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RESEARCH

# **SOCIAL RESEARCH ON FLOODS IN THE HAWKESBURY NEPEAN VALLEY**

**Qualitative Research Report**

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Disclaimer: This project was conducted in accordance with AS: ISO20252:2012, the international quality standard for social and market research, to which Newgate Research is accredited. In preparing this report we have presented and interpreted information that we believe to be relevant for completing the agreed task in a professional manner. It is important to understand that we have sought to ensure the accuracy of all the information incorporated into this report. Where we have made assumptions as a part of interpreting the data incorporated in this report, we have sought to make those assumptions clear. Similarly, we have sought to make clear where we are expressing our professional opinion rather than reporting findings. Please ensure that you take these assumptions into account when using this report as the basis for any decision-making. Note that the qualitative findings included throughout this report should not be considered statistically representative and cannot be extrapolated to the general population.

# INTRODUCTION

Newgate Research was commissioned to conduct social research in the Hawkesbury Nepean Valley, to inform the development of a community engagement and communications strategy aimed at building the community's resilience and suitability of response to flooding. This research report reflects the results of the qualitative research only and readers should refer to the separate report on the quantitative survey conducted as part of the research, which includes the full social research executive summary and recommendations.

## OBJECTIVES

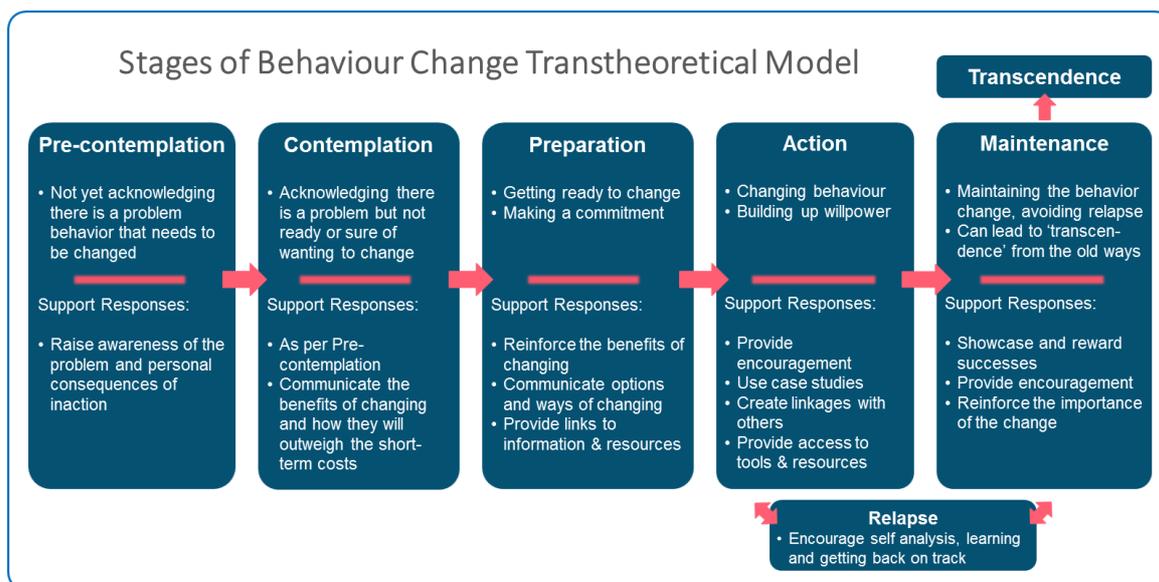
The overall objectives of this initial phase of the research were to find out from the Hawkesbury Nepean Valley community:

- ◆ The extent and nature of existing community networks;
- ◆ What they understood about the risk of flood and its potential impacts;
- ◆ Their understanding and behaviours around being prepared for a flood;
- ◆ Their likely behaviours during a flood, with a focus on evacuation;
- ◆ Levels of interest, knowledge and information needs and preferences regarding local flood related information; and
- ◆ Understanding how the community could be influenced to ensure the desired behaviours; and to do so without raising undue alarm or concern.

One of the aspects of the research involved exploring people's flood readiness within the context of behaviour change. Newgate Research informally used the Transtheoretical 'Stages of Change' model within the research to understand what stages various groups of people were within in the change process, and in turn the types of support they may need to help facilitate their progression towards being flood ready.

This now widely used behaviour change model – sometimes known as the Transtheoretical Model – was developed in the late 1970's / early 80's by James Prochaska and Carlo DiClemente when studying how smokers were able to give up. The model takes the view that behaviour change does not happen in one step; people tend to progress through the different stages (shown below) in their own way, at their own rate, from pre-contemplation towards successful and sustainable change.

People need different forms of support at the various stages, and they may not progress if unsupported, or may experience relapses before finally reaching 'transcendence', when they are permanently changed and emerge as potential role models. The framework is used for health and addiction problems, and increasingly sustainability behaviours, social marketing and community based programs aimed at building community resilience.



## METHODOLOGY

The qualitative phase of the research reported in this document included six focus group discussions with residents in the Penrith and Richmond Windsor floodplains, plus four in-depth interviews with community engagement officers from each of the four local councils in the Valley.

### Community Focus Groups

The focus groups aimed for a broad representation of residents the HNV community and each group had a mix of gender, age groups, people with and without children in the home, employment statuses, household incomes, home owners and tenants and those from non-English speaking backgrounds. The table below outlines the flood type areas, floodplains and sectors targeted in each group as well as the number of participants in each, totaling n=49:

Group	Flood type area	Floodplain	Sectors covered	Date	No. of participants
1	Rising Road Access	Richmond Windsor	Londonderry, McGraths Hill, North Richmond, Richmond, Wilberforce	25 August 2014	9
2	Rising Road Access	Penrith	Emu Plains, Penrith, Penrith North, Penrith South	26 August 2014	7
3	Overland Escape Route	Penrith	Emu Plains, Penrith, Penrith South	26 August 2014	6
4	Flood Island Low	Richmond Windsor	McGraths Hill, Pitt Town, Richmond, Richmond Lowlands, Wilberforce, Windsor (incl. Bligh Park)	27 August 2014	10
5	Flood Island High	Richmond Windsor	Pitt Town, Wilberforce	27 August 2014	7
6	Flood Island Low	Penrith	Emu Plains, Penrith North	28 August 2014	10

Recruitment was undertaken by specialist research recruiter AFS Smart Askers using a recruitment script and screening questionnaire prepared by Newgate Research. Sample was developed from a full list of address points for the target area provided by the SES which identified the flood type area, floodplain, sector and sub-sector for each entry. AFS then used this list to source telephone numbers, which was also used for the quantitative survey. In line with accepted market research practices, all participants received an incentive of \$100 for their time.

Facilitation was led by Senior Director Jasmine Hoyer, Managing Director Sue Vercoe and Research Director Anne Higgins. In situ note taking was conducted by these team members along with Senior Advisor Julie Sheather and Senior Executive Jessica Stacey. Representatives from the Taskforce observed most of the research sessions.

### **In-depth Interviews with Local Government**

A series of four in-depth interviews was conducted with community engagement officers; one per each of the four key local councils in the area, being the Hills Shire, Blacktown City, Penrith City and Hawkesbury City. These interviews were conducted by Newgate Communications' Senior Advisor Julie Sheather and with permission, the names of the officers who contributed are listed below:

#### **The Hills Shire**

- Gaynor Corfield (Senior Coordinator, Strategic Community Engagement)
- Allan Gear (Principal Coordinator Waterways)
- Alex Cauchi (Media & Communications Officer)

#### **Blacktown City**

- Kate Jones (Communications Officer)

#### **Penrith City**

- Heather Chaffey (Community Engagement Officer)
- Carl Spears (Principal Communications Officer)

#### **Hawkesbury City**

- Sonia Porter (Manager Corporate Communications)
- Shari Hussein (Acting Director City Planning)

# EXECUTIVE SUMMARY

Following is a summary of key findings from the qualitative research.

- ◆ While most participants were aware that they live in a flood plain, the majority had not given it much thought and were not particularly concerned about flood risks, and few had prepared for the possibility of floods in any meaningful way.
- ◆ There were significant differences in findings between participants living in the Penrith floodplain and the Richmond Windsor floodplain in terms of awareness, reactions to evacuation orders and communications preferences.
  - While those living in the Penrith area were less aware of flood risk they were more likely to follow evacuation orders and want information delivered to them via their letterbox.
  - Those living in the Richmond Windsor floodplain tended to have a greater awareness of flood risk but no real sense of the potential scale and impact of a major flood. They had more faith in their own experience and neighbours' recollections of dealing with floods in the past (which often downplayed risk) and were less likely to follow evacuation instructions. However they showed more interest in attending community meetings to discuss the issue, suggesting more importance is placed on shared community activity in their area.
- ◆ There were a range of common misconceptions among some participants about flooding in the area including:
  - Floods won't affect them because they won't reach their property and if they do, they can easily get to higher ground;
  - There would only be minor floods like those of the last 30-50 years (since the dam was built there haven't been any big floods, so they're unlikely – indeed the dam seems to be keeping us safe) and they know how to deal with relatively minor floods;
  - There will only be a flood if there is a massive spill from Warragamba Dam or if it fails or is damaged in a terrorist act;
  - Flood waters rise slowly so there will be plenty of time to prepare at the time and no pressing need to prepare in advance;
  - Flood preparation is simply a matter of common sense;
  - The biggest risk is to property and possessions, not to personal safety; and
  - Things would reasonably quickly return to normal after a major flood – there was very little awareness of the potential impact on supporting infrastructure preventing an immediate return to normal life.
- ◆ In general, the likelihood of complying with evacuation orders increases the more people understand the seriousness of the issue and the broad range of impacts on the community, particularly the issues around road access and utilities being cut off. Most people would follow a definitive instruction to evacuate immediately if they understood there was the very real potential for loss of life as a result of people not following orders. The need for staged evacuation was understood but the findings suggest it would be followed to some degree if clearly communicated, but that some people would ignore this once they feel at immediate risk.
- ◆ After learning more about flood risk and potential impacts, interest levels increased significantly and participants strongly supported the development of an awareness and education campaign on this issue. In particular the impact of the flood impact map showing the extent of potential flooding on

neighbourhoods and infrastructure had a sobering effect. In the HNV region, people's perceptions were sometimes impacted by neighbours' and long term residents' bravado in playing down the risk inherent in past floods and 'false alarms'. In general this community appears to be somewhat blasé about risk issues based on anecdotal sharing of past experiences and local folklore.

- ◆ Participants suggested the core of this awareness and education campaign should comprise delivery of a brochure and preparedness checklist to each household, with a corresponding public relations campaign comprising initiatives such as media stories, advertising, local exhibitions and briefings of local opinion leaders. Some in the Richmond Windsor floodplain were interested in attending a local community meeting to discuss the issue further.
  - There was strong demand for one overarching, clear authoritative source of information in the event of flood, but some uncertainty about whose role this was. Councils were seen as the main source of information about flood planning, with the SES regarded primarily as a hands-on response agency.
  - Many participants stressed the importance of ensuring the design, visuals and messages strongly reinforced the relevance and seriousness of the issue through localisation of information, maps, animations and images.
  - The research also suggested that some of the common flood terminology (e.g. '1 in 100 year flood') will need to be avoided to maximise comprehension.
- ◆ The 2013 bushfires have set a benchmark for how participants expect communications will occur in the actual event of a flood, with key elements including text messages, one clear authoritative voice telling people what to do, and an app like 'Bushfires Near Me'. Despite this, participants will be looking for verification of information and instructions from other sources including media, websites, friends and family.
- ◆ In addition there are some nuances to be observed. This includes the more semi-rural parts of the Richmond Windsor floodplain's heightened flood experience and apparently stronger community connections which point to *some* desire for localised meetings and more direct engagement in addition to the core communications. Meanwhile commuter-oriented Penrith is more inclined to be looking for quick information through the letterbox that can go straight on to the fridge with other emergency numbers, to prompt them to prepare for the possibility of flooding.
- ◆ The local government feedback was largely in line with that from the community in terms of the community profiles and council officers' perceptions of current awareness and likely reactions to flood events among the people in their shires. The officers highlighted and reiterated that the greatest communications challenges would lie in helping the community to understand the risks of flood and why they need to be acting *now* to prepare (i.e. overcoming inertia). Their suggestions for communications – including both awareness campaigns and in the event of a flood – are incorporated into the communications and engagement recommendations for this report study.

