flooding in the area, let alone that their homes might be affected:

*M: there was nothing to tell us it was a floodplain ... where they do the checks on
Land Registry...it doesn't record it*

M: It was an absolute shock to me when it happened (New Residents: Woking)

Many were angry that they had not been made aware of the floodplain before purchasing. One man spoke bitterly of feeling that he had no control over his situation:

*M: I could live with the floodplain if I knew what I was getting into but I can't live
with it when I didn't know. I knew about floodplains but I didn't imagine for one
minute that where we're located was on one. In fact I didn't even know, this is how
sad I am, I didn't even know there was a bloody river. That was a surprise. I knew
the hump back bridge, I go over it every day, but I didn't know there was a river in
that proximity. I wouldn't have bought the house had I known that the house was at
risk at all from any flood. (New Resident: Woking).*

Even the size and name of the watercourse¹⁰ belied any possible danger of flooding:

M: It's a stream in it

M: Supposed to be

M: Yeah, it's got two inches of water in it (New Residents: Woking)

Most participants felt that a prior knowledge of flood risk would have been very helpful in alerting residents new to an area. Many of them now believed that following the events of 2000, anyone buying a previously flooded property would be made fully aware of its history.

New Residents in Bewdley differed from their Woking counterparts in being very aware of flood risk from the Severn even before moving to their present homes: many knew the area for some time beforehand; many had homes adjacent to this major watercourse; and the history of flooding to Severnside North is widely known and well documented. Here, too, several had made enquiries before buying their properties, one man approaching the Environment Agency for a full flood history of the river.

*M: We enquired about insurance when we moved, but there had never been any
occasion when the property flooded*

M: Most years it's minor but it floods, certainly onto the road here.

M: I think you're aware if you've lived in Severn Side you're often flooded

¹⁰ (the Hoe Stream)

M: Yes, yes but not (the south side) (New Residents: Bewdley).

Despite knowing more about local flooding than most of our other focus group participants, no-one here expected their own properties to be severely affected although a few admitted to being “half-aware” of flood-risk. Most, however, felt at no risk at all:

F: We knew there was a risk of flooding but because it was only the cellar that had flooded in the last ten years it wasn't expected

M: My understanding was the property was alright and so it was something that really wasn't in my consciousness.

M: I've lived in and around Bewdley for thirty years - in one, two, three properties - and then in February 2000 we moved from the High Street down to Severnside South to our dream cottage. It hadn't been flooded for fifty years. (New Residents: Bewdley)

Though not actually categorised as ‘new residents’, some recent ‘incomers’ to Iford Bridge Mobile Home Park, describing themselves as having lived ‘inland’, said even the proximity of their “lovely river” had not alerted them to possible danger:

M: I didn't understand the river; I thought the river was for fishing and things like that...

F: But when you see it in the summer, the river is low and the bank looks so high

F: You think it's never going to come up (Older People: Iford Park)

Flood-related Knowledge, Awareness and Preparedness of Other Groups:

Here again, the vast majority exhibited very little appreciation of potential danger prior to the events of 2000/2001. Some participants considered their locality to be completely free from flood risk, others were ignorant because of the considerable time elapsed between severe events (legal searches for house purchases are not required to cover more than twenty years and neighbours or family members failed to pass on relevant information, if indeed they ever knew or remembered it).

F: We knew nothing at all, our neighbours didn't even tell us ...and searches, you only have to give the last twenty years history and because the twenty years didn't include the 1968 [event] we were unaware of anything. (Parent: Woking).

F: My parents didn't even remember; they were living in Woking then but they don't remember the flood (Parent: Woking)

Where previous local flooding was known to have occurred, most people appeared to have become desensitised to risk: perhaps because any flooding usually occurred in other parts of the town; perhaps because their own property was ‘far from the river’; perhaps because regular but minor flooding had led to a state of complacency. Confusion over terminology flood risk probability (e.g. 1 in 50 years) only compounded the problem.

F: We're quite far from the river. Obviously Mwrog Street is renowned for flooding because it's been flooded a few years ago, but we're not even by the river... you don't expect that amount of water (Parent: Ruthin)

F: It's flooded the road before but it's never been in the properties

M: It bursts its banks all the time doesn't it.

M: All the time we've lived here, we've seen the common flood and the water drain away again...what happened to us two years ago was so out of character (Parents: Woking)

*F: ... but he didn't say which fifty years ...I was seventy-five so it didn't worry me!
(Older Person: Bewdley)*

In the case of Skinningrove, any possible risk of flood was seen as emanating from the sea; the beck itself had never given cause for concern, even when running high:

F: we've never felt a threat with the Beck. Me husband's lived down 'ere all his life and has never been flooded, never felt at risk. ...I mean sometimes we get good flows on the Beck but ...we've never had reason to worry over it. (Parent: Skinningrove)

Awareness of local flood history led some people to incorporate this knowledge in their property-buying decisions¹¹. A life-long Bewdley resident, remembering the severe floods of the 1940s affecting her lane, deliberately chose a house on high ground:

F: When I was a child, we used to live opposite the bottom school and [the water] was always in the school ...I wouldn't live any further down; if I couldn't have [a house] up at the top that was it. I never dreamt that it would get as far as me. We've never had a flood not like that...I never expected it. (Older Person: Bewdley)

One Iford Park resident had been flooded four times during his time there. Longer-term park residents were well aware that they lived on a floodplain and conscious of how shallow the river had become in recent years:

M: When it flooded the second time they did dredge the river ten foot deeper ...and we never had a flood then for ten years. When the tide's down you can see the silt way out in the water... (Older Person: Iford Park).

In almost all cases, however, most people appeared to see their own homes as invulnerable, believing that 'it won't happen to us'. With very few having had prior experience of flood event, our findings reveal very low levels of pre-event flood-related knowledge or risk awareness. There was all too often a state of local ignorance that resulted in turn in a general lack of preparedness:

M: My experience of the 2000 flood was being unprepared for it. (New Resident: Bewdley)

What participants said they needed was prior information:

M: it's just ignorance ... because nobody had told us in the first place. If you only got flooded for the last time in 1968, everyone sort of forgets about it. If we'd have known

¹¹ Others did not: *F: my daughter had [flooded] across the courtyard, yet we never consciously thought about floods. But it didn't put us off, we never thought about it (Disabled Older Couple: Bewdley)*

that there was a chance that we were going to get flooded, we might have done something about it sooner (Parent: Woking)

Irrespective of pre-event levels of local flood-related knowledge, however, the following statement sums up feelings common to all our flood victims:

F: I think ...that you have no concept...you only have concepts like this when it's happened to you, you've actually experienced it (New Resident: Bewdley).

7.2 The Autumn 2000 Flood Events:

This section covers topics pertinent to the impact period. It first addresses flood warning issues (including warning response and barriers to action). There follows a summary of findings relevant to the flood event itself including: actions and barriers to action; evacuation; and factors found to influence levels of vulnerability.

7.2.1 Flood Event Warning Issues:

There were considerable inter-site differences regarding warning of impending flood. Bewdley, already served by the Agency's AVM system, had several hours' warning though the usual six hours' lead time was much reduced, giving rise to panic and disbelief:

M: At four o'clock in the morning my wife said what's that funny noise...I can hear water...so it was panic stations and it was up to the house by then (New Resident: Bewdley)

F: everyone was saying Wednesday...it's not going to come in today, it's tomorrow, in other words you've got longer... (Older Person: Bewdley)

Other areas had either little warning (e.g. Ruthin; Woking; Iford Park) or none at all, as in Skinningrove (which experienced two floods in close succession) where there was only a matter of minutes before "millions of gallons" of water hit the village.

F: The first flood, we didn't get no warning (Older Person: Skinningrove)

F: The most warning we had [for the second flood], and this is how quick it happened, was one man literally ran round shouting down the High Street and knocking on as many doors as he can. He said 'get everything upstairs' and I thought 'oh God, no, not again' and that was it. My husband came in five minutes later and he said 'the water's following me'. (Parent: Skinningrove)

In Ruthin, warnings came from friends or family in other parts of town already flooded; Iford Park residents were also alerted by one another:

F: My mum phoned me at seven o'clock and within half an hour ...the water was coming in both ways...when I looked out the window it was only up to the drains but the next thing the whole thing just come both ways... coming through the walls and everything. (Single Parent: Ruthin)

Participants from Woking complained that they could get no useful information from the Environment Agency, local radio or Council, nor could find anything accurate or informative on Floodline. Many people were extremely angry at the inadequacy of warnings:

M: It was very hard to get any information about what was going on...I tried Woking Borough Council, they were useless, and a neighbour tried the Environment Agency twice...they said "everybody's ringing in, the river's rising, oh and there'll be sandbags on the way" (New Resident: Woking)

F: They put our lives at risk (Parent: Skinningrove)

Actions and Barriers to Action on Receipt of Warning or Realisation of Imminent Flood:

Relatively few people reported taking action on receipt of flood warning. In many cases this was because participants reported that they received no prior warning of impending flood. Longer lead times allowed more time to act, but where little or no warning was given people said "*there was nothing you could do*". In Bewdley for example, some had time to organise furniture removal vans whereas a Skinningrove participant said that trying to save his home was "*a waste of time...I had a beer and went to bed*".

In some areas, initial flooding was met with equanimity, people still believing their properties to be safe: participants in Woking spoke of "*having a bit of a laugh and a joke*" as waters rose in the road. In Bewdley, some older people showed little concern, trusting in the river's 'normal' danger levels:

F: I never dreamt it would get as far as me...I thought I was safe

F: I wasn't so concerned... because I thought it won't come in, it's not the right point, this is only four point six. (Older People: Bewdley)

The first action for most people on realising they were in danger of imminent flooding was to move people, pets and possessions (cars; bicycles; furniture; valuables; personal items) to safety.

M: We knew what to do, we just left it...got out (Older Person: Skinningrove)

F: You think of two things, your home and your children (Parent: Skinningrove)

F: the first thing we did was to take Lady's bed upstairs and shove 'er upstairs as well...she doesn't like water so I knew she wouldn't come down again (Older Person: Skinningrove)

F: we could see that the river was getting bad so the first thing we did was take the car out up onto the Iford Bridge. (Older Person: Iford)

F: I had a real big polystyrene (sic) dustsheet and I brought it downstairs and wrapped my three-seater sofa in it and threw everything on my sofa (Parent: Skinningrove)

Those who could took up carpets and moved furniture upstairs, on to crates or bricks, or stacked things on top of each other. Some had time to turn off gas and electricity, though this was not possible for Skinningrove residents who had only a few moments before homes were flooded. Others attempted to seal doors or windows; one Woking family dug trenches to "*catch water in the garden*" but only made things worse. The first action for many older

participants was to contact family members, although one man, alone when he received the AVM warning, was simply too frightened to do anything until his wife returned:

M: If you get a call like that your think to yourself 'good grief, now what am I going to do. I was on me own and I had a phone call to say Severnside South is expecting a flood any time...I just put the phone down...I didn't know what to do... I was frightened, in fact I wanted to die (Older Person: Bewdley)

Feelings of horror and panic were common amongst all categories, particularly amongst older people, those lived alone, the disabled, and parents of young children:

F: I was really, really frightened, I was running round like a wild thing trying to put things up out of the way but how far can you put 'em up...old people can't lift. (Older Person: Iford Bridge Mobile Home Park)

F: I wasn't thinking logically, I was mentally planning how do I get my kids out of this safely if it starts rising any further... that fear as a parent of how do I get my kids out, it's awful I'm sorry I shouldn't cry but...I had this plan in my head ... we'll get 'em out of that bedroom window and we'll climb down the roof but then what ... me mind had gone into overdrive (Parent: Skinningrove)

Fear, and an uncertainty of how best to act (“we were naïve and in shock”), hindered a clear-thinking, appropriate response and heightened people’s distress:

F: I thought well what do I do? Do I save me house or do I save me car (Older Person: Skinningrove)

M: It hadn't happened before so we were headless chickens running around and didn't know what to do... we were completely taken by surprise really (New Resident: Bewdley)

F: When you're actually in the middle of being flooded...there's so many thoughts going through your mind, you don't think 'that needs doing and that needs doing' ... (Parent: Skinningrove)

Others were inhibited by an apparent disbelief that the rising waters would actually enter their homes:

M: I think they told everybody down our road but... never having experienced it before...you're sort of half-heartedly removing things and not thinking it was going to happen (New Resident: Woking)

Insufficient time, lack of space (as in small, single-storey or mobile homes), or lack of physical strength were additional hindrances; women, older, and disabled people were particularly vulnerable especially where they were the sole adult in the home. Darkness, and the speed and force of floodwaters also limited action.

F: It comes so fast...you've not got four or five hours to pack suitcases (Older Person: Iford)

F: I haven't got enough room as it is, then you're trying to find places for everything to go upstairs (Single Parent: Ruthin)

F: When you're on your own, you can't lift three-piece suites up (Older Person: Skinningrove)

F: It was pitch black and blowing a gale – horrendous (Parent: Skinningrove)

Once floodwaters entered property, those who could made efforts to minimise damage: a Bewdley resident pumped water out of his house for thirty-six hours until he reached the point of exhaustion; another couple moved furniture before going upstairs “*with a gin & tonic*”. Coping strategies ranged from humour -one man played the film music from Titanic on his CD player as floodwaters reached his house – to reacting on autopilot, “*you react without thinking, but it hits you later*”.

What follows is a summary of the actions and barriers to action on receipt of flood warning as reported by participants. Barriers to action can be categorised as follows: characteristics of flood event; factors relating to flood warning; characteristics of property; individual characteristics/circumstances; factors relating to awareness/knowledge/preparedness; emotional factors; and social factors.

Actions Taken on receipt of Flood Warning:

- Move possessions to safety
- Ensure safety of children and pets
- Evacuate house
- Turn off electricity and gas supplies
- Contact family members for assistance (older people)
- Seal/barricade doors/windows

Barriers to Action on Receipt of Flood Warning:

Characteristics of flood event

- Speed, force and quantity of flood waters
- Darkness, adding to fear/difficulty especially for older people and young children

Factors relating to flood warning

- Lack of warning or insufficient time for action
- Lack of advice/information; no central point of contact for communication

Characteristics of property

- Lack of room for manoeuvre in small or single-storey homes (e.g. mobile homes)
- Inadequate dry storage space for furniture and possessions

Individual characteristics/circumstances

- Age, infirmity, pregnancy or disability
- Being alone
- Inability to lift heavy items
- Responsibility for young children, especially if alone
- Responsibility for older or infirm neighbours

Factors relating to awareness/knowledge/preparedness

- No prior experience of being flooded
- Disbelief that flooding would reach houses (e.g. Woking). Difficulty of making mental leap to take action; feelings of invulnerability

- Trust in ‘usual’ pattern of flood or river level, especially where there was a history of frequent flooding
 - Uncertainty when to abandon house; lack of knowledge regarding buildings’ resistance to water
 - Uncertainty/ignorance of most appropriate action
 - New Residents’ ignorance of local flood history
 - Not knowing how best to move large items
- Emotional factors*
- Shock and panic leading to diminished cognitive functioning
 - Fear, especially amongst older people, pregnant women or mothers with young children
- Social factors*
- Lack of help where “*everybody is in the same boat*”
 - Where lead time was long, neighbours’ offers of help were sometimes a hindrance

7.2.2 The Impact

The characteristics of each flood event clearly influenced the responses and reactions of our participants. Four of the chosen areas (i.e. all sites except Bewdley) experienced events that were both unexpected and rapid in onset; however, all areas, experienced the extreme force of floodwaters. Their power and speed, “*like Niagara Falls*”, was met with shock and incredulity:

M: It came down like a wall, it was absolutely incredible the speed of it... I couldn't believe it, whoosh! (New Resident: Woking)

Participants in Skinningrove described the waters as “*a raging river...a tidal wave with huge force*”. They spoke the terrifying experience of being flooded at night-time, of water gushing into their houses “*coming in like a ‘ose pipe through the door*” and the debris that came with it:

F: I had a tree trunk in me living room...some people had fish in their houses (Parents: Skinningrove).

F: We didn't stand a chance (Parent: Skinningrove)

Participants from all categories reported cases where personal safety was compromised: some people were up to their waists in water in the dark; others mentioned the dangers associated with being in fast-flowing water “*not knowing where you were walking*”. One child was knocked off its feet inside the house, another “*nearly got sucked down a manhole cover*”. Pet-owners, too, were extremely anxious:

F: I 'ad both me dogs and I was absolutely frantic ... before I knew where I was it was up to me knees (Older Person: Skinningrove)

Many people were shocked that floodwaters entered through walls and floors as well as doors, and commented on the futility of trying to keep them at bay:

F: There's no greater force than water...if it's going to be in, it's going to be in (Parent: Skinningrove).

There were distressing stories of “*horrible, floating sewerage*” with a “*filthy smell*”. Effluent, described as a “*terrible health hazard*”, came up through toilets and floated in living rooms but whether or not the waters were contaminated they represented a disaster for all our participants:

F: It's all water though, isn't it (New Resident: Bewdley)

Though there were many evacuations in all these severely flooded areas few people actually wanted to leave their homes, with some of the older people being particularly reluctant to do so, especially those who had pets; fear of burglary or vandalism exacerbated these anxieties. Evacuation was often difficult and distressing, especially for older or disabled people, pregnant women and mothers with young children, and for people with animals; in some cases people were unable to leave initially because floodwaters were too strong. Apart from some criticism in one or two areas, the emergency services were almost universally praised:

F: I was up to 'ere [her waist] then and I wouldn't come out, I said no... all that water that's out there I'll get it on me again. I daren't come out. [the lifeboatman] said 'open door gran, just open door, we'll 'old you at this end' ...they put me on this chair and carried me up to pub (Older Person: Skinninggrove)

Almost without exception, participants were horrified by their experiences, although one disabled man said he was initially “*interested to see what would happen*”. Emotional responses ranged from amazement and incredulity to panic; many people reported feeling shocked and traumatised, unable to think clearly and uncertain how best to react. Feelings of extreme fear and powerlessness were common, particularly prevalent amongst older or disabled people, mothers of young children and those who were alone. One mother explained how she “*lost it big style*”, not knowing how to save children from danger:

F: I've never been in that situation before, not being able to keep my kids safe (Parent: Skinninggrove)

M: You're powerless, you see, you can't do anything to repel it (New Resident: Bewdley)

People were fearful for themselves, for family members and pets, and for older or infirm neighbours. One older man was so frightened that he “*wanted to die*”; a frail older woman was terrified that she might drown in her own home should she fall; many parents said that their children were “*frightened to death*”. Being the only adult in the house seemed to increase levels of anxiety considerably.

Factors affecting levels of vulnerability to flood impact:

Several factors were found to increase levels of vulnerability during the events and their immediate aftermath, although it is important to note that these did not necessarily affect all participants to the same degree. Some, listed first, were specific to particular categories but it is notable that many were common across all groups. They included:

- Responsibility for young children, especially if sole adult
- Infirmary or disability
- Old age

- Mobile homes, single-storey or small houses
- Darkness; failure of utility supplies
- Speed, force and amount of floodwaters, contamination
- Lack of knowledge, information
- Being alone
- Fear, shock and panic
- Responsibility for pets
- Responsibility for vulnerable neighbours
- Lack of social support, especially where flooding was in isolated patches (e.g. Woking)
- Pregnancy
- Old property
- Insensitive media/public presence
- Petty crime/vandalism or fear of same

Although few participants made explicit reference to strategies or events that helped them to cope during the flood period, several factors were found to mitigate the trauma of the event, at least in part:

- Social support, whether from family, neighbours or the wider community
- Prior experience of flooding (facilitates ‘automatic’ response)
- Acceptance
- ‘Dunkirk’ spirit
- Pre-impact evacuation
- Humour

7.3 Post-Event Issues:

This section relates to issues arising in the early and longer-term post-event periods although neither period can be delineated by a specific time-frame. It deals first with accommodation and the recovery process, social capital and emotions and physical health before addressing reports of post-event levels of flood related knowledge, awareness and preparedness and actions taken on receipt of subsequent flood warning.

Accommodation:

There was evidence that some people chose to stay in their flooded homes at least for a while, giving various reasons for doing so: having nowhere else to go; wanting to keep the family together; being unprepared to leave a pet; or remaining to look after an older neighbour. Disruption and discomfort was considerable; homes were damp, smelly, noisy (from dehumidifiers), unhealthy and usually cramped. Daily practicalities posed a problem too: cooking was often impossible; ‘eating out’ was expensive; and it was difficult to find hastily stored items.

F: You’re always looking, thinking struth now where did I put that? (Older Person: Bewdley)

F: I didn’t have a kitchen for four months, it was all bare brick...I couldn’t cook, I couldn’t do anything. It just wasn’t the right environment for three children (Parent: Skinningrove)

Although few people wanted to be evacuated, many were forced to leave because houses were no longer habitable or because they could not cope on their own. Some went initially to Rest Centres (though facilities were available everywhere, they were used only by participants from Skinningrove, Ruthin and Iford). Whilst offering considerable praise for staff and appreciating that such centres furnished vital respite during a time of emergency, many people were worried by the noisy, crowded atmosphere and the problems of sharing space with disparate groups of people (and animals). It was clear that these additional stressors were more than some people could bear. Most flood victims said they went to family or friends; some were re-housed by the Local Authority. There was considerable additional stress associated with being away from home, particularly where children, disabled or older people were concerned: sharing crowded homes, especially with several different generations; being removed from favourite personal possessions and familiar environments; moving from one place to another; large families being separated; the difficulties of finding suitable accommodation; and worrying about what was happening at home. Many said they felt “*like refugees*”:

F: You just feel so displaced, don't you (New Resident: Bewdley)

M: You need your own space...you can't get back into a routine and we're all creatures of routine (New Resident: Bewdley)

Many of our participants were unable to return home for several months, some being away for over a year. Where homes were left unoccupied there was considerable anxiety concerning the possibility of vandalism or crime and a few reports of burglary. Opportunism was rife too: men buying flood damaged carpets then attempting to sell them on to other victims; tricksters offering to ‘*look after*’ jewellery in Iford Bridge Park; loan sharks; and men touting credit cards. A Skinningrove resident said that though villagers trusted each other many were uncertain about outsiders: “*workmen don't lock up all the time*”. Others, though, were unconcerned:

F: We had no stuff left! (Parent: Skinningrove).