# FINDINGS IN DETAIL

## 1. CONTEXT: LIVING IN THE AREA

As context for our research we asked participants about the nature of their local communities in order to understand their values and strength of local connections and networks, which might be useful for building flood resilience through communications and engagement. We also asked about how they kept up to date with what is happening in the local area.

### Sense of Community

When asked what they like about living in their respective areas, many participants commented on the space, natural beauty and the community feel. Many thought they had the ‘best of both worlds’ by living close to both the country and the city.

*“You can easily get out to the country areas. You’re not stuck in the urban environment and you don’t have to travel far to get into open air.” (Penrith, Rising Road Access)*

*“You feel like you’re out in the country but you’re only five minutes’ drive to the shops and fifteen minutes’ drive to work.” (Richmond Windsor, Rising Road Access)*

*“It was country originally, has lovely village atmosphere, with the river and the mountain and this lovely strip of land that can’t be extended or built on. A lovely, friendly area to be in.” (Penrith, Overland Escape Route)*

However, the *sense of community and connection* differed somewhat between the floodplain areas:

- ◆ **Penrith:** Those who had lived there longer felt the community was strong and close-knit, but those who were relatively new to the area felt some effort was required to ‘break in’. Participants reported that there are ‘pockets’ of people who look out for each other, but there was an overarching sense from the discussion that there is less need to rely on each other, perhaps because many services are close by and more accessible in the Penrith area. Renters tended to be less likely to engage with the community, seemingly wary of building connections with neighbours if they were unsure about staying in the area longer-term.

*“My parents have been in the same home all my life, we know everyone in the street and around us.” (Penrith, Overland Escape Route)*

*“As I’m renting I don’t worry too much about the sense of community. Maybe that’s a personal thing for me. I mean, I notice people in the street and we do say hi to each other...” (Penrith, Rising Road Access)*

*“It’s not the community as a whole of Emu Plains but in our street, we know everyone. My husband slid over and the two fellows across the road were over to help. There’s little pockets of community.” (Penrith Floodplain, Low Flood Island)*

*“People have the connections they have, but they don’t span right across the whole community.” (Penrith, Low Flood Island)*

- ◆ **Richmond Windsor:** Participants who lived in these areas tended to say they were more connected to their neighbours for mutual benefit. Distances between properties and more limited access to many urban services seemed to foster a greater degree of self-reliance among these participants, with some mentioning that they often work together and look out for each other's needs.

*"In our area everyone looks after each other and keeps an eye on things when they go away, collecting mail and whatever." (Richmond Windsor, Rising Road Access)*

Those who have been in the area longer feel their sense of connection is being lost a little as new people move to the area. They were also more acutely sensitive to development changing the nature of the area and increasing local traffic congestion.

*"I knew everyone at one time, but I don't know anyone now." (Richmond Windsor, Rising Road Access)*

*"They are developing from Marsden Park down to Richmond Road. It'll have such an impact on us travelling and coming into Windsor as the main shopping centre." (Richmond Windsor, Rising Road Access)*

Some who were newer to the area mentioned that it seemed to take some time to feel a part of the community but one person noted this was changing with new developments and more new residents.

*"It's a bit daunting for newcomers because the community are well known to each other. When I first came in, they were initially a little cool." (Richmond Windsor, Low Flood Island)*

*"Before Bligh Park was built, you weren't considered a local until at least your third generation had come through." (Richmond Windsor, Low Flood Island)*

### **Local Sources of Information on What Is Going On In the Community**

In broad descending order of importance, participants tended to use the following sources to keep up to date with what is going on in the local community:

- ◆ Local newspapers (e.g. Hawkesbury Gazette, Hawkesbury Courier, Leonay and Glenmore Park Gazette);
- ◆ Facebook (feeds from 'friends' plus pages for interest groups, pages for local newspapers and official emergency services pages);
- ◆ Informal sources:
  - School committees and P&C, parents' network;
  - Friends and relatives (local grapevine);
  - Individuals who have a lot of contact with others (e.g. local fundraisers and volunteers, shopowners, the Avon lady)
  - Kids' homework and discussions on lessons from school;
  - Church and sports clubs (especially in the Penrith area);
  - Local pub in rural areas.
- ◆ Local events; and
- ◆ Roadside signage.

## 2. PERCEIVED RISK OF NATURAL DISASTERS

We asked participants to fill in a worksheet to explore their perceptions as to the risk of various natural disasters occurring at their properties, as well as their previous experiences with these disaster types. The objective was to gauge where flood broadly ranks as a risk compared with other types of disaster, and how previous experience influenced those perceptions.

### Risk Perception and Previous Experience with Natural Disasters

Before the exercise, there had been no unprompted mentions of flood risk as a concern. Indeed bushfire tended to be top of mind as a risk because of the 2013 Blue Mountains bushfires. However, after more consideration by participants, and when the ratings from the exercise were collated, there were notable differences between the flood plain areas.

On the **Penrith** floodplain, the top three risk types in broadly ranked order were:

- ◆ Severe storm (flash flooding, falling trees);
- ◆ Flood; and
- ◆ Bushfire/drought.

Severe storm was considered to be the highest risk because the majority had experienced them at some stage either in their current home or elsewhere, and they were understood to be somewhat frequent. Relatively few had experienced a flood.

Despite this, the risk of flooding was reasonably prominent due to some participants' previous experience, recall of the 2011 Brisbane floods, experiences with dam management activities (recent release of water which some knew had caused erosion); and awareness of a recent Penrith Council seminar organised by an insurance company. For these participants, the main flood danger is perceived to come from Warragamba Dam (overflow, catastrophic collapse or terrorism), a misconception that will require some education to correct.

On the **Richmond Windsor** floodplain, the top three risk types in broad ranked order were:

- ◆ Flood;
- ◆ Severe storm; and
- ◆ Bushfire.

Flood was the perceived highest risk natural disaster in this area due to:

#### ◆ **Previous experience**

The majority had experienced flooding at their current property or elsewhere. Interestingly, participants on this floodplain noted they had experienced more severe storms at their current home than floods, but flood is still seen as a higher risk overall.

#### ◆ **Inherent awareness of local history and previous flood events**

Many participants (especially older and longer term residents) demonstrated through their responses that history is actively discussed by friends, family, local historians and prominent individuals in the community, and many were able to report stories they had heard about local flooding. They spoke of a nail in a local pub which shows where the 1867 flood had reached, and others mentioned local monuments and attractions e.g. one which encourages visitors to crouch to a certain level and survey a large portion of the local area, pointing out that all they can see was under water during the event.

◆ ***Recent changes to insurance premiums***

Many participants either had friends who had recently experienced significant changes to premiums, or had experienced it themselves due to flood rating changes (not that they understood what the flood rating was);

◆ ***Heightened consciousness about local roads that can be cut off***

Some participants demonstrated throughout the groups that they seemed to be aware of which local roads were likely to be cut off as they grappled with scenarios of flood events and cited their likely evacuation routes. However, some younger participants and newer residents knew nothing about potential evacuation routes, even if they knew the area was flood prone.

### **Level of Interest in Floods**

As already stated, initial unprompted interest in the issue of floods and flood risk was generally low when taken in the context of other risks and life priorities.

However, after a short introductory discussion when it became obvious from other participants' comments that there was potential for serious flooding in the area, around half registered strong interest in knowing more. This appeared to be driven to some degree by concern for their family and property but also from general interest and civic concern.

Interest levels naturally tended to relate to whether participants believed they might actually be directly affected by flood (i.e. that their own property would be under water). On that basis, Penrith participants were more likely to say they had low interest in knowing more about the risk of floods than those on the Richmond Windsor floodplain.

### 3. FLOOD RISK: CURRENT KNOWLEDGE AND MISCONCEPTIONS

#### Current Knowledge Levels about Flood Risk in the Area

Current knowledge of the potential risk of flood in the local area was fairly low across the board. The majority of participants in the Penrith floodplain said they knew very little, while the majority on the Richmond Windsor floodplain tended to say they knew a moderate amount. There was a handful of participants who felt they knew a lot about flood risk. These tended have been through floods and believed they were experienced and well-equipped to deal with it. Of those who had *not* been through a flood, some were aware that they didn't know enough about the risks:

*"I'm concerned, but ignorant as well. I don't know enough."* (Penrith Floodplain, Overland Escape Route)

Others felt confident they could handle any flood based on likely flood levels, what they know from stories and history, as well as what they see as common sense.

#### Common Misconceptions that Lower Perceptions of Risk

In the discussions about risk, a number of common misconceptions about flood emerged. These may be contributing to the community's poor understanding of how dangerous floods can be, the extent of disruption they can cause to the whole community even if one's property doesn't become inundated, and how likely they are to occur. This is in turn impacting people's willingness to prepare for flood; many are at 'Pre-contemplation' stage in the Stages of Change model and thus don't even know that they should do anything.

The main misconceptions are:

##### ◆ Lack of perceived relevance to them personally

A lot of participants simply didn't believe a flood would ever reach their property or that they would have to evacuate. Indeed some living on the Penrith floodplain were actually unaware of this fact. Most participants, particularly long-term residents, those living on rural properties, and those living on the Richmond Windsor floodplain, know they live in a flood zone but their level of concern and understanding of the potential scale of the issue is very low. Some further examples of how flood risk is perceived follow:

- Those on high flood islands are confident that the likelihood of flood is negligible, especially if no flood has reached their home before.
- Some high flood island residents thought they would just need to walk up a hill to higher ground and wait for the water to subside.
- Those with homes of two or more storeys believe they can simply 'go upstairs' and live out of the top floor if necessary.
- Some have built or renovated their homes to be over certain heights or are using water-resistant materials to reduce insurance premiums and to lessen potential flood damage, but many of them don't know how high the water could rise.

*"I don't believe it's going to happen. It's lack of a threat."* (Richmond Windsor, Low Flood Island)

*"I've got people at the end of my street who've been there 18 years. My husband had seen their house under water; he canoed past it but they won't believe us. They look at you and go 'You're*

*stupid'. They've been there 18 years, but we haven't had the floods in all that time."* (Richmond Windsor Floodplain, High Flood Island)

◆ **Belief that no real preparation is required for a flood**

While they acknowledged a need to consider what they would do if a flood occurred, most did not have any real understanding of what it means to prepare, thinking it probably just involved using common sense (e.g. moving things up high). Most think that knowing the location of things that they might have to take with them constitutes preparedness.

◆ **Belief that flood waters will rise slowly and they will have plenty of warning to prepare for evacuation**

Participants believed they would have plenty of warning to practically prepare for a major flood, as they expected floodwaters would rise very slowly over a number of days. This perception appears to be based on previous experience or observations from news stories about floods in other areas.

*"If it rains for a week, it's gradual, so you don't panic."* (Penrith Floodplain, Overland Escape Route)

◆ **Beliefs regarding the dam – i.e. there will only be a major flood if it fails, or it is keeping us safe (Penrith)**

Some participants, primarily living on the Penrith floodplain, believe that they are only likely to be impacted by a major flood if Warragamba Dam collapses – either because it gets too full or has a fault, or because of terrorism. Conversely, some people felt that the dam was protecting them from major floods, saying there had been fewer floods since the dam was built.

*"What's just struck me is that the record flood was 1867, but there was no Warragamba Dam then, was there? So would there be less water coming down now than there was then? And even the other dams further to the south. The way they've built the wall up."* (Penrith Floodplain, Overland Escape Route)

*"Since they raised the height of the dam, there's only been one flood, and they expected it would be higher, but it wasn't... McGrath's flats used to flood all the time, right up to the Jolly Frog, but not now."* (Richmond Windsor Floodplain, Low Flood Island)

◆ **The biggest risk is to property and possessions, not to personal safety**

The risk of human fatality from floods was barely mentioned. Participants felt the greater risk was to possessions and livestock or pets, which they felt they would be able to save given the expected slow rise of the waters and amount of warning they believed they would get. Some were also conscious that there may be some disruptions to day to day life following the flood, mainly associated with their ability to get to and from work, school etc.

## 4. PREPAREDNESS FOR FLOOD EVENTS

To understand the scale of the task of helping communities prepare for flood events, we asked participants about how prepared they felt they would be if a flood event were to occur, what they had done to prepare and what they thought could be done to enhance preparedness. Our analysis of these responses also revealed their attitudes to preparation and the drivers of these views.

### Preparedness Rating

To gauge current preparedness participants were asked to note down, in percentage terms, how prepared they thought they would be if a flood event were imminent.