The overriding feeling expressed by all evacuated participants was the desire to return as soon as possible to some semblance of normality in their own homes:

F: I remember thinking, God, I just want to be back in my home (Parent: Skinningrove)

The Process of Recovery:

Cleaning up after the floods was described as “*horrendous*”. It was arduous, unhygienic, time-consuming, ‘constant’ and extremely unpleasant, all the more difficult for older people, the disabled and for parents trying to support a young family during a very traumatic time:

F: I had three very stressed out boys that didn't really know when mum and dad were going to visit...we were too busy down 'ere trying to clean the house and I think they thought at first we'd abandoned 'em (Parent: Skinningrove)

Drying out, a necessary precursor to the clean-up operation, was lengthy, expensive and not always fully effective, especially in mobile homes or houses built of old sandstone. The presence of effluent made conditions very much worse; sewage killed plants in the garden,

contaminated children's toys and compromised health, and the "filthy smell" was something that lingered for months and months:

F: It was seven months of hell...I just couldn't stand it any longer (Parent: Skinninggrove).

Several people had infestations of fleas and bugs, others reported fungal growth on fixtures and fittings, and many said their houses simply "never felt the same". There were also instances of conflicting information given by insurance companies and councils. In Ruthin, for example, the council said that floodwaters from the second event were 'clean' though residents said they were the same as those classed as contaminated in the first event.

The process of repair and redecoration was for most people a similar nightmare, especially for those in temporary accommodation, and added to the already considerable trauma of the period. There were countless anecdotes of "dodgy Del-boy builders", unreliable workmen, shoddy workmanship, bumped-up prices, and contractors generally taking advantage of flood victims. People were dismayed, too, by a lack of understanding from some contractors:

M: I felt I was just a customer, it was a job...a building site...but it is my home, I live here and have to put up with this" (Parent: Woking)

F: When you're getting different [people] in, you don't know who to trust (Older Person: Bewdley)

Whilst upset at losing household items, it was frequently the loss of personal belongings that caused the most heartache, things that few people had thought to save: wartime memorabilia; photographs and so forth.

F: I lost all me wedding photographs and that cut me up more than losing me suite. Parent: Skinninggrove)

Replacing furniture was a difficult, stressful and often exhausting task, especially for those who were older or disabled. Several older people were dismayed to find it was not always possible to replace like with like, and self-assembly items caused problems. For people flooded twice (as in Skinninggrove), the chore of replacement was necessary a second time:

F: I said we are looking for a suite and he looked at me funny and said 'don't I know you?'. I said, 'we've been in for three suites in less than a year'. He said, 'Skinninggrove?'. You didn't have to say, people knew (Older Person: Skinninggrove)

Those few participants without the benefit of insurance cover not only faced considerable additional difficulty refurnishing and redecorating their homes; the 'traumatic' emotional burden, too, was reportedly very heavy. Insurance cover undoubtedly served as a 'reassurance' for a great many people, though many said that no amount of payment could compensate for the experience of being flooded.

F: It's still a violation and it's having to disrupt your life...to wait and wait, arguing on the phone for every penny...so it's not all right at all (Single Parent: Ruthin)

Dealing with insurance companies was often a protracted and frustrating experience and reports of customer satisfaction were patchy. A common complaint was having to delay cleaning or drying-out until assessors had made an initial visit; many people felt a 'set procedure' would be helpful, with all companies adopting a similar method. The fact that flood victims were treated differently by their various insurers only added to people's distress, creating unnecessary division in some flooded communities.

Social Capital:

There were numerous tales of family support, especially amongst older flood victims; community support, too, was very widespread and always appreciated, mitigating the trauma of the events, at least in part:

F: I truly wouldn't want to carry on without my [family] (Disabled Older Woman: Bewdley).

F: I've never seen a community pull together like they did...this is worth its weight in gold...regardless of if we have ten more floods, I will not move out of this village (Parent: Skinningrove)

There were also accounts of flood victims helping others before themselves, even though sometimes at a considerable cost to the family concerned. Such pulling together was said to be necessary in Ruthin because there was reportedly so little help from the Council. Community support also offered a means of talking through problems, helping to "get it out of your system"; friends and neighbours did much to help each other both practically and emotionally:

M: After all, we were all in the same boat (New Resident: Bewdley).

Conversely, as in Woking and Iford, it was only those directly affected who helped each other; the wider community was accused of being uncaring (and in some cases unaware) regarding the severe flooding in their vicinity. Where nearly all residents of an area were affected, as in Skinningrove for example, there was "a knock-on effect through the whole community" with everyone responding empathetically and offering practical help. Unfortunately, there were accounts of loss as well as gain. Older people in Skinningrove regretted the fact that several older people had left the village, unable to live with the risk of another flood. Similarly in Woking the majority of housing association tenants appeared to have moved on leaving several houses unoccupied; there was also a sense of division between those who had and had not been flooded.

There was evidence of social support from official sources, too. Many council workers, particularly those involved in the clean-up operations, were praised for their cheerful assistance as were several other Council and Environment Agency officials. Discussion of council involvement produced strong feelings, however, ranging from extreme anger to praise. Frequent criticisms of local authorities at the time included: buck-passing "no-one takes ownership of the problem"; being unable to access information or advice; poor communication and no central point of contact; problems regarding sandbags (poor or delayed provision and no help for older or infirm people); little sympathetic support; and abrupt and unhelpful housing officers.

M: It's like walking through treacle to get somebody to help you (New Resident: Woking)

Opinions of Town and County Councils in the same area sometimes differed. There were differences, too, between responses to one flood event and another, as in Skinningrove for example. For residents of Iford Bridge Park, there was apparently no acknowledgement from the Borough Council during worst flood, but during the second, minor event it was treated “*like the Titanic; it was beyond a joke*”. Some participants were understanding about the difficulties that faced their authority, especially where flooding was completely unexpected (as in Woking) or where there were other severe events to attend to (e.g. Skinningrove). Water companies were heavily criticised, with many tales of buck-passing and unhelpful bureaucracy reported by our participants.

Emotions and Physical Health:

There were numerous accounts of ill-health, both physical and psychological. Physical ailments related to the flood, though generally not long-lasting, were unpleasant. They included: stomach upsets; coughs and chest infections; asthma attacks; kidney infections; sore throats; and skin rashes. Mental and emotional health problems (sleep disturbances; anxiety and panic; extreme anger; and depression) were far more enduring. Whereas emotions ran high during the early days, many said that the aftermath was considerably worse than the event itself; a second flood event caused extreme distress and exhaustion for Skinningrove residents. Several women commented on how badly their husbands had been affected, more so that they were themselves:

F: They're more heartbroken because they work hard for their money...they can't accept that there's nothing they can do about it (Parent: Ruthin)

Many of our participants were very distressed¹² even two years after their experiences; there were instances of men and women alike in tears when recounting their experiences. Several still suffered from long-term depression (some were on medication two years afterwards) and feelings of extreme anxiety, worse in winter months or when weather conditions were bad. It is difficult to overemphasise the adverse and lasting emotional effects of flooding, effects that even now impinge upon daily life and that were common to all our participants, particularly the older groups:

F: The mental strain of it all still lives with everybody (Parent: Woking)

F: It's a constant worry isn't it, you're constantly looking at that river thinking can I go and do me shopping, is the house going to be all right when I get back or isn't it (Older Person: Iford)

Children's reactions to flooding were said to vary. Whereas a few were thought to view the event as an adventure, many younger children were frightened for a long time afterwards and some still badly affected. Most children suffered more during the aftermath of flood rather than during the event itself: some needed psychological help for a long time afterwards; in one case, trust in parents was dented; there were tales of bedwetting and sleep disturbances; some still slept with coats on or near the bed; and there were many tales of children keeping

¹² There were instances of people refusing to join focus groups because of the distressing nature of the topic.

all their toys upstairs in case of a recurrence. Heavy rainfall caused a great many children to “get in a sweat” even two years on:

F: She’s frightened to death if it rains whereas before she’d put her wellies on and splash about...it was fun...Children shouldn’t be frightened of some like that...it’s a natural thing (Parent: Skinninggrove)

Parents confirmed that it was the younger children who appeared the worst affected. As one mother said, “I don’t think it ever leaves them”.

Post Event Flood-related Knowledge, Awareness and Preparedness.

Findings revealed considerable evidence of change between participants’ pre- and post-event levels of knowledge, awareness and preparedness in relation to flood and flood warning. Though many had been unaware at the time of the Autumn 2000 events, almost everyone now knew the meaning of the Environment Agency’s flood warning codes¹³; there were, however, one or two people who admitted ignorance despite their traumatic experiences:

M: To be honest, if you asked me the different grades of flood warning and what they mean, I wouldn’t have the faintest idea. I just know that we get telephone flood warnings...I know there’s flood watch and that’s all (Parent: Woking).

One person justified himself by explaining that he could watch the river from his bedroom window; another said she had “no excuse at all”.

Many people undertook their own ‘flood watch’ routine, not waiting for official flood warnings messages but monitoring watercourses themselves, particularly during heavy rain. Several people appeared to accept that they lived in an area at risk of flood, many agreeing there was little they could do to prevent flood, though they took what action they could to protect possessions and kept important documents upstairs:

F: I don’t want to go through all that again but if it’s going to get in the house, it’s going to get in basically (Parent: Ruthin)

F: There’s no way you can prepare yourself (Single Parent: Ruthin)

7.4 Post-Event Flood Warning Issues.

This section presents findings concerned with participants’ response (or anticipated response) to flood warning in the light of their earlier experiences, and their knowledge and perceptions of current flood warning methods with suggestions for improvements. Findings from the informal evaluation of Environment Agency literature, conducted during focus groups, are also reported here.