There was quite a lot of variation, ranging from 0% to 100%. The majority thought they were less than 50% prepared and approximately a quarter said they were less than 10% prepared. This was consistent across both the flood plain areas.

However, Richmond Windsor participants were much more likely to say they were at least 50% prepared or more, saying this was because they had experienced floods before. A few in Penrith also felt quite prepared because they had experienced natural disasters.

### Current Preparations for Flood

Preparations for a flood event were limited overall, with only two to three people in each group mentioning they had actually taken some type of action to prepare. These people generally only mentioned having done one or two things.

*“I’ve got an idea of what to do, but none of them are done.”* (Richmond Windsor Floodplain, Rising Road Access)

*“I have a boat tied up in the side garage. If Warragamba Dam burst we have 20 minutes from the time the dam goes to the time the water is here – 20 minutes. We’ve got torches, everything. A bushfire kit or a flood kit is one and the same.”* (Penrith Floodplain, Low Flood Island)

*“You think about what would you do, what you would take, where you would go, just thinking it through a bit.”* (Penrith Floodplain, Overland Escape Route)

The actions participants cited having done or put in place to prepare for a flood were – in broad descending order of frequency:

- ◆ Having important documents and valuables together (or at least knowing where they are), with one or two adding they were kept in a waterproof bag or that they kept copies at another location;
- ◆ Having potential for flooding in mind when renovating homes – including having raised floors and using materials like tiles and marine-grade timbers which can be hosed out (especially on the bottom floor of two-storey homes);
- ◆ Having a list of what needs to be done;
- ◆ Having a plan for livestock;
- ◆ Having generators on hand;
- ◆ Knowing where key survival tools are (boats, camping gear etc);
- ◆ Having agreements with neighbours in place about storing possessions;

- ◆ Having boxes and kits with torches, blankets, batteries, water, first aid;
- ◆ Having a boat for oneself and for helping others;
- ◆ Two Penrith participants said they actually had emergency kits ready, one because he had previously volunteered in emergency services and the other because he was a New Zealander who had been through the Christchurch earthquake. The New Zealander also had suitcases in each room so they were ready to evacuate immediately.
- ◆ One participant in Richmond Windsor said she always kept a few days' worth of food and water handy.

### What it takes to Be Prepared

Asked to list what full preparation for floods would involve, many participants felt unsure and drew on common sense, appearing as if they were thinking about it for the first time. The range of responses included:

- ◆ Being aware of whether any flooding is coming and staying up to date through regularly checking for information – especially if it has been raining for several days;
- ◆ Knowing where your children are at all times;
- ◆ Knowing where everything is that would need to be taken or moved;
- ◆ Talking about a flood plan with the family;
- ◆ Having a checklist;
- ◆ Having backup power;
- ◆ Having lists of possessions for insurance, and insurance plans up to date;
- ◆ Knowing which way to get out and where to go;
- ◆ Knowing where to get information;
- ◆ Keeping the gutters clean and ensuring debris won't cause water to bank up;
- ◆ Having a few days' worth of food and drinking water in case of isolation; and
- ◆ Having an emergency kit and/or first aid kit.

### Nature of the Flood Emergency Impacts Understanding of Preparedness

It was observed in the research that there are differing mindsets around the term 'prepared'. Participants separated the idea of being *prepared to survive and preserve life* in a flood and being prepared to *safely evacuate and protect possessions*.

- ◆ If flood is an imminent emergency, the prevailing belief is it would take a short time to get key people and pets together and get out. In this situation, they believe preparation requirements would be minimal and that they are probably as prepared as they can be right now.
- ◆ If the flood is approaching at a 'comfortable rate', time could be taken to: store possessions; secure valuables and essentials; collect key people, pets and livestock, and progressively move them to a safe location – possibly over several trips. In this situation, they feel that just knowing where valuables and essentials are stored is likely to be preparation enough, perhaps with an addition of a box with torches, radio and survival needs, which some already have in place for bushfire.

With mindsets like these, many felt there was a limited amount they needed to or could do in advance and most felt they could deal with it at the time. In fact most participants were of the view that it would simply not be possible to be 100% prepared: *"There are some things you just can't do, like you can't just keep the dog in the car."* (Richmond Windsor Floodplain, Rising road access).

## 5. FLOOD RESPONSE

After examining preparedness for a flood event, the research needed to understand likely flood response.

To set the context for response at current knowledge levels, we asked participants about what they thought they needed to do when responding to an actual flood event. This included examining their willingness to evacuate, their expectations of how long evacuation would take, as well as where they would go and how they would get there.

We then presented participants with a scenario exercise which utilised various stimuli and projective techniques to explore their thoughts, feelings and actions during the scenarios in order to understand how their actual behaviours might differ from their expectations.

### Knowledge of What to Do in an Actual Flood Event

As noted in the previous section of this report, there was a sense of complacency that common sense is all that is required to respond to a flood. So, when prompted on how they thought they might respond in the event of an actual flood, most participants did not get beyond 'staying up to date with information, getting ready to evacuate and using known roads that are perceived to be safe'.

*"It comes down to common sense and I think I have a rough idea, but I don't know what I don't know." (Richmond Windsor Floodplain, High Flood Island)*

*"I'd ring a few mates and you'd make sure your family is safe first, and animals, then put any valuables you can carry in your mate's ute or truck and get out of there." (Richmond Windsor Floodplain, High Flood Island)*

*"When we were flooded we sort of knew it was going to happen so we didn't panic. We knew the house was safe. When we lived in South Windsor it was more threatening as the water came to the door. You have to disconnect the power. Make sure you have fresh water and stuff to eat. It was a build up for us. When we were on acreage we had to bring the animals up close to the house. I think just basic common sense overcomes everything else. You know what to do at the time. At the time you just do it, common sense kicks in and you think you've got to be cautious of this, that and the other, remove dangerous objects etc." (Penrith Floodplain, Rising Road Access)*

However, many people were even unsure of these things, expecting they would have to use their best judgement at the time, and that they may be relying heavily on others for help and information. This included younger women in particular, those who were newer to the area, and some older people.

### Willingness to Evacuate

Most participants were willing to evacuate if they received an order to do so. In general, those living on the Penrith floodplain were more willing to evacuate than those living on the Richmond Windsor floodplain, with some saying they would leave before actually receiving the evacuation order.

*"If I heard emergency services say it's time to go then you'd take their advice." (Penrith Floodplain, Rising Road Access)*

*"I'd leave even if they were just advising there is a risk of flooding. I'd probably try and prepare and stop the water coming in but otherwise I would just go, it's just a house." (Penrith Floodplain, Rising Road Access)*

Note that willingness to evacuate did increase in conjunction with awareness of potential impacts on the broader community, including road access and disruptions to utilities.

Some people living on flood islands didn't realise they might need to evacuate even if the water wasn't going to reach their property. Those in double-storey homes tend to feel protected and believe they can just move valuables upstairs where they will wait out the flood and then hose or clean out any damage once the water subsides. Some in single-storey homes said they'd go to neighbours with double-storey homes.

*"The last flood I was in, we all just moved our houses and went and had a big party; we couldn't get out."* (Richmond Windsor Floodplain, Low Flood Island)

Just a few (mainly males and older landowners in the Richmond Windsor area) said they'd prefer to stay and defend their property and to help other people. These people tended to believe that, even if they had been ordered to leave, they would make their own judgments about how rapidly the waters were rising and whether it would get to their home.

*"I have young children – would you rather get your wife to take the kids away, and you stay and prepare as much as you can, or would you rather that they stay and help you? I don't know."* (Richmond Windsor Floodplain, Low Flood Island)

*"If my girls were safe, I would stay to try to save more stuff."* (Richmond Windsor Floodplain, Low Flood Island)

*"I stayed because we're higher than the RAAF base, we're pretty high so I think we're safe. We're a two storey house, and we can even get on the roof if we need, but it'll never get that high."* (Richmond Windsor Floodplain, Low Flood Island)

*"My husband would stay with the sinking ship, but I'd get out two days before."* (Richmond Windsor Floodplain, High Flood Island)

### **Estimated Time to Evacuate**

Participants generally thought it would take 10 minutes to an hour to get things together (if children/dependents are with them), get to their car and leave the property. Some thought it would take 2-4 hours, thinking they'd have more prior warning of the need to evacuate.

This timeline shrinks if evacuation is understood to be urgent; many would leave possessions and just go, prioritising the value of life over possessions.

Those with children or dependents (older parents, infirm neighbours) indicated they would get out earlier than others. There were a couple of considerations here: the time required to organise a number of children; the time required to move elderly or infirm people with limited mobility or with special medical equipment; and the need to avoid frightening dependents in a way that would make them more difficult to manage if the situation were more imminent and dangerous.

Reaction times to evacuation orders would also depend on where the participant was (at home, elsewhere). If they were not at home, but the children/dependents were, participants indicated they would immediately try to return home to evacuate them. While aware of the potential danger to themselves or others of this action, they were willing to take the risk to ensure the safety of their dependents. This would only be avoided if they had information from either schools or friends/relatives that the children/dependents had been safely evacuated by others.

Those on farms believe they'd need a lot longer for moving machinery and livestock, setting up pumps etc., but they were also more likely to start preparing earlier than others.

Participants living on the Penrith floodplain indicated they would get out much quicker than those in Richmond Windsor who were more likely to rely on their own judgment due to past flood experience and faith in their survival skills. This applied to both genders – *"We're not ladies from the Eastern Suburbs – we know how to get our hands dirty and load a truck"* (Richmond Windsor Floodplain, Low Flood Island). Recent 'false alarms' have many people in the Richmond Windsor floodplain second guessing authorities and saying the SES will need to rebuild their trust.

*"They've got to get it right, otherwise I'm thinking 'the water is 200 meters from my place, why did I have to move?'."* (Richmond Windsor Floodplain, High Flood Island)

*"Especially locals who've been there for a long time and they go 'seriously, it's still days away'."* (Richmond Windsor Floodplain, High Flood Island)

### **Where Would They Go and How Would They Get There?**

Most participants thought they would go to stay with friends or family (often their mother's) in the mountains, especially if they live in Penrith, or other suburbs not under threat.

Most people thought they would take a single vehicle to evacuate as they would prefer to keep the household members together, although some thought they may take two or more to save their vehicles. Most didn't expect they'd be towing anything, although a few in Richmond Windsor said they would e.g. boats, trailers, horse floats. Some people with 'tinnies' or horse floats would use them or loan them to help others.

Note that a few people initially thought they would walk out on foot (e.g. up the hill) and needed some convincing of the seriousness and the longer term nature of the situation before they would consider evacuating by car.

*"I'd probably get out beforehand. I'd foot it. It's not going to come up that quick. You get in a traffic jam and people are all going to get the shits... Being on foot, there's nothing I wouldn't be able to handle or that my kids wouldn't be able to handle."* (Richmond Windsor Floodplain, High Flood Island)

Many participants were concerned about there being one or only a few roads via which to evacuate, with some commenting that with the growing population this could make it harder to evacuate, especially via Windsor Road. Some (especially younger females) were also concerned that they did not know which routes they could use to evacuate, let alone how to find out the routes.

*"We've only got one escape route. Peach Tree Creek has a habit of rising over the banks and coming up to people's back doors, but it's because it gets so blocked from all the rains coming into it. We get the water across the road, our gardens go under. A few times a year on our street, when there's heavy rain. And the way the roads are, the runoff isn't there to go into the guttering, it sweeps across the road as well."* (Penrith Floodplain, Overland Escape Route)

*"In some places there is only one road in and out."* (Richmond Windsor Floodplain, Rising Road Access)

*"I don't know how we'd get out. The new bridge [Hawkesbury Valley Way and Jim Anderson Bridge] is useless, where it comes onto Macquarie Street; it floods at the lowest levels– and it's supposed to be an evacuation route." (Richmond Windsor Floodplain, Low Flood Island)*

*"If it's flowing you'd have to go via Richmond Road, there wouldn't be any other way." (Richmond Windsor Floodplain, Low Flood Island)*

## **Understanding of Warning Systems and Evacuation Orders**

There was very little awareness or understanding of the warning systems currently in place for flood events and therefore how a managed evacuation would work. Few participants were able to grasp what much of the terminology around flooding actually means for them and their properties. Only one participant exhibited any understanding of the difference between an evacuation warning and an evacuation order when she was relating how she and her neighbours had ignored both during a recent 'false alarm' in the Richmond Windsor area. Others spoke of people panicking upon hearing a flood warning and stocking up on food supplies.