7.4.1 Response on Receipt of Flood Warning:

Though there were only a few instances where participants had actually received subsequent flood warnings, findings from all interviews confirmed that knowledge of how to respond effectively appeared to have been greatly enhanced since the events of Autumn 2000. Even children had been “drilled” to know what to do when a warning is issued. Many people said

¹³ Not applicable for Skinninggrove residents however.

their first action now was to save their personal treasures, documents and important items, things such as those all too often lost or irreparably damaged during the first flood:

F: I know exactly where my important papers are, the most important are upstairs in a tin box but the others that I use I know exactly where they are...they would go upstairs... that is your first thought, the important things (Older Person: Bewdley).

M: Pack some bags and all your valuables you take with you for the insurances and everything in case of flood inside. (Older Person: Iford)

For parents and pet-owners, their children and animals were of paramount importance and would be moved to safety as early as possible. There was some evidence, too, that personal comfort now prompted choice of initial action, seen as especially salient for an older woman who had spent an entire night in wet, cold clothes:

F: Get your wellingtons out...and something warm to put on (Older Person: Iford)

7.4.2 Flood Warning Dissemination Methods:

Floodline:

Most people were well acquainted with Floodline and some knew the Floodline quick-dial codes for their area; there were, however, complaints about the time taken to access relevant information. Several people said they relied more on visual monitoring of the watercourse than on Floodline but many used this self-help method in conjunction with other Agency information.

AVM:

Since the events of Autumn 2000, an AVM warning service had been introduced in Woking, Ruthin and Iford Bridge Park, though Skinningrove was not yet designated main river status¹⁴; many people had taken advantage of joining the system and one woman referred to it as her ‘lifesaver’. Several people did not know warnings were available on mobile phones and one flood victim in Woking was angry that he knew nothing at all of the scheme, having received no communications from the Agency.

Receiving an AVM call (immediately identifiable by the “*doodle-doodle sound*”) was described as “*a shocking experience*”, particularly worrying for people away from home and uncertain whether or not they needed to take action. False alarms also caused some anxiety, with thoughts that “*crying wolf*” might lead to complacency; in most cases, however, people said they would prefer to have false alarms than no warning at all. Whilst there was praise for the ‘*businesslike*’ system, some disliked ‘*Metal Mickey’s*’ ‘*panicky*’ tone of voice; others complained of occasional instances of inaccurate information. The quality of information, accurate and timely and preferably with a forecast of peak levels, was considered of paramount importance by all participants and critical for an appropriate warning response. Almost everyone displayed a preference for speaking to a person rather than being limited to an automated warning. Most people expressed trust in the Environment Agency’s warnings and its ability to ‘*get it right*’:

¹⁴ This service is now available for Skinningrove residents.

M: You can bet your bottom dollar it's absolutely precise, so you have a lot of confidence and a lot of trust (New Resident: Bewdley)

There was, however, considerable cynicism amongst Woking groups because of their conviction that flooding on the Hoe Stream was caused by human error:

M: All we want is information on are the gates going to be opened or not (Parent: Woking).

Alternative Warning Systems:

The issue of sirens was raised by groups in two areas: Skinningrove had a siren erected in consultation with the Agency, but residents complained that it could not be heard clearly, “*even in the streets*”, and was therefore a “*waste of money*”. It was described as so ineffectual that they “*would all just sleep through it*”. They felt very strongly that their Beck should be given main river status. Iford residents, all older people, also expressed a desire for a loud siren to act as an adjunct to the voice messaging system, confident that the excellent ‘grapevine’ on this small mobile home park could then alert people to danger:

M: If the Agency was to ring round once saying there's imminent floods that would be enough for us to sound a warning through a siren...it only needs one or two people to hear it...we look after each other (Older Person: Iford)

Suggested Improvements to Flood Warning Services:

Several people suggested improvements to the Agency's warning systems, and an older couple suggested the introduction of an easily identifiable colour-coded warning system for river gauge boards. Key findings here included the quality of automated voice messages, critically important for many people especially for the hard of hearing. Several older people in Iford found difficulty in distinguishing the relevant quick-dial number:

F: I can't hear what they're saying, they say about three or four numbers but I can't recognise what they are...it's a very bad recording (Older Person: Iford)

The use of ‘technical’ terminology was also criticised; at the time of data collection, few Iford participants knew that their stretch of river was designated the Lower Stour and were thus uncertain about the relevance of AVM warnings:

F: We've never been told it's called the Lower Stour, never (Older Person: Iford)

Other participants raised the issue of warnings to rented property, especially where Housing Associations were concerned (apparently not all tenants in one area¹⁵ were receiving AVM warnings and appropriate flood-related information). The possibility of including a link with the Meteorological Office on the Agency's Floodline website was also mooted. The following list summarises participants' suggestions for improvements to flood warnings:

General:

- ensure warning sirens are clearly audible
- ensure flood-prone households are aware of Agency terminology for relevant stretch of watercourse

¹⁵ Woking

- ensure warnings are provided for tenants

AVM

- publicise AVM availability for mobile telephones
- ensure all flood-prone properties contacted
- keep data base updated
- improve clarity of message and quick-dial numbers (especially important for older people)
- need for accurate information
- consider reducing frequency of calls where content of message is unchanged

Floodline

- need for accurate and timely warnings
- provision of person-to-person contact
- inform of ultimate peak level if possible (e.g. River Severn)
- on-line Floodline service to include link to Meteorological Office
- provide on-line links regarding flood literature

7.4.3 Evaluation of Environment Agency Literature:

During the second focus discussion meeting, an informal evaluative exercise was conducted with each group, participants having been issued with a set of printed material at the close of the first meeting. The material under consideration consisted of the four following publications: *Guide to the Flood Warning Codes* with its covering letter; two booklets entitled *Damage Limitation* and *After a Flood*; and a *Flood Warning Information Pack* containing six fact-sheets and a covering letter.

The general consensus was that this material contained helpful information though some felt there was rather “*too much of it*”. There were no criticisms regarding comprehension, clarity, or design. Though some considered the information “*basic*” or “*rather general*”, many described it as “*very useful*”, especially for those new to an area:

M: the more knowledge you have the better (New Resident: Bewdley).

The Guide to Flood Warning Codes, printed on a single red plastic sheet, was deemed “*straightforward*”, giving clear, sufficient and succinct information, and suitable for keeping by the telephone. With the exception of the ‘overly-large’ Flood Warning Information pack, the majority of people found the other printed materials useful and interesting, saying they had in some cases influenced them to take precautionary action. Others commented that much of the literature was more useful after rather than before a flood and many admitted that they had simply “*put it on one side*”. Bewdley residents, most of whom now seemed well aware of what to do in a flood situation, agreed that much of the literature was unnecessary “*once you start getting smart*”, though they acknowledged its usefulness for people less well informed than themselves.

Since this literature had been circulated only after the Autumn 2000 flood events several people saw value in having regular reminders, recognising the risk of information becoming mislaid or forgotten should no flooding recur for several years. Others felt that whatever the type of literature provided, it could do little to help in the immediate aftermath of flood, described as “*a bit like being in the centre of a tornado*”:

M: There's so much going on around you, you don't say 'oh I'm just going to pop upstairs dear and sit down and read a booklet' because you've got a constant stream of people banging at your door...the chemical cleaning man...the builder...the plumber...the electrician (New Resident: Bewdley)

M: We learned from the first flood more than anything that book could tell you (Older Person: Iford)

Participants agreed that they required succinct information, disseminated on a regular basis and easily accessible in a flood situation. The most important thing for most people was to know whether or not they lived in a flood-prone area, followed by information directly relevant to their locality and type of flood event.

Rather than reading literature in isolation, however good that literature may be, our findings confirm that the vast majority of participants would prefer to have a forum where flood victims could tell their stories, exchange information and be given expert advice. There was widespread agreement concerning the importance of having information and practical advice aimed at a local rather than a general level, either disseminated at a public meeting or by someone acting as a flood warden or counsellor: *"somebody to come round...a morale booster"*.

M: What we need is a friendly neighbourhood flood warden (New Resident: Bewdley).

Suggested Improvements to Environment Agency Literature:

The following list summarises the improvements to Agency literature suggested by our participants:

- Simplify and condense information, providing bullet-point summaries for easy reference
- Include local information for individual areas wherever appropriate (eg: extent of flood-prone area; type of flood event likely; type of warning system; exact level of river at which certain areas/houses will flood).
- Publications should be durable rather than *"thin and flimsy"*
- Avoid large-format publications
- Avoid emotive statements
- Ensure that published information is regularly updated
- Supply material appropriate to post-event situations *after* rather than before a flood
- Include advice on cleaning methods suitable for flood-damaged homes
- Include a designated space on the plastic Warning Code Guide for recording numbers of Local Authority, Flood Warden etc (and supply a waterproof pen!)
- Maintain levels of awareness of flood risk and flood warning by regular dissemination of printed material.

7.5 Local Issues:

This section reports the understandings and perceptions of our participants regarding flood related issues at a local level: flood action; flood defence; and flood warden provision.

7.5.1 Flood Related Action at a Local Level:

All interviewees were asked about local flood-related action at a local level in their area: whether or not they knew of any action; their perceptions regarding the extent and usefulness of any such activities; and whether or not they participated in it. It should be noted that it was not within the remit of this research to effect any objective evaluation of local flood groups or their activities; findings are based solely on data collected from discussion groups and individual interviews. The following sites contained flood action groups, formed as a result of the 2000/2001 events: Bewdley; Ruthin: Iford Bridge Park; and Skinningrove. According to our participants, no such group existed in Woking.

There was evidence of considerable inter-site difference regarding local flood-related action although participants were almost unanimous in their expressed recognition for the need for and utility of collective action. In areas where flooding occurred in isolated patches (as in Woking), there were too few homes affected in each area for residents' groups to act; participants here complained that without combined action "*we are banging our heads against a brick wall*". The focus group discussion meetings seemingly gave them the first opportunity to air experiences, concerns and suggestions:

R: Do you think there's anybody out there listening to what you have to say?

M: Definitely not

M: Only you

M: Nobody's been interested enough to ask us anything about it before (New Residents: Woking)

Action groups varied considerably in size (and in the numbers of people they represented), in the purpose and degree of their activities, and in the amount of information they produced. The Bewdley group, a '*bottom-up*' affair, was described unanimously as an invaluable source of knowledge and assistance. It meets weekly even two years after event and produces a regular newsletter delivered to all flood-prone properties; it also holds a database of vulnerable residents. Iford, too, had a very active group that has produced a similar database and a flood warden system that caters for residents of this small site. The Skinningrove group also holds an important body of knowledge and, in collaboration with the Agency and Local Authority, has evolved its own flood warden/warning system for the village. Ruthin's active flood group did not appear to cater for our particular participants; its agenda was said to be the re-routing of a culvert rather than the outcome of surface-water flooding.

Participants were asked whether or not they felt they had a voice in flood-related matters of local importance. Though many people felt that their voices were not being heard, findings do not suggest any particular vulnerability as far as group category is concerned. There appeared to be some commonality across all groups, with people feeling that their concerns were largely ignored by those with the power to bring about improvement. Differences were concerned with area rather than group membership.

Participants in Bewdley were unanimous in praise of their flood group but directed some criticism at the Environment Agency's consultative process; several new residents felt that the Agency had decided upon the flood defence scheme prior to the public meetings and were "leading residents by the nose". Again, Iford residents, an older group, appeared very satisfied with the site flood committee but were extremely critical of their local Council's response to their problems. Findings were similar in Skinningrove although complaints here were directed at the Environment Agency (regarding the lack of main river status for the

Beck), their Water Board and their Local Authority¹⁶. In Ruthin, participants felt they had no voice at all, ignored at both a local and wider level; they felt that ‘the authorities’ had attempted to evade responsibility for surface-water flooding :

F: Nobody’s exactly admitting whose these drains are

F: We’re not asked by people that matter (Parents: Ruthin)

Incentives and Barriers to Participation in Local Flood Action:

The extent to which people were involved in local action varied considerably. In general, older and disabled people tended to be uninvolved (though not necessarily uninterested). Only one participant was on the committee of her local flood action group. She had joined in order to be more prepared for future flooding and “*to know as much as possible about why it happened*”; her subsequent involvement was said to be due to continued interest. Those who had attended local meetings (principally new residents from Bewdley, some Iford and Skinningrove residents, and a few parents from Ruthin) did so because of a need for more information, a desire to share their experiences and to become better prepared in the future. Barriers to involvement included: having no appropriate forum available; age or infirmity; a feeling of “*wanting to get on with life*”; a reluctance to revisit unpleasant emotions; a dislike of going out at night; lack of time; previous adverse experience of community politics; and a belief that nothing would be achieved. A tendency to regard involvement in local action as pointless was common amongst those who felt their opinions were unheard.

Interestingly, the focus group meetings themselves may have prompted participants to become more proactive. During informal discussion between the two meetings, the Woking parents’ group, agreed that they had done “*absolutely nothing*” to discover what was locally available to help prepare for future flood, something they found shocking in the light of their experiences and which they planned to rectify.

Flood Wardens:

At the time of data collection, no site had an official flood warden although Iford and Skinningrove had local residents who fulfilled that role. There was considerable evidence from all groups to suggest that provision of flood wardens (or similar) would be immensely useful and reassuring, serving to give people a “*safety net...some peace of mind*”. Consistency with regard to this role was seen as very important:

M: somebody that was responsible in the council that you always go to if you’ve got a problem, that will always bring out the information and tell you what’s happening...with a lot of different areas in the borough affected, then a flood warden would seem to be the answer” (New Resident: Woking)

Suggested responsibilities included: assisting with flood warnings if appropriate; developing networks; the collection and maintenance of a body of local knowledge; acting as a central information point; preventative tasks (checking drainage systems etc.); assessing local vulnerability and compiling a suitable database; offering support and reassurance particularly in the aftermath of flood.

¹⁶ Participants believed that the effect of flooding is aggravated by the infilling of an existing sea wall and the alteration of the Beck’s course; this was done without consultation with local residents.

Flood Defences:

In each site, there was almost unanimous agreement that some type of flood barrier was a necessary and important line of defence:

M: In the end, prevention is always better than cure (Older Person: Iford)

In the three sites (Bewdley, Skinningrove and Ruthin) where some type of barrier had been installed since the Autumn 2000 events, people talked of “*sleeping easier*”, feeling somewhat less at risk even though defences were usually only partial or as yet incomplete. Even with flood defences in place, however, people still checked watercourses during rainy weather or accessed Floodline to check the Agency information. The Environment Agency came in for praise for its defences in Ruthin, but Skinningrove residents were critical, despite the introduction of a partial defence, because they have not been given main river status. A considerable degree of cynicism was displayed by Woking participants regarding delays to flood protection; since they perceived the flood event to be due to an error, their understanding was that the Council would be unlikely to spend money here:

M: why spend millions and millions of pounds on flood defences...when all they've got to do is just say to Guildford, 'you ain't going to open them gates' (New Resident: Woking)

7.6 Perceptions regarding Causes of Flooding:

Participants were asked to give their own views with regard to what they believed to be the causes of flooding; findings are briefly summarised here. Perceptions fell into two broad categories: local issues in force at the time of the Autumn 2000 events; and wider issues implicated in both local and global flooding. Here again, findings do not relate to any particular category of vulnerability but show commonality across all groups.

Local issues raised by interviewees focused on human action (or inaction). Groups in Woking and Iford expressed a belief that human error (the opening of floodgates) was largely responsible for their flood events. Other commonly held perceptions centered on: poor maintenance of drainage systems (Ruthin; Woking; Bewdley); declining standards in land management (Skinningrove); decline in and changes to water management (Skinningrove); declining standards of river maintenance (Iford; Woking; Bewdley); ignoring local knowledge (Skinningrove's 'sea-defence'); and building on up-stream floodplains (Iford). Participants were particularly angered by what they saw as “*buck-passing*” between water boards and local authorities; there were many such instances reported.

As for wider issues, findings show that all groups believed changing weather patterns to be partly responsible for increases in local and global flooding. Global warming and climate change were implicated by many people, with changes in seasons and animal/plant behaviours cited as evidence, though a few participants believed this global warming was merely a product of media hype.

The development of floodplains, the built environment, modern agricultural methods, and poor land and water management were also highlighted by all categories. In some cases, Local Authorities were criticised for planning decisions, reportedly ignoring Environment Agency advice and overriding public concerns. In one of the New Residents' groups (Bewdley), participants pointed to globalisation, industrialisation, consumerism and population increase, all of which were said to contribute to global pollution and climate

change. Most people were aware of pollution and many said they tried to “do their bit” at an individual level by recycling, reducing car use or using less energy or water. One man commented the his experience of being flooded had caused a considerable change in his behaviour and possessions:

M: I've become far more aware...I don't want to re-clutter the place like it was before...you tend to be more conscious of what you're keeping and how valuable it really is (Parent: Woking).

Despite the serious flood events of Autumn 2000, many of our participants were very conscious that lessons to do not always seem to have been learned. There was a widespread belief that unless something is done to halt further development of at-risk areas the problems of severe flooding could only worsen, with devastating and costly results for an increasing number of people.

8. CONCLUSIONS

This final section provides an overview of findings from both phases of the qualitative study. For clarity, it addresses each of the key research questions in turn and is presented in two parts. Section 8.1 focuses on findings from key informant interviews undertaken during Phase One, findings that were used to inform the second phase. Section 8.2 discusses the principal findings from the focus group discussions and individual interviews conducted during Phase Two.

The aims of the qualitative component of the research project were twofold: to provide a detailed understanding of whether some groups within the population are particularly vulnerable to floods and, if so, to explain why this is the case; to develop recommendations for improving the content of and dissemination of flood warnings for these groups. The concept of vulnerability was addressed in three distinct ways: in terms of certain groups being less likely than others to be aware of flood risk; in terms of certain groups being less able than others to respond to flood warnings; and in terms of certain groups being more vulnerable than others during the experience of flood event and its aftermath.

8.1 Vulnerability as identified by Key Informants

The first phase of the study utilised data from key informants to establish various categories of vulnerability in terms of flood warning and flood event. Many of the categories mentioned by our key informants are well known, supported by findings reported in the published literature or those of the secondary analysis conducted as part of this research project.¹⁷ In addition, two categories of vulnerability emerged that had not previously been highlighted: young carers of sick or disabled parents; and relief workers. This latter group included those who dealt with flood victims during the worst of the flood events as well as management staff who were concerned for their subordinates' well-being. Further research is suggested to establish the needs of these newly identified groups.

8.1.1 Vulnerability with regard to Reception of and Ability to Respond to Flood Warning

Our informants considered the following groups to be vulnerable in terms of receiving warnings: minority ethnic groups, especially where English was not the first language; older people who were confused; people with mental illness; people with hearing impairment; and those suffering physical illness or disability. Low levels of education were also highlighted as a factor that might prevent people from understanding and reacting appropriately to flood warning.

Vulnerability with regard to appropriate flood warning response embraced those categories mentioned above but also included: all types of disability and impairment, whether physical or mental; families with young children; older people, particularly those who are frail; and people new to an area or not previously flooded. People living alone were also reported as being particularly vulnerable, whatever their age; this category included single parents with dependent children. Single householders were said to be even more at risk where there was no local network of family or friends.

¹⁷ See companion reports: R & D Projects W5C-018/1 and W5C-018/2

8.1.2 Vulnerability to Flood Event

Although more than one informant suggested that “*everybody is vulnerable in a flood situation*”, there was a general consensus that the following groups were particularly vulnerable in terms of coping with flood event and its aftermath: older people, particularly the frail or confused older person; families with young children, especially lone parents; minority ethnic households (though it is important to mention that the research sites covered only one such group¹⁸); households containing physically or learning disabled people, and those with limiting, long-term illness; people with visual or hearing impairment; young carers of disabled or ill parents; people with low levels of resources (financial; psychological; and social); people who live alone; residents of mobile homes or caravans; residents of old people’s homes; residents who were relatively new to an area; and short-term tenants (i.e. those resident for less than one year).

Findings support the body of literature that suggests it is the already vulnerable who are also particularly at risk in terms of reacting appropriately to flood warning and suffering from the impact of flood. Key informant data support the notion that actual levels of loss (which may be small) are greatly increased where there is an inability to make good those losses or to maintain or restore acceptable living conditions.

Other categories of vulnerability included the small group of affluent home owners who, fearing burglary, refused to leave their properties thus putting themselves at unnecessary risk from flood-waters. Complacency resulting from the presence of flood defences constituted an additional, though rarely mentioned, vulnerability. It was widely accepted that prior experience of flooding, though reported by some informants as having a debilitating psychological effect, appeared to give some degree of protection by enhancing knowledge levels and relevant coping skills; our findings also bear out the fact that the probability of risk (i.e. flooding) is frequently underestimated.

It is important to note that the categories mentioned above are far from homogenous. Not all older people, for example were reported as having particular difficulties; in fact many of them were considered to have coped remarkably well with the events of Autumn 2000, displaying an admirable stoicism and ‘wartime spirit’. Our findings also confirm that the groups one might have expected to be the most vulnerable in an emergency situation (disabled people, for example) were often well served because of being known to and protected by Social Services or similar organisation.

8.1.3 The Importance of a Local Approach

Findings from this key informant stage also highlighted the importance of considering local issues, retaining or reinstating local action as appropriate, and encouraging and utilising an often invaluable fund of local knowledge. Such information was considered of paramount importance in assessing (and accessing) vulnerability at a local level as was the need to tailor warning systems according to geographic conditions and the needs of the local community.