*"The flood we didn't have ... we all got text messages ... it was an evacuation warning but our neighbours got the order, but it never came." (Richmond Windsor Floodplain, High Flood Island)*

*"On the other side of river, they all panic if there's a warning of a flood. From Day 1, there's nothing in the supermarkets." (Richmond Windsor Floodplain, Low Flood Island)*

Despite this, there was some confidence that, as a flood approached, people would be told what they needed to do at the time. Most expected they would receive either an SMS or a knock at the door from a member of the emergency services or the SES. Some believed they would receive an automated call to their home telephone.

## **Response to the Idea of Staged Evacuation**

NICTA (National ICT Australia) is Australia's information communications technology Research Centre of Excellence and produced a flood evacuation simulation video for the Valley, which was used in the focus groups. The video was modelled on similar levels to a 1 in 100 year flood, and showed two scenarios:

1. What is predicted to happen if people don't follow evacuation orders and instructions and they leave somewhere between 0 and 2 hours before the flood reaches their immediate area; and
2. What is predicted to happen when everyone follows planned evacuation instructions and routes.

During the second portion of the video, moderators pointed out the staged evacuation process and how that contributed to ensuring safe evacuation of all people.

After being introduced to staged evacuation in this way, participants generally accepted the concept in principle but some became nervous, saying they would find it extremely hard to wait if told that another area had to evacuate first. Some were also quite surprised to learn that it would take 48 hours to evacuate the area, and some said they would need someone from emergency services to knock on their door and explain why they might have to wait, in order to help them to do so.

*"People take in the detail – they should say this many cars is going to take this many hours. Every minute you leave late means you're not going to get out of there in time. People think more individualistically." (Penrith Floodplain, Low Flood Island)*

*“It’s a pretty good graphic, in terms of running the evacuation in a staged way. I wouldn’t have thought it would take 48 hours to get that many people out... If the police knocked on my door and explained it, I would hang in there. Also, if they said ‘in 48 hours the water is going to be up at the street and we need you to evacuate now’, I would.”* (Penrith Floodplain, Low Flood Island)

A few said that, in reality, they just wouldn’t wait, especially if they needed to look after the welfare of children or older dependent parents or neighbours.

*“It’s a very good idea to have a plan, so they’re telling you a schedule for when you need to leave... but how are they going to make people do what they’re told?”* (Richmond Windsor Floodplain, High Flood Island)

*“That’s good if no panic sets in, someone doesn’t do something or causes an accident. I think that’s what would happen, in this world. Not to be against what we’re supposed to do, but that last flood, I’m sceptical straight away because it didn’t happen last time and people get complacent and think she’ll be right, won’t happen. There’s always that element.”* (Richmond Windsor Floodplain, High Flood Island)

The video was nonetheless very useful in helping people to understand the importance of following evacuation instructions and the implications of not doing so.

*“When the fires came up ... they door knocked, they came and told people they were ok, you don’t need to leave yet... They could show people that video to try and make them wait.”* (Richmond Windsor Floodplain, High Flood Island)

## SCENARIOS

Two hypothetical scenarios were developed to better understand the community’s expected responses to flooding and evacuation orders: a moderate flood scenario and a major flood similar to the record level of 1867.

Each scenario had three stages and at each stage different stimuli were given to participants who were then asked to write down on a worksheet a) how they would be feeling and b) what they would be doing and thinking. The responses to the scenarios are described below.

It is important to note that doing this exercise made many people realise and acknowledge that it would be better for them to be prepared and know what to do *well before* a flood, because they may panic and be unable to think clearly during such an actual event.

The tables below summarise the way participants thought they would feel and respond in a moderate and major flood scenario, stepping through each stage of the event.

## Moderate Flood Scenario

Stage of Scenario	Feelings	Response
<p><b>PHONE CALL FROM A FRIEND</b>  <i>It has been raining heavily for a week; it is 3pm on Thursday. You get a phone call from a friend or family member saying they've heard on the news your suburb might be flooding in the next couple of days.</i></p>	<p>Most felt concerned, worried and anxious. Some were calm and rational. Almost everyone was watchful and alert except for a very small minority who were sceptical.</p>	<p>Most participants from both floodplains took some kind of preliminary action at this stage, whether it was seeking further information online or from radio or TV; talking to neighbours or local friends and family about the situation; or making accommodation arrangements.</p> <p>Just over half of participants on the Penrith floodplain said they would pack bags or move furniture to higher ground so they could evacuate quickly compared to one in four on the Richmond Windsor floodplain.</p> <p>Nobody on the Penrith floodplain and only a handful living on the Richmond Windsor floodplain actually evacuated at this point.</p>
<p><b>SEE/HEAR FLOOD BULLETIN</b>  <i>You hear a bulletin that the Bureau of Meteorology has advised that moderate flooding is expected in the Hawkesbury-Nepean area. Most suburbs on lower ground are expected to be inundated in coming days.</i></p>	<p>The bulletin piqued participants' interest. They were more concerned, worried, anxious and scared.</p>	<p>After seeing the bulletin, activity intensified with around a quarter of Penrith participants and one in ten Richmond Windsor participants actually evacuating.</p> <p>Across both floodplains, preparations to leave increased, although there was still a significant minority who chose to monitor the situation through family, neighbours or the media.</p> <p>Around one in ten on the Richmond Windsor floodplain were taking no action.</p>
<p><b>SEE/HEAR SES EVACUATION WARNING</b>  <i>You go online the next morning and see the SES Evacuation Warning for your area asking you to evacuate in the next 24 hours when instructed to do so.</i></p>	<p>Most were even more concerned, scared and worried. They realised this was serious and wanted to ensure their family was safe.</p>	<p>By this point, almost three quarters of participants from the Penrith floodplain area had evacuated while the remainder were preparing their homes and packing bags to leave.</p> <p>Around three quarters of the Richmond Windsor participants had also either left or were in the process of leaving, but there was still a minority not preparing, preferring to monitor the situation themselves.</p>

## Major Flood Scenario

Stage of Scenario	Feelings	Response
<p><b>SEE/HEAR SES BULLETIN</b>  <i>You hear the SES flood bulletin calling for widespread evacuations – you are not at home and (if a parent) your children are at school.</i></p>	<p>Most felt concerned, worried, and anxious, with some reporting that they were panicking because they were not with their family.</p>	<p>This situation was particularly difficult for those with children or elderly relatives who were very focused on getting back to the area to ensure they were safe, potentially putting their own lives at risk in doing so. Many participants thought they would try to get home even though the area was evacuating.</p> <p>All participants except for a handful on Richmond Windsor floodplain took action.</p> <p>Just over half of those living on the Penrith floodplain were actively evacuating and a further quarter were actively preparing to leave. The remainder were seeking further information.</p> <p>Around a third on the Richmond Windsor floodplain were actively evacuating and around a half were preparing to leave. As for the previous scenario, around one in ten were seeking further information and a handful said they would take no action at this stage.</p>
<p><b>SEE PREDICTED EXTENT OF FLOOD (1867 MAP SHOWN)</b>  <i>Next, it is early afternoon and you look at the SES website or on the television and see this map from the SES showing the predicted flood extent (1867 flood extent)</i></p>	<p>Many were even more concerned, worried and scared for their families and home.</p>	<p>Seeing the map was very powerful for many people, who were then able to see roughly how close it was to their home and what would happen to planned escape routes.</p> <p>The map caused most of those left in Penrith to evacuate. Others prepared to leave and reported waiting for further information on the evacuation procedure, or calling for more information or help on what to do.</p> <p>Richmond Windsor participants also mostly evacuated with a small proportion preparing to leave. However there was a still a minority not acting, but seeking further information.</p>
<p><b>STUCK IN A TRAFFIC JAM</b>  <i>Next, it is still daylight but you find yourself stuck in a traffic jam trying to evacuate. The traffic hasn't moved for 20 minutes. Please write down what roads you're taking.</i></p>	<p>At this point most were distinctly scared and some were panicked. Many were frustrated and annoyed to be stuck in traffic. Some were calm because they felt they would have left on hearing the bulletin. It appeared that many were becoming more selfish at this point.</p>	<p>Most participants reported they would be calling family and friends and doing what they could to make it to higher ground.</p> <p>Some were changing routes while others said they would get out of the car and walk to higher ground if they had to. A few thought they would wait there until instructed otherwise, and listen to the radio or look online (via mobile phone) for information about alternative routes or further advice.</p>

## Discussion of Reactions to the Scenarios

Participants took the flood scenario exercise very seriously. Many became visibly more panicked and anxious as the scenarios progressed. When they heard the radio bulletins and saw the map of the 1867 flood extent their body language and other reactions suggested they were nervous. Some froze and struggled to write anything down while some stayed calm as they were rationally weighing up options.

After the two scenarios were considered, a discussion about the exercise ensued. This revealed that most participants realised they had not put much, if any, thought into what they would do in the event of a flood. The exercise also made some participants realise that they didn't know how they would react, and that they might not be thinking rationally or clearly if they were panicking. This was particularly the case for young women and older participants.

*"Oh Jesus, I don't know what to do."* (Penrith Floodplain, Overland Escape Route)

*"It really makes you think."* (Richmond Windsor Floodplain, High Flood Island)

*"You're either panicking or going to make a cup of tea."* (Richmond Windsor Floodplain, Low Flood Island)

*"I don't know what I'd do actually, I've never really contemplated it..."* (Richmond Windsor Floodplain, Rising Road Access)

*"The secret, always, is not to panic."* (Penrith Floodplain, Rising Road Access)

*"I didn't know the extent of it, it's quite confronting. I've only been here for six years. It's a concern when you're surrounded by water or a river."* (Penrith Floodplain, Overland Escape Route)

Participants were asked what information in the scenarios really stood out for them. The most concerning stimulus in the scenarios was the map of the 1867 flood extent as it really made them realise the flood risk in their area. The map helped them to visualise the extent of the flood and its impact on their home and evacuation routes.

*"[I was] most concerned when I saw the map – that was game changer for me, I was quite confident it would not have a direct impact on me and that it was more about road access. Then I saw my house under water, and it was a very different prospect."* (Richmond Windsor, Rising Road Access)

*"When you see the map, then it changes how you think about it and feel."* (Richmond Windsor Floodplain, Rising Road Access)

*"Seeing the map with the flood; it panicked me – it was such a wide area."* (Richmond Windsor Floodplain, Low Flood Island)

*"I think everybody in the area should get sent this map. Makes me feel like I need to be a bit more prepared."* (Penrith Floodplain, Overland Escape Route)

A few of the longer term male residents on the Richmond Windsor floodplain who knew the area very well added that the map confirmed what they had pictured in their mind from the description in the bulletin in the second scenario. Three or four of the focus group participants recalled having previously seen a map of the 1867 flood extent in information about the local area (from their council or in the newspaper).

From a nurse with extensive disaster relief experience and a comprehensive flood plan: *“This map is not new to me. I know if we get that level of flood it will flow two meters deep through my house. I’d ring my neighbours and sisters to make sure they get out. I’d then go to work in the emergency department as I would know my animals were safe.”* (Richmond Windsor Floodplain, Rising Road Access)

The information in the bulletins was also quite powerful in motivating many people to leave – especially in the second scenario, before they even saw the map. Some participants were, however, unsure what some of the language and terminology in the bulletins meant e.g. what ‘moderate’ or ‘major’ flooding meant, what ‘at the gauge’ meant, and some wanted to see more information about what people should actually do.

*“I would have evacuated from the very beginning, in the first scenario when I heard the bulletin.”* (Penrith, Rising Road Access)

*“How do you know the urgency of the moderate flooding? I have no idea.”* (Penrith Floodplain, Low Flood Island)

Several participants also became concerned when they realised that they might or would have forgotten to do things before leaving e.g. take important items like medicine.

*“I forgot to take the medicine with me.”* (Penrith Floodplain, Low Flood Island)

*“I was probably the most concerned when I was leaving, wondering if I forgot something or if I should have done something: the ‘IF list’. And then which way to turn from my place.”* (Penrith, Rising Road Access)

Reactions to the scenarios ranged from a calm and methodical approach to serious stress and panic as they contemplated what might happen to their family and home. The majority of participants expected they would evacuate in both scenarios, although at different stages, and most would take action earlier in the more severe second scenario. Generally, females were evacuating earlier than males.