8.2 Focus Group Discussions and Individual Interviews with Members of Vulnerable Categories.

Informed by the research findings from the earlier phase, four categories of particular vulnerability formed the focal point of the second stage of the study: older people; parents

¹⁸ Asian people in Stockbridge

with young children; new residents; and disabled people. The principal aims of this phase were to answer our research questions using data from flood victims themselves.

8.2.1 Understanding Levels of Awareness with regard to Flood Risk

Levels of flood-risk awareness were examined with regard both to participants' local areas and to their own homes. We found some surprising variations in levels of local area awareness; whereas new residents might have been expected to be less aware than other groups, findings revealed no clear evidence of any systematic category variation. This may, at least in part, be due to the difficulties of definition; in this research, 'new' residents were defined by using length of property ownership as a criterion (in line with BMRB survey research) whereas we found that many in these groups had prior knowledge of their locality, some even having lived in the area beforehand. Where residents were completely new to an area, as in the case of some older people from Iford Park where several 'inlanders' had moved to a riverine locality, there was a marked absence of flood-risk awareness. The differences that emerged here were between areas and between the two groups of new residents, differences that can best be understood by considering the flood history of the local area. In places where there had been several instances of severe flooding and its history had become part of local lore, (as in Bewdley), we found high levels of awareness; where local flooding was unknown or very minor (Skinningrove and Woking, for example), levels were extremely low. It appears therefore that knowledge of local flood history constitutes a type of prior experience (albeit not first-hand) which serves to protect residents by raising their awareness of local flood risk.

As for awareness concerning risk to property, here again there was no evidence of variation between categories of vulnerability. The data clearly show that very few people believed their homes to be at risk of flooding prior to the events of Autumn 2000, regardless of the flood history of their particular area and whether or not they were newly resident there. For the majority, these perceptions were grounded in ignorance: some participants considered their area free from any risk of flood; some saw their local watercourse as a '*stream*' or a '*lovely thing for fishing*', knowing nothing at all of its potential for flooding; some were ignorant because a considerable time had elapsed between severe flood events (legal searches for house purchases seldom cover more than twenty years' history; neighbours or family members failed to pass on relevant information, if indeed they ever knew or remembered it). Many in the new residents' groups were sufficiently cautious to have sought flood history information before purchasing their homes, but had been led to believe all was well.

In the single instance where a householder was fully aware that her property was at risk, this disabled older woman had a life-long knowledge of Bewdley flood events and accepted the risk with equanimity, possibly due to the fact that the long lead time allowed her family to remove her before flooding occurred. In those few other cases where participants were aware of flood-risk in their immediate vicinity, Bewdley being the prime example, with very few exceptions they appeared to see their own homes as inviolate, believing that '*it won't happen to us*'. Where previous local flooding was known to have occurred, the 'usual' flood characteristics often appeared to have engendered a desensitised attitude towards risk (at least as far as their own property was concerned): for some, this was because they believed flooding was confined to other parts of the town; for others because their property was '*far from the river*' or because regular but minor flooding had led to a state of complacency. Skinningrove residents saw any possible risk as coming from tidal rather than fluvial flood. Confusion over terminology used in describing flood risk probability (e.g. 1 in 50 years) only compounded the problem.

It is these underlying factors, found to be common across all categories of vulnerability, that best explain the very low levels of pre-event flood risk awareness. With almost no-one having had prior experience of flood event, there was all too often a state of local ignorance that resulted in people being unaware of risk. This lack of awareness in its turn was largely responsible for a widespread lack of preparedness. Most participants were completely unprepared for the events of Autumn 2000:

F: I think ...that you have no concept...you only have concepts like this when it's happened to you, you've actually experienced it (New Resident: Bewdley).

8.2.2 Understanding Ability to Respond to Flood Warning

Vulnerability in terms of flood warning response during the events of Autumn 2000 was addressed by examining two specific issues: awareness of flood warning; and ability to respond. As previously mentioned, there were considerable inter-site differences regarding warning of impending flood with all but one area receiving no official flood warning; apart from Bewdley participants, very few people were aware of flood warnings and their means of dissemination. This research cannot therefore constitute a full or fair evaluation of Environment Agency warning systems extant at the time, nor can it put forward useful evidence regarding general levels of flood warning awareness.

We then examined the data for evidence of particular groups that were less able than others to respond flood warnings and found some support for the existence of vulnerable categories. People in older groups, many of whom were frail, reportedly displayed high levels of fear and anxiety, especially if alone at the time; in many cases, their reduced physical capacity impeded appropriate action or escape. The majority of disabled people, the older participants in particular, reported similar difficulties. Parents with young children, especially single parents or those alone at the time, were hampered by the presence of youngsters as well as by their feelings of responsibility and fear. Here again, caveats concerning the heterogeneity of our groups should be noted.

Vulnerability in terms of warning response may, however, be better understood by looking at factors common amongst all categories. Findings reveal that appropriate response was hindered by disbelief, by shock or panic, by high levels of fear and by a dearth of relevant knowledge or information. Communication with Councils and with the Agency was sometimes very poor (this was particularly evident in Woking groups) and many people simply did not know how best to save their property and possessions. A sufficient knowledge and awareness would appear to be of key importance in enabling effective action following receipt of flood warning.

Other findings that helped to explain poor response focused on characteristics of the property in question or of the flood event itself: single storey or mobile homes; old sandstone properties; small properties with little available space; darkness; adverse weather conditions; and a lack of time in which to act.

8.2.3 Understanding Particular Difficulties Experiences with regard to Flood Event and its Aftermath

Once again, although no category can be classed as homogeneous, we found evidence for particular vulnerabilities amongst older people, parents with young children; residents of mobile homes; and disabled people. There was, as might be expected, evidence to show that

these groups are especially vulnerable both during and after flood event. Appropriate action during flood event was rendered the more difficult by reduced physical capacity, by inadequate space and flimsy building materials, by high levels of fear and anxiety issues or by responsibilities for those less able to fend for themselves during an emergency situation. Post-event issues concerning accommodation and recovery were again highlighted as posing considerable problems for people in these categories: large families were sometimes separated; older or disabled people were often reluctant to leave their homes and sometimes temporarily re-housed in unsuitable accommodation; cleaning, overseeing repairs, and replacing household possessions placed additional stressors on these already vulnerable people.

This evidence, whilst supporting the body of published literature, does not, however, tell the whole story. We found that many of the determinants that exacerbated vulnerability in the groups mentioned above were also common amongst participants of other groups. There were, for example, several common factors that heightened vulnerability during flood event: shock, fear and panic; being alone; responsibility for young children, for older neighbours or for pets; characteristics of the flood event (darkness; speed or force of floodwaters); and lack of information or advice. This latter finding was notable in explaining vulnerability to flood event in all our groups. Similarly, post-impact vulnerability was worsened by the need for temporary accommodation, especially where it was unsuitable or long-term. Many people were fearful for the possessions that remained in their empty houses; the process of repair and redecoration was difficult for those away from home. Conflicting or inadequate advice caused additional problems, as did delays caused by dealings with insurance assessors.

Though buffered to some degree by the ‘*wonderful*’ community spirit that emerged in these flood areas, the degree of long term psychological distress reported by almost all our participants cannot be overemphasised. There was a considerable amount of anger and distrust concerning what was seen as a lack of accountability in areas where flooding was perceived as resulting from human error, but anxiety levels were high in all groups regardless of circumstance:

“the mental strain of it still lives with everybody” (Parent: Woking)

“it’s a constant worry...looking at that river thinking can I go to work, can I go and do me shopping” (Older Person: Iford)

As noted in the published literature, an understanding of human vulnerability to natural hazard must look beyond simple, stable typologies (demographic factors being an example) to include the wider, dynamic context. Our findings support the notion that temporal, spatial and socio-economic factors play a vital role in determining and shaping vulnerability. The presence (or absence) of strong community networks, for example, affected the way our participants coped with flooding and its aftermath. We found, too, that in certain cases post-event community changes had generated new conditions of vulnerability (damage to homes, livelihoods, social networks, and people moving away from the area). Those with insufficient access to resources, information and knowledge were, regardless of category membership, found to be particularly vulnerable in at all stages of the Autumn 2000 flood events.

This latter finding supports the notion that prior experience and information (whether first- or second-hand) are of paramount importance in raising levels of flood-related knowledge, awareness and preparedness. We found considerable evidence for post-event increases in:

awareness of flood warning systems, codes and methods of dissemination; awareness (and in some cases acceptance) of flood risk to local area and property; and levels of preparedness. The question remains, however, as to how these may be augmented with the need to undergo the trauma of flood experience.

9. Suggested Recommendations

This section provides suggested recommendations for practice and advice arising from findings from key informant and focus group interviews contained within this report. The principal issues covered include: improving levels of knowledge, awareness and preparedness with regard to flood and flood warning; communication networks; accountability; local knowledge; and the provision of flood wardens.

Suggestions are grouped under four headings: General Recommendations; Before Flooding Occurs; Immediately Prior to Anticipated Flood Events; and Post-event. There is inevitably some overlap between the various sections, but for the sake of clarity, recommendations are repeated as necessary.

9.1 General Recommendations

The following recommendations focus on the needs expressed by our interviewees for better communications, for improved accountability and for the provision of flood wardens.

Under the heading of communication networks, our findings identified the necessity for some way of recording vulnerability within areas at risk of flood in order to meet the needs of those requiring special help. Some Social Services departments, though not all, do hold databases for disabled people, special needs groups and so forth, but these are not all-inclusive with regard to natural hazard needs. Issues of practicality, sensitivity and confidentiality are appreciated; for example, not all vulnerable individuals may wish to be listed as such. It is recommended that lists of vulnerability be held by local flood groups or flood wardens rather than by local government, and that individuals be invited to opt in to such a scheme in order to satisfy ethical issues.

9.1.1. Communication Networks

- Ensure that the Environment Agency answers all communications from the general public
- Address the need for joined-up thinking (between the Agency and local councils in particular)
- Ensure that a clearly defined and appropriate strategy exists for each locality, taking account of local knowledge
- Encourage inter-area links for the purposes of information exchange
- Encourage the provision of a vulnerable persons 'database' in each area (see comments above)
- Encourage bottom-up consultation prior to provision of flood defences etc., taking account of local knowledge and circumstances
- Improve links with:
 - Local radio and television
 - Local flood groups
 - Police (fear of crime etc.)
 - Insurers (regarding a uniform procedure in response to flood)

9.1.2 Accountability

Interviewees reported a need for trust and credibility with regard to the Environment Agency, Local Authorities and water boards, especially in cases where they believed that their flood

event might involve a degree of human error. In order to meet these needs, the following suggestions are posited:

- clarify responsibilities and accountability
- ensure a clear delineation between water boards, Environment Agency and Local Authorities etc
- promote honest disclosure
- make provision for public meetings

9.1.3 Flood Warden Provision

In all our research areas, findings from key informant interviews and focus group participants confirm that a flood warden or similar was unanimously seen as desirable. It was widely believed that a warden would serve as a much-needed central point for flood-related information as well as a providing ‘peace of mind’ for local residents. Where no such warden exists, it was suggested that local councils might be encouraged to fill the role. Based on these findings, the key tasks for flood wardens could include:

- the assessment of vulnerability and compilation of ‘database’
- developing networks
- encouraging preventative action (e.g. cleaning of drains)
- acting as central point for collection and dissemination of relevant information
- providing support for those affected by flood

9.2 Before Flooding Occurs

This section deals with recommendations pertinent to those periods where there is little likelihood of flood event. It covers the enhancement of levels of awareness, knowledge and preparedness regarding flood warning and flood event amongst the at-risk public, and makes recommendations for improving and reinforcing the Agency’s flood warning messages.