*“I think of the Queensland floods; it happened so quickly, that’s why I’d just leave. Definitely, it’s in the back of my mind, and it’s where we’ve always lived and you kind of think of that and the river.”* (Penrith Floodplain, Overland Escape Route)

*“I think I would get out early. I wouldn’t wait for an official evacuation order.”* (Penrith Floodplain, Rising Road Access)

*“In the second scenario, I would have gone home straight away if I was at work and started looking at a plan to evacuate.”* (Richmond Windsor Floodplain, High Flood Island)

*“In the first scenario when I heard the bulletin I was sending my wife and children away, and I would have gone when I heard the bulletin in the second scenario... I would have stayed behind up to that point just on the odd chance that nothing happened and as long as someone was around in my street. There’s a couple of old people, they’d probably go earlier though, and there’s an SES officer and a police officer in my street. They’d be out working and I’d be around, just generally helping. I don’t like to see reports of the SES and police having to work when their own home is threatened, that would be so hard for them.”* (Penrith Floodplain, Overland Escape Route)

*“In the last bulletin that was it, my house goes under at 17 metres.” (Richmond Windsor Floodplain, Low Flood Island)*

Most people were more concerned about ensuring the safety of their family and friends over their belongings. In the second scenario in which people were not at home upon hearing that their area was evacuating, some said they would do whatever they could to get home to ensure their family was safe, even if this meant that it could put themselves or others in a dangerous situation. However, a few were also concerned enough about their belongings and their house that they would try to head home and ‘ride out the storm’.

*“I think I need a drink. In the last scenario if I didn’t have my son, I’d be freaking out. I would be running people over to get to the school before I would think about myself. With my mum, I’d be saying ‘Oh my god, I am going to die!’.” (Penrith Floodplain, Low Flood Island)*

*“If your immediate family was safe, that would be the main concern. You can’t stop it; if the house goes under, physically you can’t stop that. What’s the best thing for me, moving out?” (Penrith Floodplain, Low Flood Island)*

*“When I wasn’t home and I needed to get back, that would be the only time I’d be truly scared – if I couldn’t get back to get my family. I would try.” (Penrith Floodplain, Rising Road Access)*

*“I wouldn’t be in a hurry to get back after the flood either. If I’m with family then I’d just sit it out, I’m maybe a bit relaxed, but if you’re safe, your home and contents are only material things.” (Penrith Floodplain, Rising Road Access)*

In the final part of the second scenario when people were told they were stuck in a traffic jam, emotions were running high and responses were quite mixed, although most expected they would start with calling family and friends. Some suggested they’d try to turn around and go home or get out another way. A few thought they might get out of the car and try to walk to safety, while some said they would just listen to the radio while waiting for the traffic to move or for further instructions from the SES or police. A few people suggested they and/or other people would become quite selfish and angry at this stage because the traffic jam was preventing them from evacuating.

*“High stress if you’d left your house for 1-2 days. I’d be worried about looters.” (Penrith Floodplain, Rising Road Access)*

*“It’s getting too dangerous; I’d turn around and go back to my house.” (Richmond Windsor Floodplain, High Flood Island)*

*“I would genuinely just do a U-turn and go home, I’m high and dry. I probably wouldn’t have evacuated anyway.” (Richmond Windsor Floodplain, Rising Road Access)*

*“I’d feel a lot different in the last part of the second scenario, because in the other stages of the scenario you can control things. If you’re stuck because of other people, I would be extremely pissed off with everyone else in MY way. I’d have road rage and plenty of people would be doing it.” (Richmond Windsor, Low Flood Island)*

Others were concerned when they heard their street would be or already was cut off by flood waters or their suburb would become an island and they could not evacuate via main roads. In the Penrith Floodplain Overland Escape Route group, several laughed nervously when they heard their street would be cut off.

Some of these participants thought about evacuating using a boat or going through bushland if all else fails. A few said they would take certain routes even if they were told not to, or would drive their 4WD or motorbike off-road to get to safety – even if it meant breaking through fences or locked gates.

*“[I was most concerned] when they named my street and told me [it] was completely cut off.”*  
(Penrith Floodplain, Overland Escape Route)

*“Wait it out in the boat!”* (Richmond Windsor Floodplain, Low Flood Island)

*“I’d try to find a boat.”* (Penrith Floodplain, Overland Escape Route)

*“If I had to, I’d do something very sneaky, I’d get on the 4WD tracks and go straight to Yarramundi, if everyone else is stuck.”* (Penrith Floodplain, Overland Escape Route)

*“They are all sort of similar scenarios.... That’s how I felt....one more threatening than most. Hearing what roads are closed is scary.”* (Penrith Floodplain, Rising Road Access)

*“I have actually thought about this... I own dirt bikes and I would evacuate [that way].”* (Richmond Windsor Floodplain, Low Flood Island)

*“I’d go on the last warning. I’d be checking on all the family and friends – you’ve got to react. Then I am going up Mitchells Pass and you can’t stop me.”* (Penrith Floodplain, Low Flood Island)

During the discussion participants were asked what kind of floodwater was safe to drive or walk through. Responses were mixed, highlighting people’s knowledge gaps. Some knew that you shouldn’t drive or walk through any kind of floodwater, while some were unsure, some thought they could use their own judgement (especially experienced four wheel driving enthusiasts), and others thought that if the water was still and not flowing, it would be safe (not realising that it may still be dangerous, contaminated with sewerage etc.).

Notably, a few people said they would drive through the floodwater if they saw other people doing so – especially if they had similar cars to theirs. Some older participants lamented not being allowed to drive through floodwater now like they were able to in times past. A few added that their children would want to play in the water.

*“If I saw cars like mine in there, I would drive through it.”* (Richmond Windsor Floodplain, Low Flood Island)

*“I’d listen to the radio and try to determine whether it was safe to get out of the car and walk.”*  
(Richmond Windsor Floodplain, Low Flood Island)

*“I’m not worried, I would go home. My place would be OK because we’re up high. My son would want to play in the water. My whole extended family live here and they can all come to my place.”*  
(Richmond Windsor Floodplain, Low Flood Island)

A few on the Richmond Windsor floodplain were concerned about the longer term effects of the flood on their property once they realised their house would be severely impacted.

*“A flood like this would change my life for 12 months, it’s not going to be all back to normal in a few days or a week.”* (Richmond Windsor Floodplain, Rising Road Access)

*“It really makes you think about what you’d do if you weren’t home. Can you get home and what would you do if you had a short period of time? I’d be more worried and concerned and stressed if my house was going under. It’s a massive process to get it up and going again. I could have all my belongings packed but ... what are you going to do when floods go through and you need to rebuild your home? Where would you live while it’s being rebuilt?”* (Richmond Windsor Floodplain, Rising Road Access)

*“I was most concerned when I heard that my house is going under.”* (Richmond Windsor Floodplain, Low Flood Island)

It is important to note that quite a few participants on the Richmond Windsor floodplain were less likely to take the scenarios seriously because the SES had been overcautious on a number of occasions including recently, and had issued evacuation warnings or orders when the flood did not reach the predicted heights. This had caused some credibility issues for the SES in the area.

*“We’ve only been at our house six years and we’ve had a number of flood warnings. Now I don’t do anything unless it actually moves up. I’m not moving everything upstairs unnecessarily.”* (Richmond Windsor Floodplain, Rising Road Access)

*“In the last flood they said it would flood Windsor Bridge and it didn’t, and I had a 3.5 hour drive to go around the long way to get home, and then it didn’t flood the bridge. They are overcautious. Last time it was ridiculous to close the bridge. It’s not as if you’d be [in the] middle of the bridge and a wave would come down and hit you.”* (Richmond Windsor Floodplain, Rising Road Access)

*“This was the sort of thing they did two years ago, but it spread a bit of panic among my wife’s friends. But it was in Pitt Town Bottoms and it wasn’t going to come up to our area. I thought it was ridiculous the way these ladies were going on about it on Facebook.”* (Richmond Windsor Floodplain, High Flood Island)

## 6. COMMUNICATIONS AND ENGAGEMENT

Towards the end of the sessions participants were asked whether they felt there was a need for a general flood awareness and education campaign to be carried out in the medium term and, if so, what the community should be told and how. Participants also talked about what they felt would be the best way to communicate in the event of an actual flood.

Overall it is important to note that, after learning more about the risks and potential impacts of floods in their area during the discussion, participants strongly supported the development of an awareness and education campaign on this issue. Many admitted they would be more likely to evacuate earlier if they were aware of the potential implications and had discussed what they would do with other members of their household.

Some also admitted that the scenarios had prompted them to realise their previous assumptions of what to do and how they would escape were incorrect, and that they would have ended up trapped. After the scenario exercise, some commented that they had not been able to think as clearly as they would have hoped. This highlighted to many participants that there is a need for regular communications and reminders outside of times of flooding.

*“The most important thing is that the communication is done before we get within cooee of what’s on this map.”* (Richmond Windsor Floodplain, Rising Road Access)

*“I think we do as I didn’t know we potentially could be flooded.”* (Penrith Floodplain, Rising Road Access)

*“I think it’s important to educate people about what to do, the importance of having a plan, because we’re all a bit gobsmacked. Panic isn’t good. You have to be careful about what you tell people about what could happen.”* (Penrith Floodplain, Overland Escape Route)

*“Seeing this now, if a flood happened, I’d feel a bit cross. You guys have had this plan in place, you could have let people know. It’s about raising awareness that it’s a possibility. I live right here and I’ve not really considered that it could be as bad as I now know it could. You want them to start thinking about what it might mean.”* (Penrith Floodplain, Overland Escape Route)

*“I think that we have to know it’s a real risk, and it’s relevant, and not just your suburb, so you’ve got to get people’s attention and that means giving them the sort of information we’ve had tonight.”* (Penrith Floodplain, Overland Escape Route)

Following are details of key themes that emerged in discussion about communications, including the important and salient benchmark set by the recent bushfires, the need for one overarching, authoritative source for communication, use of accessible language and the power of visuals. This is followed by an overview of what participants believe should be the key elements of an awareness and education campaign and how communications should be handled at the time of a flood.

### **Bushfire Communications have set the Benchmark**

In discussing communications about floods it is important to note that communications around the recent bushfires were very well received and appear to have set a benchmark for how communications in times of emergencies should occur. The key elements that were constantly referred to by participants were text

messages, the one authoritative voice (including a few mentions of former Commissioner Phil Koperberg) and the 'Bushfires Near Me' app.

*"Should be as good as what the bushfire people have."* (Richmond Windsor Floodplain, Low Flood Island)

*"We saw in other situations people hadn't evacuated when told they should, and now people might pay a bit more attention. And they pay more attention to getting messages across with texts and phone calls...that's progress."* (Penrith Floodplain, Rising Road Access)

*"A personalised automated phone call like we got in the bushfires would spur me into action."* (Penrith Floodplain, Rising Road Access)

## A Primary Authoritative Source for Communications

There was widespread demand for one clear, overarching authoritative source of information in times of flood, like there was during the 2013 Blue Mountains bushfires, and that the community should be advised of who this would be as part of the awareness and education campaign.

### ◆ The State Emergency Service (SES)

Most participants thought the SES could be the organisation responsible for communications at the time of flood, but others were unsure, seeing it mostly as an organisation of volunteers and hands-on responders. Perceptions of the SES varied significantly between participants who live in the Penrith floodplain and the Richmond Windsor floodplain, based on their previous experience with floods and exposure to the organisation and its volunteers.

Those participants living on the Penrith floodplain typically saw the SES as a response agency rather than an organisation responsible for planning or communicating about floods, while those living on the Richmond Windsor floodplain were more familiar with the broader nature of the SES's role. Despite this, there were still many gaps and, for example, most did not know it was responsible for producing flood bulletins and issuing evacuation warnings and orders.

A recent incident involving the closure of the Windsor Bridge due to predicted flooding led to some criticism amongst Richmond Windsor participants that the SES is overly cautious and not sufficiently familiar with how floodwater behaves in their local area. As noted, this and other perceived false alarms have eroded trust and created a sense that the SES is overly cautious among some residents, and has negatively affected their willingness to evacuate.

For those who personally knew an SES volunteer, their perceptions of the organisation were tied up with their perceptions of this person's capabilities. Some felt that while the SES was certainly a 'professionally managed' organisation with people in paid positions who were likely technical experts, the face of the organisation was the large number of volunteers rather than professionals, so had its limitations.

*"I'd like to put my trust in the head of the SES, not the volunteer who comes to my door and goes 'hey we need to get you out'."* (Richmond Windsor Floodplain, High Flood Island)

*"It depends who it is and the individual. I've grown up in the bush and done all these things and trust myself more than a lot of these other people, while other people trust these guys because they're in a uniform."* (Richmond Windsor Floodplain, High Flood Island)

*“The SES has done amazing work over the years with flooding. They’ve gone out and helped an abundance of people.”* (Richmond Windsor Floodplain, High Flood Island)

*“I know one SES guy who couldn’t even tie a knot.”* (Richmond Windsor, Low Flood Island)

#### ◆ **Local Councils**

Most participants said the local council would probably be their first port of call if they wanted to know more about flood risk in their local area. They assumed they would be across flood planning and zoning issues, and would be able to provide information about flood readiness.

#### ◆ **Police, Fire Brigade and Rural Fire Service (RFS)**

Most participants thought these agencies would play active roles at the time of a flood, primarily advising people in-person and helping them to evacuate, ensuring road closures and rescuing those who become trapped. However, they did not see them as primary sources of information regarding floods.

### **Language**

There are low levels of understanding of the terminology currently used in flood communications. Key terms that were misunderstood included:

- ◆ **‘1 in 100 years’:** Participants interpreted this in a variety of ways. Many thought it referred to a regular cycle – that one of these floods happens more or less every 100 years; some thought the 100 years started now and therefore a flood would probably not happen in their lifetime, while some others felt that because there hadn’t been one in a long time, it was probably overdue. Quite a few participants (especially in the Richmond Windsor floodplain) mentioned ‘1 in 100 years’ without prompting because they had seen it in relation to their insurance or in information from the local council. However, none mentioned the term ‘1 in 20 years’, suggesting there is no real familiarity with this categorisation.
- ◆ **Gauge heights:** Most participants were not sure what gauge heights actually meant in reference to their own property and the roads they would need to use for evacuation, but felt this was essential to understand in order to be able to interpret flood warnings. They really just want to know when certain roads and bridges will be flooded so they know what routes to avoid or how long they might have to get out. This highlights the self-reliance in the community and the fact that people lack an appreciation of the fact that they may need to leave well before roads and bridges are flooded in order to avoid congestion and getting trapped.
- ◆ Terms like **minor, moderate and major flooding** were also seen as fairly meaningless and too open to interpretation.

Overall, participants want clear and simple terminology that sets out the level of risk they face from floods in general and predicted levels of individual floods, and the point at which they will need to evacuate.

*“Keep it in simple language, not technical terms; people who are not used to those terms will lose interest.”* (Penrith Floodplain, Overland Escape Route)

*“1 in 100 is likely once every 100 years, so if you live to 90 there’s a good chance you won’t see one in your lifetime.”* (Richmond Windsor Floodplain, Low Flood Island)

*“People need to know the height of the water relative to their house, so when warnings come out, I’ll know when it is going to directly impact me.”* (Richmond Windsor Floodplain, Low Flood Island)

## The Importance of Strong Visuals

Visuals proved very powerful in attracting attention and allowed participants to quickly grasp the seriousness of the issue.

- ◆ **Maps:** Analysis showed that A3 maps showing the extent of the 1867 flood were the most effective way of making the issue relevant to participants and helping them to understand the significance of a predicted flood extent. Some participants were keen to see variations on this map. Many wanted to see 3D topographical maps showing water depth. Some in the Richmond Windsor floodplain who were familiar with the height of their property in relation to the gauge were interested in seeing maps that showed the gauge height at which people in their area will lose road access so they know what parts of the flood bulletins to focus on.
  - It is important to note that the maps need accompanying information about when people in different areas need to evacuate by, otherwise some people would still leave it too late.
- ◆ **Animations:** While participants were only shown a short animation of different evacuation scenarios it was clear that these could also be used to vividly illustrate the importance of staged evacuations, while also demonstrating the extent and depth of flooding in different scenarios.
- ◆ **Photographs of past floods:** As noted, some participants found images of local landmarks inundated in times of flooding very compelling. The closer they were to their property, the more impact these had. This realisation prompted quite a few participants to call for information that is as tailored and localised as possible (e.g. effectively at the sub-sector level).
- ◆ **Evidence of past floods:** Participants regularly referred to seeing physical evidence of past flood levels and flood level totems in the community. This was clearly effective in raising awareness and could potentially be supplemented with additional markers further away from the waterways.

*“Maps make you pay attention and think it’s relevant.”* (Penrith Floodplain, Overland Escape Route)

*“Pictures are what I remember.”* (Penrith Floodplain, Overland Escape Route)

*“What will stick in my head? That map, with all the water over my property.”* (Richmond Windsor Floodplain, High Flood Island)

*“Animated – then people will watch because it is funny and something like that will stick in your mind.”* (Penrith Floodplain, Low Flood Island)

## 6.1 Awareness and Engagement Campaign

This section of the report sets out participants' suggestions about what they believe should be the key messages communicated in an awareness and education campaign and in turn how they should be delivered.

### 6.1.1 Messages

The information that participants thought should be the focus of communication during this campaign is as follows:

#### ◆ **This is serious and relevant to you**

As noted, the primary challenge will be to capture attention, focusing the community on the seriousness of the issue and its relevance to them personally, in a way that makes them 'alert but not alarmed'.

*"I need to know that it's relevant, so for me seeing the maps it makes me realise I'm in the [flood] area. Otherwise I would have thought I was too far back from the river." (Penrith Floodplain, Overland Escape Route)*

#### ◆ **Broad impact of flooding**

Communications should focus attention beyond the impact on residents' own homes but also on the likelihood of roads being cut off and impacts to electricity, gas, water, sewerage and other community services, and other general disruption that a major flood could cause. There was a sense that people need to understand why it's important to evacuate if told to, even if the water isn't going to reach their property.

#### ◆ **There is a plan**

After becoming aware of the risk of flood, participants said their first question will be whether or not a plan is in place and suggested it would be helpful to provide reassurance on this point, and ways for people to access the plan if they wish.

#### ◆ **You should make a plan for your household**

Participants felt they should be encouraged to refer to a checklist of ways to prepare for a flood and what to do at the time of a flood, including what route they would take out of the area, and discuss this with their family.

While they had previously thought this would all be common-sense, like putting things up high, after understanding the potential for broader impacts they realised there was perhaps more that should be done, such as making plans for pets or livestock and what to take, having various emergency supplies and tools on hand, ensuring documents and valuables can easily be gathered, and even working out who could help them or who they could help (neighbours, friends etc.). Consideration could also be given to noting that people can't always think straight in times of emergency and this could lead to costly mistakes.

*"People probably should talk about it with their family, like where should we go." (Penrith Floodplain, Overland Escape Route)*

*"[In scenario-testing] I wish they'd said to use this road or that road in the Bulletin... When I saw that map with the flood thing it panicked me – it was such a wide area. It looked like we were locked in our own island."* (Richmond Windsor Floodplain, Low Flood Island)

#### ◆ **Arrangements for children, the elderly and sick**

It was clear that, on hearing an evacuation order, parents working outside the local area with school-aged children would immediately head back to try and collect them, potentially causing serious traffic issues. A similar situation is likely to occur with preschools and childcare centres, aged care homes and hospitals, so it will be important to clearly explain the evacuation procedures for children, the elderly and sick, including where they are likely to be taken. This information will be needed to inform family discussions.

#### ◆ **The potential need for staged evacuation**

Participants felt it was important that the community be made aware that the topography of the HNV, the risk of flood waters isolating communities, and the risk of major traffic jams means staged evacuation may be necessary to ensure everyone gets out in an orderly manner, and it is therefore very important that they follow instructions (and know where to find them).

Showing the NICTA video was very effective in demonstrating the cumulative impact of following vs not following instructions, while also conveying the importance of the community working together rather than effectively against each other to get through a flood.

*"I think it's important that people understand there is a plan and to follow the direction. Explain 'we will be evacuating people in stages, so you need to be aware and responsive if it happens, and you have to try to do your bit as you're asked'."* (Penrith Floodplain, Overland Escape Route)

#### ◆ **How much warning they'll have before an evacuation order and how it will work**

Participants were keen to know approximately how much warning they would have about the need to evacuate, how the order would come and (once they became aware of issues around rising flood waters cutting off access) what route they would need to take. While most would go to a friend or family member's house (especially their mother's), some wanted to know the location of evacuation centres. Some also wanted to know what would happen if they didn't make it out in time.

*"I think they've got to have a plan to let people know in the case of emergencies, how they're going to let you know, there's got to be a plan. We should know we'll get a phone call or a knock at the door, when the time comes."* (Penrith, Overland Escape Route)

#### ◆ **Where to get more information**

As noted, participants wanted to know where they should go for information in the event of a flood and were keen that there be one primary authoritative source. Some also wanted to know where to go *now* for more information about how to prepare for a flood. Those in the Richmond Windsor floodplain in particular were more likely to want specific information about the gauge height at which their own home would be affected.

Some participants, primarily those living in the Richmond Windsor floodplain, wanted more detailed information such as:

- Who makes the decisions?
- If the road is to be closed, who closes it? When?

- What are my rights during a flood? Do I have to evacuate? What happens if I don't, including legal implications?
- Council works that might impact vulnerability of their area to flood
- How flood risk levels are determined – as this impacts insurance

### 6.1.2 Materials and Channels

Participants were keen for the awareness and education campaign to provide information in a range of different ways, with the core being a broad public relations campaign raising awareness of the issue, advising people to look out for the delivery of a brochure and checklist to each household, and that they should then discuss a plan with those living in their household.

They acknowledged that the campaign should be more than just a one-off event and requires some kind of periodic reinforcement, with consideration also given to how to educate newcomers to the area between campaign waves.

It will be important to give careful consideration to the use of easily accessible language around the likelihood and height or severity of floods, and avoid the use of jargon.

Note that early in the groups participants were asked about situations in which their local communities had got together to work on projects for the benefit of the community, then at the end they were asked about the extent to which they would be interested in getting involved in developing flood evacuation strategies for their local area. Overall interest was very low, and was concentrated amongst some of the participants in the Richmond Windsor area. In some part this is likely to reflect participants' sense that the risk of a major flood occurring was very low, while some people expected they wouldn't have the time or interest in this level of involvement.

More detail on preferences for delivery of information follows:

#### Letterboxed Brochure and Checklist

Most participants wanted to receive an 'information pack' in the mail which could potentially contain a brochure or booklet and a checklist with key contact details that can be stuck on the fridge or inside a cupboard door.

Participants said it would need to be designed in a way that captured their attention and made it relevant to them personally, potentially delivered following a public relations campaign that encouraged them to look out for it. They warned that it would need to have their name on the envelope rather than be sent 'to the householder', with the information specific to their suburb, if not their street or immediate area.

Participants said it was important it contained a map that shows their home in relation to major flooding (such as the 1867 flood). Note however that some participants in the Richmond Windsor area are very familiar with this map and it would need to be refreshed in order to get attention (e.g. give a more detailed sense of different water depths). Many thought the brochure should provide a website link for those who want more information.

*"I think an A4 book, a mail out that had all the information about floods that is directed to the person that lives there, nothing you'd throw out. Something that is marketed around the*

area. It could be in the Gazette as an awareness event.” (Richmond Windsor Floodplain, Rising Road Access)

“If it had my own suburb written on the bottom of it I might pay attention, like ‘Floods in Regentville, are you safe?’” (Penrith Floodplain, Rising Road Access)

“You can say, ‘if you live in an area like this, here’s some things you could do. Here’s a pack. A fridge magnet, in case something happens’. The relevance is key, not just sending the same thing out to everyone in Penrith.” (Penrith Floodplain, Overland Escape Route)

#### ◆ Website

Participants assumed there would be a comprehensive website they could visit to get more detailed information including maps, animations and videos. They were not familiar with the FloodSafe website. It is important to note however, that a significant minority of participants, particularly those who were older, were not online and so online sources of information must always be supplemented with hard copy and other options including face-to-face contact.

“The old couple across me don’t have the internet or mobile phones. He needs something in his hands to believe it.” (Penrith Floodplain, Rising Road Access)

#### ◆ Facebook

Participants appeared to be relatively heavy users of Facebook to share and get information about local events and news from local newspaper (e.g. Hawkesbury Gazette) and local councils (Penrith Council is particularly active on Facebook). While not everyone is online, Facebook, along with Twitter, will be an important channel to leverage in order to drive people to the website and relevant emergency radio stations. YouTube was also mentioned.