9.2.1 Improving levels of public awareness, knowledge and preparedness

Findings reveal a clear need for improving levels of public awareness with regard to flood risk, especially for residents new to an area or in places where the risk of flood is low. In order to do this, it is suggested that the Agency should:

- Clarify risk terminology (e.g. 1 in 50 years)
- Educate regarding ‘unexpected’ nature of flooding
- Inform those in flood-prone areas, especially where risk is very low
- Lobby for full flood history of property to be made available to prospective purchasers

In addition, our research identified a widespread lack of knowledge with regard to appropriate action during flood events which in turn results in low levels of preparedness. Participants expressed a need for information on how best to act, with particular focus on issues of safety both during and immediately after a flood. The following list summarises key recommendations for improving knowledge and preparedness amongst the at-risk public:

- Educate with regard to types of flooding, force and speed of waters
- Inform with regard to building characteristics (resistance; porosity of brick; fabric of mobile homes etc.)
- Advise on appropriate action/ saving pets/how to move furniture etc.
- Advise on electricity/gas supplies and appropriate action

- Warn regarding risk of con-men etc who may be active following flood event
- Body of local knowledge very useful; encourage collection of same and advise where this can be accessed (consider using local council as central point)

9.2.2 Flood Warning Issues

The findings that inform these recommendations are drawn from focus group interviews which included an informal evaluation of printed material provided by the Environment Agency. General recommendations regarding flood warning issues are as follows:

- reinforce Flood Warning codes
- educate concerning the provision of flood warnings in local area
- educate public with regard to ‘unexpected’ nature of flooding
- educate public with regard to river levels
- consider public meetings as an appropriate forum
- establish links with local radio and television
- reinforce links with Local Authorities etc

In addition, certain recommendations are made that are specific to the following means of disseminating Environment Agency flood-related information: AVM; Floodline; and printed material:

AVM

- publicise AVM availability for mobile telephones
- ensure all flood-prone properties contacted
- improve clarity of message (difficult for older people to hear)
- keep database updated

Floodline

- provision of person-to-person contact
- on-line Floodline pages to include link to Meteorological Office
- provide on-line links to relevant literature

Printed Material

Recommendations here focus upon both the format and content of material and upon dissemination practices. The inclusion of locally relevant information, and a move away from the sole use of general and centrally disseminated literature, is considered of key importance.

Format

- Avoid ‘thin and flimsy’ publications
- Use small and compact format (A4 too large)
- Use bullet points where possible
- Allow space for insertion of important contact numbers on ‘red’ sheet (provide waterproof pen?)

Content

- Incorporate local knowledge and disseminate appropriately
- Avoid using only general information (use local Environment Agency offices)
- Avoid use of emotional ‘victim’ statements

- Keep information brief and simple (avoid overstatement)
- Incorporate health related information (e.g. need for anti-tetanus injections)
- Incorporate information on cleaning (especially for contaminated waters)

Dissemination

- Ensure information is up to date
- Encourage proactive dissemination
- Issue regular reminders to maintain awareness
- Disseminate situation-specific information at appropriate times (e.g. flood-damage information post-event only)

9.3 Immediately Prior to Anticipated Flood Events

This section covers recommendations that apply to those periods immediately preceding anticipated flood events. Here again, they are informed by findings from key informant and focus group interviews, including the informal evaluation of Agency material. Three general recommendations are made:

- reinforce points regarding flood warning issues (see above)
- ensure links with local radio and television
- ensure links with Local Authorities etc.

In addition, there are certain recommendations specific to the following means of disseminating Environment Agency flood-related information: AVM; Floodline; and printed material:

AVM

- consider reducing frequency of calls where message is unchanged

Floodline

- issue accurate and timely warnings
- supply information regarding ultimate peak level if possible
- provision of person-to-person contact

Printed Material

- Ensure information is up to date
- Issue regular reminders to maintain awareness

9.4 After a Flood Event

This final section contains recommendations under three headings, all of which apply to the post-event period: social issues; local action; and printed material.

Social Issues

The findings contained within this report reinforce the fact that people affected by flooding demonstrate a need for information, advice and reassurance as well as a desire to make their voices heard. In areas where flooding has been patchy (as in Woking, for example), the need for voices to be heard is particularly important. It is suggested that the Environment Agency can play a part in mitigating the traumatic effects of flood event by doing the following:

- hold local public meetings to explain causality, provide reassurance, advice and information, and to hear local voices.
- lobby for provision of psychological help where appropriate
- encourage provision of support groups
- liaise with schools and GPs as appropriate
- encourage and maintain joined-up thinking (e.g. between Agency and local councils)

In addition, it is recommended that locally relevant knowledge be recorded so that any lessons learned from a flood event are incorporated into future strategic planning. An important part of this is the collection and maintenance of recorded information regarding local vulnerability (see comment in Section 9.1 above).

- ensure local knowledge/flood strategy is updated
- ensure information on vulnerability is updated

Local Action

It is suggested that the Environment Agency fosters the inception of local flood groups wherever possible and that liaison with existing local flood groups be encouraged and maintained. Such groups can act to provide the following:

- a body of local flood knowledge
- a central point for advice/information
- a vulnerable persons 'database'
- a social support network for flood affected people
- local newsletters etc.
- a medium for Environment Agency messages

Printed Material

Finally, it is recommended that printed materials be revised and updated as necessary in the light of any recent flood events. It is also suggested that information relevant to the recovery period be made available only at the appropriate time. In brief, recommendations here are as follows:

- Incorporate any new local knowledge and disseminate appropriately
- Ensure information is updated
- Disseminate post-event information only after a flood event

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Appendix One

INTERVIEW GUIDE FOR KEY INFORMANTS – PHASE ONE

1 Roles and Experience in relation to Flood Events

- Their role (and/or that of their organisation) in flood warning dissemination
- Their role (and/or that of their organisation) in flood management
- Their experience (and/or that of their organisation) during the Autumn 2000 floods.
- Ease/difficulties of communication with other Agencies/the public/flood victims
- Emergency Reception Centres (and associated problems)
- Social capital/community co-operation

2 Vulnerability in relation to Flood and Flood Warning

- The informant's definition/understanding of "vulnerability" in relation to flood/disaster
- Knowledge of vulnerable groups in their area
- Assessing/identifying/managing flood-related vulnerability (databases?)
- Their experience of talking to/working with vulnerable groups
- Differential impact of flood events on various groups
- Inclusion of vulnerability variables identified by secondary analysis

3 Snowballing

- Knowledge of other relevant research
- Other contacts for key informant interviews
- How best to contact members of vulnerable groups

4 Research Interest

- Areas of interest to informant/informant's organisation in our project (i.e. increasing the relevance of our research).

Appendix Two

FOCUS GROUP TOPIC GUIDE - PHASE TWO

Focus Group No: 1 – Flood Event Issues and Local Participation.

Housekeeping Issues

- Welcome and thank for attending.
- Introduce research; explain coverage of both meetings
- Explain reasons for tape recording and ask permission to record
- Assure anonymity
- Defer any questions until the end

Group Introductions and Demographic Information

Ask participants to introduce themselves. Ask about:

- Accommodation: where they live; how long they have lived there; type of accommodation
- Household: make-up of household; dependants (inc sick or disabled)

Prior Experience of Flooding (pre-Autumn 2000)

- Any previous experience of flooding before Autumn 2000 (details in brief, focus on warnings if any)
- Any friends or family previously flooded (own involvement)

Awareness of Flood Risk

- Did they know they lived in a flood risk area (how; probe new owners)
- Knowledge of Indicative Flood Plain? (how)
- Perception of own risk of being flooded (probe why if no acceptance of risk)

Awareness of Flood Warning Scheme

- Is there a scheme in their area? (who responsible; how disseminated; why not)
- Knowledge of Floodline? (how; show literature)

Experience of Flooding in Autumn 2000

(give brief details of dates etc to preclude long explanations)

a) Warning period

- How learnt of flood (any warning; type of warning; how delivered; if none, why not; who responsible; what preferred; self-help)
- Was warning appropriate (in nature; timing etc; why not; what preferred; self-help; how improve)
- Actions taken on receipt of warning (including barriers to action; preferred actions etc; who acted; help given/needed; who responsible; what preferred; how improve)
- Do they have particular problems in responding to flood warning that are worse than those of other people? (explore social networks/levels of support)

b) Immediate aftermath

- Evacuation (who responsible; where; how got there; problems; how improve)
- Reception Centre (attended; why not; how long; experience of; good/bad; how improve; who responsible; transport issues)
- Flood-related information (how and what delivered; appropriateness; what preferred; problems; who responsible; how improve)
- Perceptions re own role during this period (explore feelings of control vs helplessness/changes from normal role/also explore feelings of anxiety etc)
- Safety issues (utilities; sewerage; flood waters; loose furniture; type of housing stock; own mobility/health/age etc; who responsible for help; what type of help needed)
- Fear of Crime (looting; street lighting; policing; self-help)

c) Long term effects of flooding

- Housing issues (how long away from home; where stayed; delays? who responsible; how improve)
- Health issues (try to keep brief)
- Do they have particular problems in coping with aftermath of flooding which are worse than those of other people?

Social Capital

- Explore ways in which community/neighbours did/did not pull together during flood period; why? Has this continued; were certain people excluded? why?
- Satisfaction with Local Authorities/Emergency Services/Voluntary Sector

Community Action and Participation Pre-/Post-Flooding

- Awareness of any local flood action/residents groups (what do they do; when formed; what achieved; perceived effectiveness/usefulness; how informed)
- Membership of/participation in local flood action/residents groups (how became involved (explore motivators/facilitators to participation); if not, why not (explore barriers to participation))
- Do you feel that you know about the flood-related information/groups/organisations that exist in your area? (how get information? From friends/family/neighbours? local paper? other ways -posters, flyers etc? If no - what kind of information is preferred?)

Participation

- Do you feel that you have a say in what happens around here?
- about what issues ? in what arenas/how (i.e. via LA/housing association consultation, as member of an organisation, individually)? if not, why not?