#### ◆ An App

There was very strong interest in using an app to keep informed about flood risks in the same way as the ‘Fires Near Me’ app, especially among younger participants. No-one mentioned the existing FloodSafe app. Consideration could be given to synergies and development of a ‘Floods Near Me’ app or a broader emergency services app that people may be more likely to download in advance of a flood. Certainly the awareness and education campaign will need to focus attention on downloading the app in advance. The app could also contain useful information about flood preparedness including checklists, maps and animations (including predicted flood levels for different scenarios).

#### ◆ PR Campaign

As noted, some participants admitted their level of concern about floods is currently so low they would probably not read anything in their letterbox unless it was cleverly marketed to make it relevant to them. Some suggested the best way to get their attention would be through some kind of local campaign that could include local advertising and news stories, while others thought it would probably take a television and radio campaign to capture their attention. Many older people said they read their local newspaper. Some also suggested the use of signs in stores, roadside banners and roadside LED variable message boards to, for example, prompt people to fill in their flood plan and visit [floodsafe.com.au](http://floodsafe.com.au) for more information.

“For me it would be more advertising and in my face like a campaign slogan but I wouldn’t read stuff in my mail.” (Penrith Floodplain, Rising Road Access)

### ◆ **Word of Mouth**

While not specifically mentioned by participants in the context of a campaign, it was clear that a lot of information, particularly amongst long-term residents, is shared by word-of-mouth so it will be important to target key opinion leaders for one-on-one briefings, and to let people know there will also be door to door communication during evacuations. Over time, resourcing limitations could be conveyed as part of a call for volunteers to help with word of mouth in their local area.

### ◆ **Displays in High Traffic Areas or at Local Events**

Some participants mentioned the possibility of displays or small-scale exhibitions in high traffic areas such as their local library, council chambers, shopping centre or club, or at local events like agricultural shows and sporting matches. These could include maps, animations, historical photos and potentially a working 3D topographical model of the area that shows how water rises in different types of floods, or even a model house affected by a flood. One participant mentioned seeing a model 'cyclone house' in the Darwin Museum which they found quite thought-provoking.

*"They should do something visually. If they should show you that your house was two metres under water; that would make people think. It's thought provoking. The museum in Darwin has the cyclone house. They have the noise and the iron shakes. The SES should have some visual things like that in their tent at the show."* (Penrith Floodplain, Low Flood Island)

### ◆ **Community Meetings**

In the Richmond Windsor area some participants were interested in attending an information session with the opportunity to ask questions while others said they would be willing to attend two or three meetings to help prepare a plan for their immediate local area. These participants noted however that they would only attend something a) if they were sufficiently concerned, and b) if it was specifically geared to their immediate local area. Despite this, it is important to note that many in this area feel quite self-sufficient and think they may well know best. There was little interest in participating in any sort of ongoing group or committee.

There was also some discussion about the nomination of locals who could potentially act as a local 'warden' who could be the contact point for specific information for locals in relation to both preparing for and during floods. They could also potentially be responsible for extremely localised flood preparation management e.g. being responsible for a couple of streets near them, keeping people informed, setting up neighbourhood plans, and perhaps running reasonably frequent reviews of evacuation procedures or even drills.

*"There is an age difference with people coming in...the younger generation is not going to have previous experience, no knowledge specifically about what to do. I'd suggest having a group or community event that shows you step-by-step how to get your house prepared."* (Richmond Windsor Floodplain, Rising Road Access)

*"I'd go to a meeting but don't think I'd join a flood planning committee; it would be very hard to sustain interest."* (Penrith Floodplain, Overland Escape Route)

*"Life's much busier in the Penrith area. That would work well in country town areas, where there's less people."* (Penrith Floodplain, Overland Escape Route)

### ◆ **Insurance Companies**

Many participants had recently been reminded that they live in a flood zone by a letter from their insurance company advising their premiums had gone up as a result of flood risk (often dramatically

so), with some reporting they were told that flood zones have been recalibrated. Some reported telephoning their insurance company to get more information about the basis on which their home was reassessed and said it was difficult to get any information. Consideration could therefore be given to ensuring some consistency in the information being provided by insurance companies and the language that is used.

#### ◆ **Local Council**

Many participants, particularly those in the Penrith area, indicated that their local council would be the first place they would call for information about flood impacts on their own property, including the relative height of their property in relation to the gauge. It will be important to ensure that messaging is consistent and that councils are well prepared to answer questions and direct the community to appropriate sources of information. Information could also be disseminated through council channels including newsletters, websites and Facebook pages.

#### ◆ **Schools**

In discussing the best ways of educating the community, many participants with school-aged children or grandchildren suggested an education program in schools and talked of many situations where their children had come home with information that had prompted them to discuss an issue as a family – especially if it was part of a homework assignment they had discussed with them. Consideration could be given to preparing communications materials for use in schools (e.g. in conjunction with a unit on government taught to years 3 and 4).

*“I think the schools are one of the better ideas, if kids come home and talk about it, it prompts adults.”* (Penrith Floodplain, Rising Road Access)

*“Parents learning from children... Let’s just take Emu Plains, the three public schools...In year 6 if they all had to do a project about that, 90% of the parents would go ‘holy hell, look at this’. It’d be better than some bloke in a shopping centre with a sign trying to get your attention.”* (Penrith Floodplain, Overland Escape Route)

#### ◆ **Real Estate Agents**

Participants were aware that there is a lot of movement in and out of the Valley area, with new housing developments, people buying houses or renting, and that it will be important for these people to be informed about flood risk, particularly if they don’t see the education campaign. Some suggested that local councils and real estate agents should provide relevant brochures as part of a welcome pack.

*“The real estate agents need to provide people information because I rent and I don’t get information that homeowners get [from the local councils].”* (Penrith Floodplain, Overland Escape Route)

#### ◆ **Non-English Speaking Communities**

Some participants noted that some in their community do not speak or read English and the importance of ensuring materials were available in key languages.

#### ◆ **Event or Simulation**

Some participants suggested the use of one-off or annual events to focus the community on floods, such as a flood evacuation simulation or Flood Awareness Week. Consideration could be given to using variable message boards as an annual reminder-style event on the anniversary of the 1867 flood (1 June), similar to the annual reminder to change your smoke alarm battery at the end of daylight savings.

## 6.2 Communications in the Event of Flood

When discussing how communications should be handled in the event of a flood, the key themes were as follows – by expected sources and then messages. There was a strong consensus that the best way to keep people informed is via SMS and an app like ‘Fires Near Me’, along with telephone calls and door knocks, following their bushfire experience with these forms of communication. Quite a few participants also indicated that they would be looking for information and verification via multiple sources.

*“I don’t have 100% confidence in any one source – I’d listen to a few. But ultimately you have to be responsible for your own decision. You would pull up at a roadblock and ask a policeman.”* (Richmond Windsor Floodplain, Rising Road Access)

*“I’d want alerts on all mediums – radio, TV and I would start watching websites like SES or BOM to see what’s happening as they usually have maps.”* (Penrith Floodplain, Rising Road Access)

### 6.2.1 Sources

#### ◆ One Primary Authoritative Voice

While most participants said they would use a variety of information sources to find out information in the event of a flood, they placed high importance on having one clear authoritative voice and were keen to know who this would be.

*“It should be coordinated. It could be police, fire service or SES but it MUST be coordinated.”* (Richmond Windsor Floodplain, Rising Road Access)

*“This goes across multiple council areas so we would need to avoid different councils giving their own response.”* (Richmond Windsor Floodplain, Rising Road Access)

While keen to know which was the ‘master’ source of information, participants also indicated that they would seek verifying information from a range of different sources including radio, TV, word of mouth, social media and the Bureau of Meteorology website.

#### ◆ An App

Following a positive experience with the ‘Bushfires near me’ app, there was considerable interest in a ‘Floods Near Me’ app run by this one clear authoritative voice where they could immediately access up-to-the-minute credible information. It is important to note however that some remote communities have limited and unreliable mobile/internet access. There was no awareness of the existing FloodSafe app.

#### ◆ SMS and Recorded Telephone Messages

Again following the experience with bushfires, there was an expectation that SMS messages would be used to communicate with people in the area in relation to evacuations, with some also saying they expect calls to landlines with recorded messages will be used. Many felt that these would be particularly effective in delivering urgent information.

*“They should use SMS like they did in the bushfires...that was the best. You just have to be in the area, you don’t have to live in the area.”* (Richmond Windsor Floodplain, Rising Road Access)

*“Personalised automated phone call like bush fires would spur me into action.” (Penrith Floodplain, Rising Road Access)*

*“How else? Set up the same thing as for bushfires – send a text, they know where people’s phone address is, they should tap into what they did with the bushfire system – I assume SES has access to that.” (Richmond Windsor Floodplain, Low Flood Island)*

#### **Radio and TV**

Most said they would also listen to their regular radio and TV stations but it is important to note that there was very low awareness that the ABC is the emergency broadcaster, with some young people saying they would not know where to find this station on the dial. A few said they would listen to local Hawkesbury radio but most admitted they did not know the frequency.

There was some acknowledgement that commercial TV and radio may not be reliable sources of information when it came to serious decisions like whether or not to evacuate because of their tendency to sensationalise the situation. Nonetheless, some indicated they would still rely on mainstream television and radio stations for information, highlighting the importance of these channels. Some also worried that they may not get the information they need if they missed the relevant bulletin.

*“When the bushfires were on I was right into it and looking at what was happening where, I was following what was coming up on the news and listening on the radio...” (Penrith Floodplain, Rising Road Access)*

*“I’m a stress-head; I would be looking at every media I could find.” (Richmond Windsor Floodplain, Low Flood Island)*

*“The TV, the media, they beat it up and it panics all the new people in the estate, then they all go out and want to look [at the flood], that’s what causes traffic jams, everyone going to have a look.” (Richmond Windsor Floodplain, High Flood Island)*

#### **Websites and Social Media**

Many participants said they would also monitor the Bureau of Meteorology or SES websites, possibly look at local council websites, and use social media like Facebook (and to a much lesser extent Twitter) to follow what was happening. Some suggested it would be useful to provide videos on these websites showing how to prepare your home for evacuation, providing detailed evacuation instructions and routes for people living in different areas, and using animations to reinforce the importance of staged evacuation and how it would work.

*“It shows that logic makes sense; that’s the problem with human nature, people don’t follow logic when panic sets in. Preservation of property over life. Leaving later, it’s not the best idea, even though it’s what I’d do.” (Penrith Floodplain, Overland Escape Route)*

*“They should play it on commercial TV – an advertisement... or the internet, linked to a related article, on the SES website...or the local councils’ websites.” (Penrith Floodplain, Rising Road Access)*

A few people also mentioned that social media can fuel panic and concerns around flood events with people sharing inaccurate information, so consideration may need to be given to countering this. This is where positioning of the authoritative voice will have an important role to play.

### ◆ **Knock at the Door**

While not everyone said they would expect or wait for a knock at the door to tell them to evacuate, there was a sense that this would certainly drive home the seriousness of the situation to those who had not already left.

*“It’d need to be face to face, so you take it seriously. If it’s over the radio you’d think I’ll get to it when I get to it.”* (Penrith Floodplain, Overland Escape Route)

*“There’s not the manpower to door knock every house though... there’s not enough people in the SES to do that.”* (Richmond Windsor Floodplain, Low Flood Island)

### ◆ **Variable Message Boards**

A few mentioned the use of roadside variable message boards and thought they could be very important in helping manage traffic and advising of routes that remained accessible.

## 6.2.2 Messages

In the event of an actual flood, participants said the messages that would be most effective in motivating a quick evacuation would be as follows, in descending order of importance.

1. **‘You must evacuate immediately – evacuate NOW!’:** Most participants said they would respond to a definitive order such as this from the SES or other emergency services, especially if delivered personally or via megaphone from a vehicle in their street, or even via SMS or telephone. In turn they would need to be told where to go, which way, key things they should take. Some may need to be told how many minutes they have, as they may assume they have much longer, or they may leave so quickly that they leave important items behind unnecessarily.
  - NB: In a staged evacuation some people may need to be told explicitly why they must wait for others to evacuate before them – this will need special consideration because it will be very difficult for some people to wait and some just won’t wait.
2. **Potential for loss of life – not least due to people getting trapped in major traffic jams caused by people not following evacuation orders:** The speed at which people will evacuate increases dramatically if they are trying to save their life rather than their property. However, while this is particularly effective for families with children who would be amongst the first to leave, others are more cynical and some don’t tend to believe it at all (especially older males).
3. **Road access:** Hearing that road access is cut or about to be cut, that road diversions are in place, that cars are trapped on inundated roads and that people are trapped in flood affected areas. Messages about road access were the most effective across the board. They also wanted to know what level the gauge was at, and at what point access was expected to be lost.
4. **Water:** Hearing that the water supply will be cut off or unsafe to use (no running water for drinking, cooking, bathing, flushing toilets, washing etc) makes many who would consider staying change their mind, especially if expected for an extended period of time.
5. **Sewerage:** Similarly, the fact that sewerage services will be affected (with no water to flush toilets, untreated sewage running through floodwaters) makes many more people inclined to

leave. This was a salient point for one participant whose wife had suffered health problems as a result of this in a past flood.

6. **Electricity:** Concern about electricity was far less than concern about water and sewerage. The main focus was on the safety risks associated with electricity coming back on when there is still water around and the potential for electrical appliances to be damaged. This was of greater concern than losing all the food in their fridge or freezer or having no power.

Other messages that participants said would make them leave more quickly included:

- ◆ Seeing a map or animation showing the potential extent and depth of the flood;
- ◆ The need for staged evacuation to allow everyone to get out safely;
- ◆ Knowing they may run out of food and drinking water if flood waters take a long time to recede; and
- ◆ Knowing that wildlife including snakes would also be seeking higher ground.

More broadly, participants said they would be looking for information on:

- ◆ Where to go to get accurate authoritative information from whoever is in charge;
- ◆ Evacuation procedures including:
  - How they will find out whether or not to evacuate;
  - How much notice they will have;
  - Whether planned evacuations will take place and the importance of this;
  - The route they should take and any back-up routes they should be aware of;
  - The location of evacuation centres;
  - How long they are likely to be evacuated for;
  - Evacuation plans for schools, preschools, childcare centres and nursing homes; and
  - What to do with livestock.
- ◆ How to prepare their home for flood;
- ◆ What to take with them when they evacuate;
- ◆ What to do if they get isolated either at home or when driving by floodwater;
- ◆ Who to call if they need help; and
- ◆ Advice to those who choose not to evacuate.

## 7. ANALYSIS OF LOCAL GOVERNMENT FEEDBACK

The table on the following pages sets out our analysis of the feedback gathered in the in-depth interviews with local council community engagement officers.

The aim of this phase of the study was to provide additional perspective on the best ways to engage with the community, to build their flood awareness and resilience before and during flood events. We spoke with these key stakeholders because they have daily interactions with the community on these and similar issues.

The discussion included asking the officers to provide an overview of the community profile, assess the current level of awareness around flood events in their area and predict the community's likely reactions in the event of a flood. The officers were then asked to provide suggestions based on their experience as to what communications approaches would work best during both a strategic awareness campaign and during a flood event. Officers then gave their perspectives on the greatest challenges any such campaigns might face, and their thoughts on communication priorities.

Overall, this feedback was in line with that from the community in terms of the community profiles and council officers' perceptions of current awareness of flood risks and likely reactions to flood events among the people in their shires. The officers highlighted and reiterated that the greatest communications challenges would lie in facilitating the community's understanding of the risks of flood and why they need to be acting now to prepare (i.e. in overcoming inertia).

Their suggestions for communications as detailed in the Awareness Campaign Approaches and Flood Event Communications columns in these tables have been considered and have informed the communications and engagement recommendations for this study.

Council	Community Profile	Current Flood Awareness	Likely Reaction to Flood Event	Awareness Campaign Approaches	Flood Event Communications	Communications Challenges/Priorities
<b>Penrith City</b>	<ul style="list-style-type: none"> <li>• There is an east/west and urban/rural divide. Urban community mainly younger families.</li> <li>• Strong sense of pride, locals describing themselves as industrious, can-do, pioneering, self-reliant and innovative (research based).</li> <li>• Those who have overcome diversity are well regarded, as well as volunteers, footballers and the Mayor.</li> <li>• Informal communications network is strongest through local business and politicians.</li> <li>• Social media is well used (Facebook mostly for those aged 30-50 years; Instagram and Kick for younger).</li> <li>• Local papers and Vintage FM major channels (paid mostly).</li> <li>• Small population of Chinese market gardeners around South Creek.</li> </ul>	<ul style="list-style-type: none"> <li>• Little awareness of floodplain areas.</li> <li>• Overall apathy towards flooding.</li> <li>• Not a 'top ten' issue.</li> <li>• Floods are only raised in the context of property values.</li> <li>• Most people get their information from the local papers and radio.</li> </ul>	<ul style="list-style-type: none"> <li>• First reaction to awareness campaign would be concern for property values.</li> <li>• Most concerned would be older people worried about their mobility and those who have just bought their homes.</li> <li>• Most people would leave when they realise the danger.</li> </ul>	<ul style="list-style-type: none"> <li>• Need for a dramatic story or people will not be interested.</li> <li>• Draw attention to potential loss of life rather than property.</li> <li>• Key elements needed are a champion (ideally with a local connection), community forums, door knocking (with specific details about their property and access).</li> <li>• Strong visual such as photographs informing people of what they need to plan for.</li> <li>• Language needs to be very simple – e.g. 3 steps to be safe.</li> <li>• App is supported but doesn't believe people will download it until a flood event is imminent.</li> <li>• Schools are a key channel (councils already support sustainability so could be expanded to cover floods).</li> </ul>	<ul style="list-style-type: none"> <li>• Local radio – Vintage FM and ABC are key.</li> <li>• SES door knocking thought to be more powerful than SMS.</li> </ul>	<ul style="list-style-type: none"> <li>• Getting the community's attention in the first place and starting the conversation is going to be the greatest challenge.</li> </ul>

Council	Community Profile	Current Flood Awareness	Likely Reaction to Flood Event	Awareness Campaign Approaches	Flood Event Communications	Communications Challenges/Priorities
<b>The Hills Shire</b>	<ul style="list-style-type: none"> <li>• Impacted areas largely non-urban. There's a small scattered permanent population with a large visitor population.</li> <li>• Tends towards elderly.</li> <li>• Word of mouth, schools, social media and roadside/store signs are key communication channels.</li> <li>• Communities are connected through service and sporting clubs.</li> </ul>	<ul style="list-style-type: none"> <li>• Aware but in denial.</li> <li>• Prevailing attitude: <i>'It's not a problem until it's a problem'</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Most would stay, believing they can manage (self-reliant).</li> </ul>	<ul style="list-style-type: none"> <li>• Flood plans and communication need to be highly localised (site-specific).</li> <li>• Local champions are important – higher trust in locals (e.g. RFS).</li> <li>• Messages need to be blunt – this is a dangerous place.</li> <li>• Leverage Bureau of Meteorology (BOM) site and its reputation.</li> <li>• Visual mapping of each area.</li> <li>• Flood totems in each area.</li> <li>• FloodSafe materials are good but need fine-tuning.</li> <li>• Campaign needs to be long term with many layers and constantly reinforced.</li> </ul>	<ul style="list-style-type: none"> <li>• Has to be highly localised whether delivered via doorknocking, radio or SMS.</li> <li>• Limited mobile access in some areas.</li> <li>• Need to be clear about the trigger for evacuation.</li> </ul>	<ul style="list-style-type: none"> <li>• Community inertia is the greater challenge.</li> <li>• Needs to be made a community effort (e.g. like Tidy Towns) – i.e. <i>'We are a flood aware community'</i>.</li> </ul>
<b>Blacktown City</b>	<ul style="list-style-type: none"> <li>• Fast growing, large, diverse community with strong rural/urban divide.</li> <li>• Ward 1 is the most impacted (largely Anglo Saxon population).</li> <li>• Asset rich mix of long-term residents who know each other (tend to be older/elderly) and new housing (connected through proactive developer strategies e.g. events, newsletters).</li> <li>• Established residents are used to working together.</li> </ul>	<ul style="list-style-type: none"> <li>• Aware of local road flooding.</li> <li>• Concern limited to inconvenience.</li> <li>• Most people get information from local papers and social media.</li> </ul>	<ul style="list-style-type: none"> <li>• There would be alarm about property values.</li> <li>• <i>"They wouldn't go – these are homes, not houses – and people will fight to the death to protect them."</i></li> </ul>	<ul style="list-style-type: none"> <li>• Face-to-face and/or one-on-one phone calls crucial to control the message (local ward ambassadors trained to educate the community re floods).</li> <li>• Town meetings promoted via posters, letterbox drops, local papers and social media are effective.</li> <li>• School engagement important but needs to be personalised.</li> <li>• Message around potential impacts on the rest of community.</li> <li>• App is a good idea but people will only download it when they see an immediate need.</li> <li>• Older communities open to engagement, others prefer to know someone else has a plan and is in charge.</li> <li>• Shopping centres and festivals/shows.</li> </ul>	<ul style="list-style-type: none"> <li>• Community hasn't really thought about as they haven't experienced it.</li> <li>• SMS and doorknocking preferred.</li> </ul>	<ul style="list-style-type: none"> <li>• Helping people to understand why it matters (the risks) and how it affects them directly.</li> <li>• Clear, crisp, short messages about what they need to do, without jargon.</li> </ul>

Council	Community Profile	Current Flood Awareness	Likely Reaction to Flood Event	Awareness Campaign Approaches	Flood Event Communications	Communications Challenges/Priorities
<b>Hawkesbury City</b>	<ul style="list-style-type: none"> <li>• Diverse community – landed gentry, RAAF, lower socio-economic urban areas.</li> <li>• Largely Anglo population with urban indigenous population.</li> <li>• Most people live and work in the area, but some absentee landholders.</li> <li>• Largely connected community used to working together, especially in villages west of the river.</li> <li>• Relatively strong service clubs, churches, cultural interests, etc.</li> <li>• The community gets their information from council, SES, local newspapers (very strong/have associated social media), BOM site, and word of mouth/memory of last flood.</li> <li>• Older families and the Mayor are community leaders.</li> </ul>	<ul style="list-style-type: none"> <li>• General awareness but very low concern about flood risk (more concerned about traffic, roads, development).</li> <li>• General perception of flooding is difficult for people to grasp: ‘The river is so much lower than my land’.</li> <li>• The issue doesn’t come up: <i>“People aren’t interested until it rains.”</i></li> <li>• Council pushes information out via statement on envelopes and refers people to FloodSafe.</li> <li>• People believe that they will have time to evacuate or can stay in isolation.</li> </ul>	<ul style="list-style-type: none"> <li>• Hard to engage the community due to extended period since last major flood.</li> <li>• ‘Old-timers’ confident they know more than the authorities.</li> <li>• Most residents would stay (not frightened of flood). <i>“They will only go when the water is lapping at their feet”.</i></li> <li>• Greatest awareness is attached to the bridge going under.</li> </ul>	<ul style="list-style-type: none"> <li>• Most would prefer to be told what to do rather than be involved in decision-making (but many not likely to trust authorities over their own experience).</li> <li>• The need to leave has to be very clearly communicated.</li> <li>• Residents understand the bridge in relation to flood and what that means to them, but not flood depths, etc.</li> <li>• Risk of community backlash with flood warning signs.</li> <li>• Very supportive of an app (more people have mobile than internet access).</li> <li>• FloodSafe materials are good but need to be updated and relaunched.</li> <li>• Special needs relate to stock and machinery.</li> </ul>	<ul style="list-style-type: none"> <li>• Needs one timely and trusted source of information (figurehead).</li> <li>• Information has not been sufficiently timely in past flood events.</li> <li>• Council website links to SES website (council doesn’t want to own the SES responsibility but community does turn to council for information).</li> <li>• RFS model very effective (SMS and doorknocking)</li> <li>• Need an online mapping approach like RFS to keep public informed of flood levels and evacuation process (i.e. already left, leave in 1 hour etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Need to show why it matters – e.g. video of Brisbane floods, model showing extent of floods and necessity for evacuation.</li> <li>• Some areas do not have mobile phone coverage and lose power during floods.</li> <li>• People need to know what to do in a flood; identification of evacuation routes; evacuation destinations; what to take; roles of SES, Council, Police, Roads and Maritime Services; information about road closures; who to go to for post flood assistance.</li> </ul>