THANK & CLOSE – briefly summarise discussion, and things that might have come up but no-one has mentioned – can we assume that they're not important? Check we haven't missed anything. **Disseminate** Agency Literature for reading prior to next meeting – explain we are seeking their views and suggestions

Check everyone clear about time and place of next meeting, transport to group and remind re payment at end of next group meeting.

Focus Group No: 2 - Flood Warning Literature and Local Issues

1 FLOOD WARNING ISSUES AND EVALUATION EXERCISE

- Ask specifically about flood warning – how and what is received
- What actions taken – would like to take – barriers to action?
- How could these be improved?
- Show EA Flood Literature Material –received? Where from?
- Evaluate/invite suggestions for improvement

2 LOCAL PARTICIPATION

- Have you ever been involved in any local activity to try to improve your local environment - details? e.g: participating in consultation about local developments? opposing planned new developments or complaining about existing problems
- If yes - why did you get involved? what was it like being involved? Did you think it was worthwhile?
- If you haven't been involved in anything like that -why not? (try to get at barriers to participation)
- What sorts of things do you think you might get involved in /what would encourage you to get involved ? (try to get at motivators for participation)
- Can you think of any other things that ordinary people can do around here to lessen the impact of flooding in the future?(sandbags, flood gates, moving furniture upstairs etc). Do you do any of these? Why – why not?

3 CAUSES OF FLOODING

- Briefly explore views re causality of flood event (allow for views on local, national and global causes to be raised if appropriate)
- Explore individual action re mitigating possible causes of flood

Briefly summarise what's been discussed, and things that you thought might have come up but which no-one has mentioned – can we assume that they are not important? Check that we haven't missed anything.

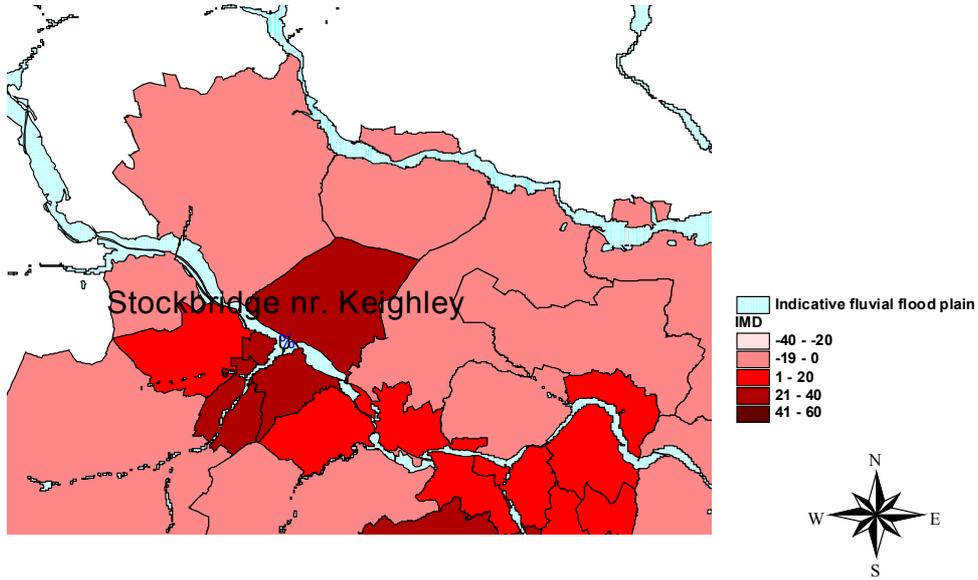
THANK AND CLOSE AND PAY

Appendix Three

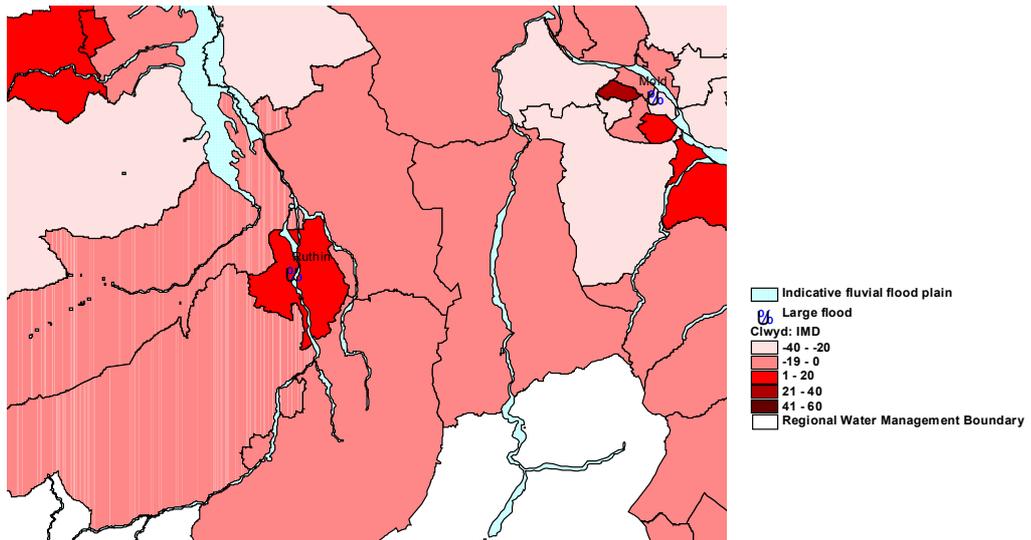
Sample sites



North East: Stockbridge nr Keighley

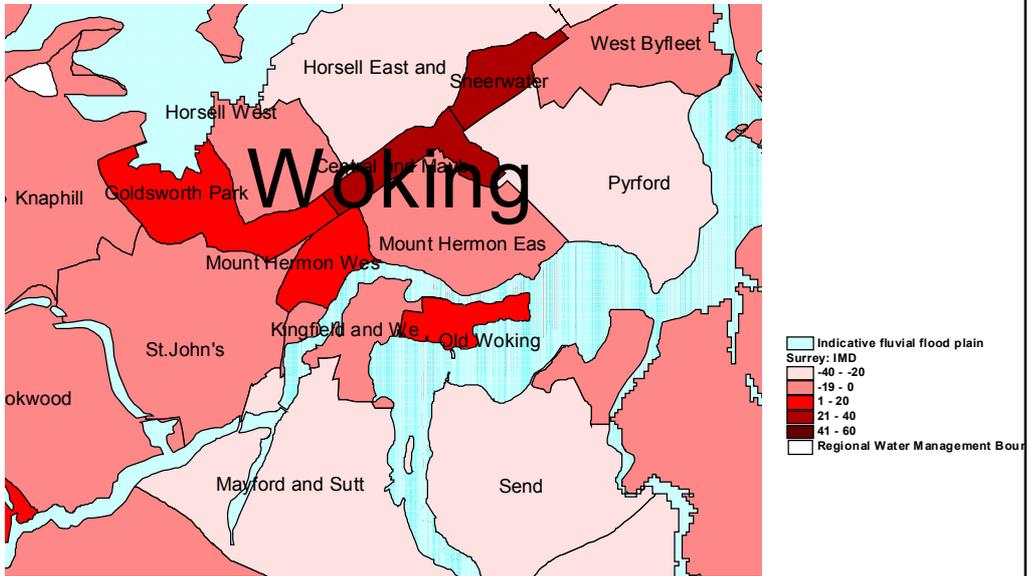


Wales EA: Ruthin



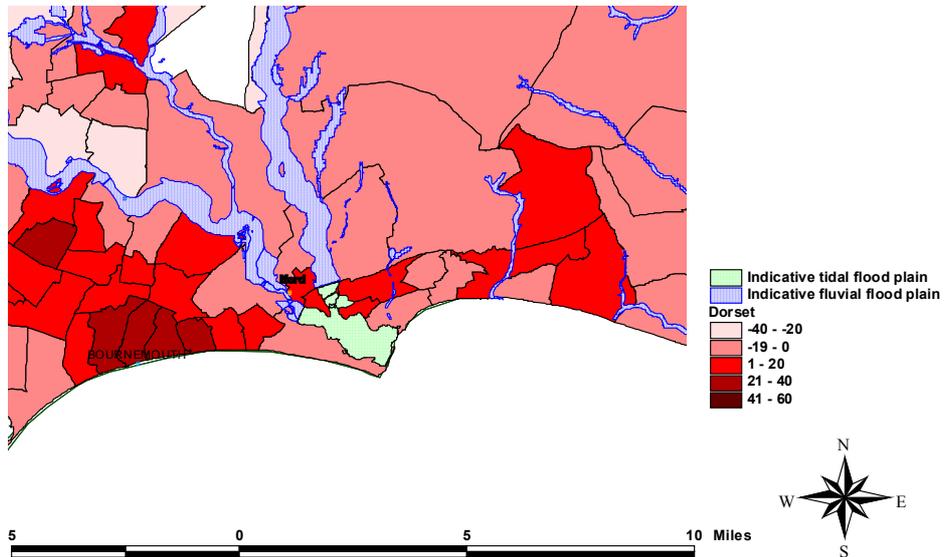
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Thames: Woking

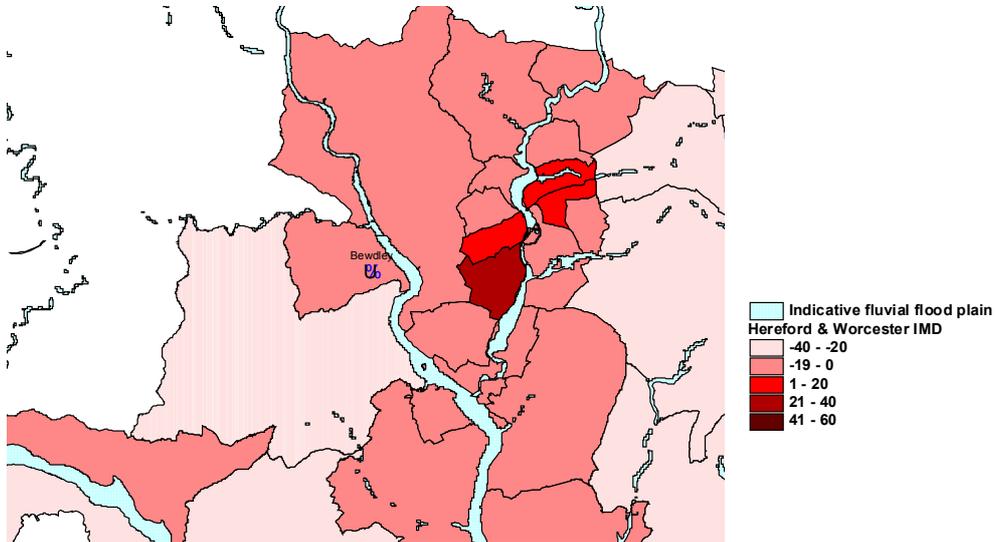


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South West EA- Iford



Midlands Region: Bewdley



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North East: Skinningrove

